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Sense in Communication

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Abstract

The demand for text messaging relative to telephony, the amount of time spent participating in virtual worlds or digital games relative to television viewing, and the value of camera phone services all depend on how persons make sense in communication. Three models for communication are information transfer, storytelling, and presence. While analysis of communication has tended to employ the first two models, the third model provides a better orientation for recognizing and organizing useful knowledge about sensuous choices in communication. Making sense of presence of another like oneself is a good that drives demand for a wide range of communication services. From study of living organisms, artistic masterpieces, and media history, this work documents knowledge about this good. Providing means for persons to make sense of presence encompasses competition among communication services with different sensory qualities. Competition to support this good offers enduring opportunities to create high industry value.

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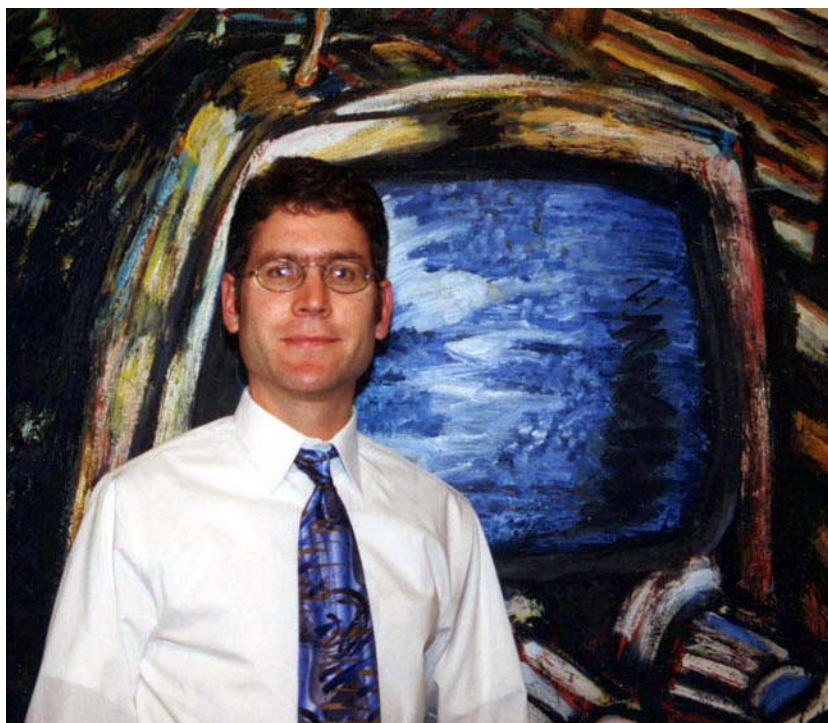
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[1] The opinions and conclusions expressed in this paper are those of the author. They do not necessarily reflect the views of the Federal Communications Commission, its Commissioners, or any staff other than the author. I am grateful for numerous FCC colleagues who have helped me and encouraged me over the past eight years of my career at the FCC. Author's address: Douglas.Galbi@fcc.gov; FCC, 445 12'th St. SW, Washington, DC 20554, USA.

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A specter is haunting perceptive persons concerned about communication. After a recent university lecture on new communication technologies, a listener walked up to the learned lecturer and asked:

> *As an apprentice information designer, I regularly have to decide whether to communicate information in words, images, or sounds. How do I decide this? And what guidance am I getting from my teachers, or people like you, about how to do so?*[1]

This is no sharing of an impersonal fantasy. It's real communication. Such a practical, personal question! What an awkward situation! A scene sure to be played out around the world over and over again in meetings, personal encounters, and minds!

In 1969, just one word seemed to sum up the future of sense in communication. An executive vice president of one the most prestigious research and development organizations in the U.S. declared:

> *Rarely does an individual or an organization have an opportunity to create something of broad utility that will enrich the daily lives of everybody. Alexander Graham Bell with his invention of the telephone in 1876, and the various people who subsequently developed it for general use, perceived such an opportunity and exploited it for the great benefit of society. Today there stands before us an opportunity of equal magnitude –* PICTUREPHONE® *service.*[2]

PICTUREPHONE® was designed to allow persons to see each other during a telephone conversation so as to "convey much important information over and above that carried by the voice alone."[3] To a conventional telephone, PICTUREPHONE® added a desktop display unit (weighing about 11.4 kilograms) with a 12.7 cm by 14 cm screen and a camera fixed above the screen.[4] Total research and development expenditure for this system amounted to about $2.6 billion in year 2001 comparable dollars, a magnitude about equal to research and development expenditure on the Boeing 747 jumbo jet.[5] But PICTUREPHONE® never got off the ground with users. While plastics have had great significance for daily life, PICTUREPHONE® today means nothing to most persons.[6]

Better understanding of sensuous choices in communication can contribute to better understanding of likely communications industry developments. Over the next few years, hundreds of millions of camera phones are expected to be purchased. What will be the relative value of pictures and voice in real-time personal communication? Choice between text and voice communication is already integrated and offered conveniently in mobile communications devices. The relative demand for these sensory forms has major implications for pricing, revenue structure, and competitive dynamics. More generally, sounds, sights, and words can all be encoded in bits. However, recorded music, radio, and telephony; photography, cinema entertainment, and video broadcasting; and e-mail, instant messaging, blogging, and journalism all have much different economics, industrial structures, and regulatory frameworks. The evolving use of sounds, sights,

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[1] Lantham (2001), p. 2. The above quote is what Lantham remembers a student asking him after one on his lectures.
[2] Molnar (1969) p. 134. Molnar was Executive Vice President of Bell Telephone Laboratories.
[3] Id. p. 135.
[4] Dickson (1974) p. 28.
[5] Id. p. 190 estimates, c. 1972, cumulative total research and development spending on Picturephone at $500 million. This figure is scaled to 2001 dollars using the Consumer Price Index.
[6] On the great importance of plastics in daily life, see Meikle (1995). Industry analysts in the mid-1960s, e.g. McGuire (1967), correctly recognized the future importance of plastics.

and words, and the distribution of creation and reception of these forms among persons and organizations, will drive over-all communications industry evolution.

Thinking about sense in communication can employ three general models of communication. One model is information transfer.[1] Different sensory circumstances, such as face-to-face communication, voice telephony conversation, text messaging, or new forms of web-based social software, can be evaluated for efficiency in information transfer. Another model of communication is storytelling – offering an arrangement of representations for shared interpretation. Sensuous values in storytelling affect storytelling style and how persons make bodily sense of a story. The art of storytelling concerns sensuous economics different from those of information transfer.[2]

A third model for thinking about sense in communication concerns sense of presence. Expert regulatory agencies dedicated to the public interest are beginning to explore the policy significance of presence in communication. In approving the merger of America On-Line (AOL) with Time Warner, the U.S. Federal Communications Commission (FCC) considered at length AOL's "Names and Presence Database" (NPD) and the provision of "NPD services." The FCC described names and presence thus:

> *The names and presence indication, as displayed on the sender's and recipient's buddy lists and screens, enable each to know the other's IM [instant text messaging] name and when he or she is online or available. The actual NPD consists, first, of a database of the users' unique IM names and addresses and, second, of a "presence detection" function, which is the IM provider's knowledge, and its ability to inform others, that a certain user is online and therefore available to engage in instant messaging. The NPD is more than simply a customer list. It is a working part of an electronic communications network for persons who have requested participation in the network and actually use it to exchange communications in real time with other users.[3]*

While the NPD might look like a customer list, the FCC argued that the NPD is truly and substantially something more. The last sentence of the above quotation struggles to describe exactly how a names and presence database differs from other databases of names and statuses.[4] The

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[1] For example, the Dead Media Project's definition of media draws on the model of communication as information transfer:

> *In the Dead Media Project we define media as a device that transfers a message between human beings. So a dance is not a "medium," because there is no device involved; but a bouquet of flowers can be a media.*

See Bruce Sterling, quoted in Bak (1999). Dancers and choreographers, in contrast, tend to regard dance as a medium. The information transfer model abstracts away from the functioning of living bodies in communication.

[2] Benjamin (1936b), p. 89, noted, "by now almost nothing that happens benefits storytelling; almost everything benefits information." The situation is much different in the beginning of the twenty-first century. Much of academic scholarship now aspires to storytelling. Business and political leaders have also widely employed this approach to communication. For an example of resistance against the dominance of storytelling, see Eskelinen (2003). But as Frasca (2003) points out, game scholars do not totally reject narrative as an aspect of games.

[3] FCC (2001) p. 60, para. 138.

[4] Names in general are an important part of the information economy. For exploration of some issues related to names, see Galbi (2001b) and Mueller (2002).

distinction seems to concern freely chosen openness to a certain type of communication and on-going acts of this type of communication.   Based on its analysis of NPD services and AOL's industry position in instant (text) messaging, the FCC approved the merger under a condition constraining AOL Time Warner's provision of "advanced IM-based high-speed services," such as video messaging.[1]

While the definition and significance of NPD services may seem obscure, presence provides an important concept for understanding sensuous choices in communication.[2] Much of the economic value of media products comes from persons seeking to understand the thoughts, feelings, and actions of persons like themselves. This sense of presence in mass media, such as television programs, popular music, and best-selling books, is the same as the sense of presence in personal communication. What makes a letter a joy, or a voice from an object (a telephone headset) a comfort, rather than a horror, depends on the sense of another's presence, despite that person's physical absence. The way this sense is activated, and at what cost, directly relates to sensuous

choices in communication. Persons serving in government and industry should be *always ready* to confront major challenges to advancing the public interest. Understanding persons' sense of presence is such a challenge.

Making sense of presence depends on activity throughout the living body. For many organisms, including humans, recognizing another like oneself is a central determinate of survival, comfort, happiness, and reproductive success. Physical proximity, which naturally integrates sensory modes, has been the primary circumstance of selective fitness for this activity.   For human beings, who typically understand themselves to be self-conscious and to have free will, recognizing another like oneself involves recognizing these qualities in the other. Making sense of presence invokes the full sense of the living human body in continuous seeking to understand another who cannot be fixed in any particular representations. In making sense of presence, sense is integrated and processed in mutually interacting networks of cells encompassing from the most direct physical transformation of stimuli to the most abstract cognitive processing. While different communication technologies have different effects on sense, making sense of presence creates a similar neurological state in any circumstance of communication.

Studying important artifacts and historical periods of communication helps bring to life the mechanisms of sense of presence.   The Hamzanama of Akbar, an extraordinary artifact produced in a highly developed, diverse sixteenth-century south Asian empire, supports a sensuous

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[1] Id., § IV.B. Michael Powell, then a Commissioner, now Chairman of the FCC, issued a detailed dissent from this finding. Chairman Powell did not dissent from the importance of presence in mediated, interpersonal communication; he put forward a difference assessment of benefits to the public and competitive risks. In light of actual industry developments, on July 31, 2003, the FCC lifted the condition. See FCC (2003).

[2] Some scholars have directed their efforts toward understanding presence. For a review, see Lombard and Ditton (1997) and the website for the International Society for Presence Research, http://www.temple.edu/ispr/.   Heeter (1992) p. 271 summaries a key issue: "…how do I convince participants that they and the world exist?"   This has also emerged as a major challenge in humanities disciplines.

performance in which many subjects could sense many different persons' presence. The Morgan Bible of Louis IX shows a specific sense of presence resisting attempts to be confined to a particular sensory mode. In sixteenth and seventeenth century England, sensuous choices in communication were a matter of intense, wide-ranging controversy. Purifying sense proved to be impossible in practice. Anxiety and uncertainty about sensuousness prompted new linkages between media and personal presence – both in little-discussed popular behavior and in well-recognized, sublime literature and performance.

To create new value for persons, media products and communication services should reduce the cost of making sense of presence within circumstances of desired communication.[1] That persons have favored color images over black-and-white images, and spending time watching television over spending time listening to the radio or reading, indicates that a greater sensory scope reduces the bodily work required to make sense of presence. Photographs taken relative to minutes of telephone conversations has been remarkable stable in the U.S. over the past century, despite a large reduction in the difference between the marginal cost of photographs and telephony (the data indicate that a photograph is worth about twelve thousand words spoken on the telephone). Telephony and photography, or more generally, different sensory modes, can be understood as complementary components of a composite good, sense of presence. The value of new media and communication services, such as virtual worlds and camera phones, is likely to depend more on their comparative advantages in making sense of presence than on their comparative advantages in information transfer or storytelling.

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[1] Privacy and time to be alone are also highly valued goods. Person acting individually have some effective means to realize these goods without purchasing communication services. More generally, the management of presence is an important source of value in communication services. This paper primarily concerns the production of presence in communication, not its management.

I. Making Sense of Presence

About 31,000 years ago in what's now southern France, human beings like you climbed through a cave stretching almost 500 meters underground. They entered the cave not to live or take shelter, but to paint and engrave upon its walls. They used yellow, red, and black paint, depicted individual animals and artistically composed multi-animal scenes, and made positive and negative hand prints.[1] Why?

Deep caves are not natural human habitat. A scholar who has extensively studied cave art observed:

> *Everywhere and at all times, the underground has been perceived as being a supernatural world, the realm of the spirits or of the dead, a forbidding gate to the Beyond which people are frightened of and never cross. Going into the subterranean world was thus defying ancestral fears, deliberately venturing into the kingdom of the supernatural powers in order to meet them.*[2]

Meeting supernatural powers means, more abstractly, being present in a myth, where myth can be understood in a general way:

> *myth is something other than an explanation of the world, of its history and its destiny; it expresses, in terms of the world, and what is beyond the world, or of a second world, the understanding that man has of himself in relation to the foundation and limit of his existence.*[3]

Seeking this understanding, humans may have gone underground, into the dark. But why did they create images there, rather than just speak and act?

They may have created images in response to sounds separated from images. Some evidence indicates that images of hoofed mammals tended to be drawn in environments where sounds, like clapping and chipping rocks, tended to be shaped into echoes sounding like hoof-beats.[4] Other

evidence associates rock art with shamanistic trances or hallucinations that might involve the dissociation of sounds and sights.[5] In the course of the evolutionary creation of human beings, such dissociations have been abnormal.[6] Prehistoric humans' sensuous choices in communication suggest a willingness to pay a high price – the time and materials to make extensive cave art – in order to make sense of presence.

Although making sense of presence has been important to humans from the beginning, trying to make sense of the way that humans make sense of presence can seem like a harrowing exer-

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[1] The discussion in this paragraph refers to the Chauvet-Pont-d'Arc cave. For discussion and views of the cave, see http://www.culture.gouv.fr/culture/arcnat/chauvet/en/

[2] Clottes (2002) p. 3.

[3] Ricoeur (1969) p. 383.

[4] Waller (1993).

[5] Clottes and Lewis-Williams (1998).

[6] In the natural world, sights and sounds are characteristically associated in normal circumstances. Communications technology developed within the past two centuries has created prevalent means for separating sights and sounds. But the issue of dissociation of senses is relevant even with respect to writing. See Eliot (1921).

cise on dead ground. In our age of mechanical reproduction, some have perceived in objects an aura.[1] Others have explored their self-consciousness in post-modern self-reflections on the complexities of representation.[2] Yet as Pierre Bourdieu warned, "the properly anthropological project of reappropriating reified meanings would be negated by the reification of the reappropriated meanings in the opacity of abstraction."[3] In counterpoint, Roland Barthes affirmed in sight a certain madness:

> *If I like a photograph, if it disturbs me, I linger over it. ...Lost in the Winter Garden, my mother's face is vague, faded. In a first impulse, I exclaimed: "There she is! She's really there! At last, there she is!"...to scrutinize means to turn the photograph over, to enter into the paper's depth, to reach its other side (what is hidden is for us Westerners more "true" than what is visible). Alas, however hard I look, I discover nothing: if I enlarge, I see nothing but the grain of the paper...[4]*

Is his mother really there? Do you want to controvert the proposition that "what is hidden is for us Westerners more 'true' than what is visible"?

Many in agon focus on enemies, allies, and strategies. Communication thus becomes preoccupied with death: "the birth of the reader must be at the cost of the death of the Author."[5] Signs of mortal struggle are everywhere. Responding to Hebrew scripture, a sensitive literary critic declared: "they ['the Scripture stories'] seek to subject us, and if we refuse to be subjected we are rebels…we are to fit our own life into its world…."[6] On a margin of this essay, a reader scrawled, "part of God's plan!"[7] A scholar exploring the "word-image opposition" declares that limitations in interpretation arise only from political positions and strategies, "not from any fictitious 'real' knowledge."[8] Then "all that we have is one ideology replacing another, everything becomes polemical, critical, bitter, humourless, and ultimately boring…."[9] One loses the physi-

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[1] For an enormously influential statement of this sense, see Benjamin (1936).

[2] E.g. Lyotard (1984).

[3] Bourdieu (1965) p. 2.

[4] Barthes (1980) p. 99-100.

[5] Barthes (1968) p. 148. Literary scholars seem to have overlooked the relationship of this work to an earlier work, *Le Mort D'Arthur.*

[6] Auerbach (1953) p. 15.

[7] Id. Another hand (among at least four that have written marginal words in the first chapter) wrote an anti-semitic slur concerning the author's intellectual integrity. Besides being hateful and moronic, the slur is truly and memorably sickening to find in a book entitled *Mimesis.* Defacing a book is generally against state law. In Washington, DC, where Lauinger Library is located, "Any person who shall wrongfully deface, injure, or mutilate, tear, or destroy any book, pamphlet, or manuscript, or any portion thereof belonging to the Library of Congress, or to any public library in the District of Columbia…shall, when the offense is not otherwise punishable by some statute of the United States, be punished by a fine of not less than $10 nor more than $1,000, and by imprisonment for not less than 1 month nor more than 180 days, or both, for every such offense." DC ST §22-3306. For a different perspective on defacement, see Taussig (1999).

[8] Bal (1991) pp. 11-2.

[9] Balthasar (1975) p. 72. Market failures in intellectual work have major implications for social justice and personal welfare. See Galbi (2002b) pp. 35-8 and Johnson (2003).

cal world, and loses the receptive sense that real presence in communication is ultimately that which boundlessly gives.

To understand how human beings make sense of presence, one needs faith in science. As a leading contemporary scientist declared, "the faith of the Enlightenment thinkers in science was justified."[1] Some see little evidence for that faith in social sciences. Against the empirical conviction of the limited importance and meager promise of social science in addressing real problems as actually debated in real societies here-and-now, this authority counsels:

> *It is the opposite conviction, blind faith if you prefer, that has propelled science and technology into the modern age. Bear in mind that that the original Enlightenment died within philosophy but not within science. The more pessimistic philosophers may be right about the social sciences, of course, but it is better to press on as if they were wrong.*[2]

His wager is worth making.[3] The biological sciences have already developed some wonderful knowledge concerning how humans make sense of presence. This knowledge can help bring life to communication industry analysis, and to the social sciences and humanities more generally. With faith in science, be not afraid and press on!

Sense of presence is implemented in a living human body with networks of anatomical components. A valuable neuroscientific model for a biological function is the optimal solution of a computational problem.[4] Since making sense of presence among complex, self-aware, self-determining organisms is highly contingent and time-bound, an efficient solution is a form of active, comprehensive attunement. The inputs and algorithms for solving the problem are a product of the evolutionary creation of human beings. Evolutionary biology and historical anthropology suggest that non-linguistic images are relatively important inputs and that muscular activity has strongly shaped human algorithms for making sense of presence. Some knowledge of the functioning of a living body can be intentionally, repeatedly, and verifiably created and represented. Scientific experiments document that different sensory modes are integrated at early levels of sense and that relatively complex aspects of sense are made at early levels of sensory processing. Overall, these different levels of scientific analysis all indicate that a living human body makes sense of presence in time and throughout the body in ways directly related to its physical structure.

Although computational neuroscience, evolutionary biology, historical anthropology, and experimental psychology cannot be realistically expected to produce absolutely certain truth, never to be revised or doubted, about some part of human nature, and even less about all of human being, they provide interesting and pleasant fields, with distant but awesome promise, for the natural human urge to engage in intellectual activity.[5] In addition, as this paper also attempts

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[1] Wilson (1998) p. 45.

[2] Id. p. 209.

[3] Id. states: "The more forbidding the task, the greater the prize for those who dare to undertake it." With respect to bets against nature, there is no empirical basis for this statement. Consider, for example, the task of jumping off a cliff. It seems to me that the wager is that, for realizing good (the prize), it is worth expending resources, such as material, time, and attention (what is bet), based on the gamble that faith in science is justified (the risk).

[4] Marr (1982) and Glimcher (2003) describe this approach. This approach seems compatible with the network approach of Fuster (2003), where module is understood as a function, not a particular area of the brain.

[5] Nietzsche (1888), pp 47-8, argues that too much reading ruins scholars. On the other hand, many scholars today seem much more interested in writing than in reading. Neither reading nor writing is necessarily related to intellectual activity.

to show, these fields can serve the public here today by contributing to better public policy, greater job opportunities, and more valuable commercial communication services.

A. Computational Theory

Making sense of presence, as used in this paper, means making sense of presence of another like yourself right now. This problem is similar to mind-reading or "theory of mind," but it does not distinguish mind from body or cognition from perception-sensation. Making sense is a function produced using all the physical capabilities of the class of subjects under consideration.[1] Making sense of presence of another encompasses the other's physical state and environment, all of which are not necessarily physically accessible or real. Thus making sense is taken to be the same type of computation whether directed to a person in physical proximity, a person on the other end of a telephone, or a character in an engaging novel. The qualification "like oneself" indicates that self-knowledge can provide knowledge of the other. Like organisms make sense in like ways, from the configuration of sensory organs to the structure of the brain. The qualification of time, "right now," gives material structure to states of the other and the world. The complexity of the organism and its historical interaction with the environment shape the computation. Making sense of presence of another human being is a much different scale problem than making sense of the presence of a screwdriver.

Categorization is a pervasive and relatively simply computation. Social, sexually reproducing organisms generally recognize others of their species by kinship, sex, and sexual maturity. Such recognition concerns a small set of types pervasively inscribed in organisms.[2] In many circumstances the necessary computation can be efficiently performed with a simple, state-independent sensory rule. For example, newly born chicks categorize as their "mother" the first object that they see moving. In scientifically designed experiments, chicks have been induced to put in this category a human being, a red cube, and a box decorated with randomly positioned dead hen parts.[3] The chicks' mechanism works as long as the right object triggers the imprint, and that object continues to generate the signals associated with the imprint. More generally, the current environment and the lived history of an organism do not strongly affect its (genetic) kinship, sex, or sexual maturity. Thus recognizing these characteristics is a relatively simple computational problem.[4]

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[1] Hayak (1952), an important early work by an economist, challenges the distinction between sensation and cognition. Vilarroya (2001) argues that the distinction between sensation and perception is philosophical baggage that has no place in contemporary neuroscience, and that cognition and perception are closely related. Fuster (2003) presents a similar understanding. "Making sense" obliterates the distinction between sensation, perception, and cognition. The division of making sense considered here, "making sense of another like oneself right now," describes different boundaries for analysis.

[2] Even bacteria have means for recognizing each other and forming groups. See Park et. al. (2003).

[3] Hauser (2000) p. 93; Johnson and Morton (1991) pp. 45-70, esp. Fig. 3.8, p. 61. Wilson (1971), pp. 272-7, tentatively suggests that social insects recognize nestmates through colony-specific body odors.

[4] The expression of these characteristics depends on the social and physical environment and particular lived history. These factors thus matter for the practice of categorization, which among humans can be quite complex. Individuals can effectively act as sisters, brothers, mothers, and fathers to non-genetically related others. Paternity laws imposing DNA testing on male human beings can effectively link genetic and legal paternity to a consensual sex act done outside of a planned or legally possible personal relation. Some organisms in certain circumstances can hide their sex or undergo sex change operations. Nutritional history can affect the age of maturity.

Recognizing characters in social life and constructed narratives requires much more computational resources. A character is a collection of representations with associative and predictive power.[1] Characterizing another involves applying pattern-matching algorithms across the historical and circumstantial span of known behavior of the other and like organisms. The set of possible characters is defined by the patterns of past experience and the way organisms analyze that experience. Social animals with relatively large brains seem capable of characterizing others as friends or foes. Humans tend to use this categorization to lower the cost of making sense of others and to support rapid reaction, but they are also capable of much more intricate characterization. Characterization is a fundamental aspect of storytelling, both fiction and nonfiction. While some character stability is essential to the usefulness of characterization, characters can and often do change over time. The complexity of characterization for a given organism depends on the physical capabilities of its brain, the scope of its experiences, and the richness of stories available to it.

Both recognition of another like oneself and the distinction between self and other are assumed in making sense of presence. Interactive knowledge, which is knowledge of the type "I know that you know that I know…," expresses both separation of subjects and unity in knowing.[2] Game theory typically assumes that each player has some interactive knowledge of an infinite order. In theory, such knowledge is impossible to establish without perfect communication. In reality, as long as organisms, their worlds, and their individual histories cannot be perfectly replicated, each organism is unique, and no organism can know with certainty what another knows. Nonetheless, the success of game theory in explaining organisms' behavior indicates that organisms behave as if they have some high-order interactive knowledge of each other.[3] Making sense of presence of another like oneself depends on a prior, unspecified mechanism that establishes some interactive knowledge that the self and the other both have.

Making sense of presence among humans is a different computational problem from characterization. Consider an interrogator who exchanges text messages with a man and a woman, both of whom the interrogator has never met.[4] Text messaging is the only possible means of

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[1] For an insightful discussion of character in narrative, see Peradotto (2002). While social insects can recognize others by caste (Wilson (1971) pp. 277-8), even characters in popular television programs are far more developed than this.

[2] For a review of relevant literature in game theory and computer science, see Koessler (2000).

[3] Glimcher (2003) Chs. 11, 12.

[4] This example is inspired by Turing (1950). While the "Turing Test" is rather famous, Turing's life probably offers much more important teaching about respecting human beings and their struggles to be who they truly are. Turing made key contributions to the British war effort in World War II. In 1952, convicted of having had a sexual relationship with a man, he was given the choice of prison or drugs to obliterate his sexual desire. He chose the latter,

communication between the interrogator and the other two persons.[1] The woman attempts to convince the interrogator that she is a man, while the man tries to communicate to the interrogator that he is a man. The interrogator, who is a woman, must correctly identify the man. The female interrogator and the female and male respondents each recognize the others to be persons like themselves, with the same awareness of sex difference and the same free will. While most animals are quite proficient at distinguishing between males and females, recognizing sex solely through text messages among highly intelligent animals with an incentive for strategic manipulation is a much different problem. Moreover, mutual recognition means that characterizations of males and females are of no use in this strategic interaction. Successful recognition depends not on a general process of characterization but on some mistake or some personal protrusion of awareness. This is not the same as characterization, because only one category of persons is recognized and only one character represented.

Experimental evidence indicates that in some circumstances a person's recognition of another like herself creates distinctive brain activity. A study examined brain images of humans while they played a simple, standard two-person game called "trust and reciprocity."[2] Among humans who played a non-cooperative strategy, their brain images while playing against another human did not differ from their brain images while playing against a computer program. However, subjects who played cooperative strategies showed different brain activity while playing against a human, compared to playing against a computer program. When playing against the human, subjects activated their prefrontal cortex. This pattern of brain activity is consistent with brain engagement in making sense of the other.

Making sense of presence is a neurological computation that does not reach a decision but maintains a state of being. It is attunement to potential differences between sense of the other and representations of him. It is necessarily linked to the contingencies of a particular time and particular circumstances. It involves mobilizing networks of sense without particular indicators of relevance. Making sense of presence is a complex activity, and many species may not be capable of it:

> *All animals have a mental tool for recognizing others, distinguishing males from females, young from old, and kin from non-kin. Only a small number of animal species have evolved a self-recognition tool, one that enables them to distinguish self from all other entities in the world. Of this smaller subset of animals, our own species may be on its own in having the capacity to understand what it's like to have a sense of self, to have unique and personal mental states and emotional experiences.*[3]

"Unique and personal mental states" are difficult to verify scientifically, and the brain functioning of other species, particularly primates closely related to human beings, is a matter of considerable uncertainty and controversy. An important insight is that sense of another like oneself is

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and in 1954 committed suicide. Hodges (1983) provides a biography of Turing, with an associated website http://www.turing.org.uk/turing/index.html

[1] Note that the way that respondents process texts, and not just the meaning of well-formed orthographic messages, can characterize the respondents. See links and discussion at http://slashdot.org/articles/03/09/28/1328220.shtml?tid=134

[2] McCabe et. al. (2001).

[3] Hauser (2000) p. 113.

intimately related to sense of self.[1] Making sense of presence of another like oneself is an activity more accessible to scientific study than the sense of self, and it leads to better understanding of that latter state of being.

B. Inputs and Algorithms

An organism's sense of the world is the particular sense of its body. Human beings see with their eyes using a narrow band of electromagnetic energy that humans call the visible spectrum. Other animals see using energy in spectrum bands invisible to the unaided human eye. For example, butterflies see in ultraviolet frequencies, while pit viper snakes see in infrared frequencies. A human without the aid of instruments cannot hear what a cat hears, cannot detect the electric fields that a shark senses, and cannot feel the magnetic fields that some migratory birds use for navigation. A human in the presence of other species is alone in her own particular sense of the world. Selection for fitness among finite bodies ensures that no species naturally has a complete sense of the world. That has been too much knowledge for any organism to bear.

Efficient sensory processing integrates sense throughout all levels of making sense. A real object naturally has a regular collection of physical properties. When you smell, hear, and see a dog, you sense a dog. Since the nose, ears, and eyes are spatially separated, distinctively shaped parts of the body, you might imagine sensory stimuli flowing forward from the dog through these different organs and associated neural pathways to converge on a representation of a dog somewhere in your brain. The specialization of sensory modes gives an organism different "views" of the world with different value for pursuing different goals. Different weightings of information provided in different sensory modes are optimal for making different decisions.[2] However, stability over time in properties of real objects creates high redundancy in information provided in different sensory modes. Moreover, organisms continually process a massive amount of sensory information.[3] Decentralizing making sense is an efficient response to high sensory information load.

From the beginning, integration of sight and sound contributed to algorithms for making sense of presence in the absence of physical proximity. Sight can provide signs of presence without physical proximity of another. The sight of a "home" – characteristic objects and arrangements – could function in this way, as could sight of bodily wastes and physical evidence of distinctive behaviors.[4] The development of language and linguistic narrative might help organisms to respond more effectively to such signs. Because language and narrative increase sensuous capacity, they also enable sights of signs to more effectively make sense of presence. Sounds, in contrast to sights, dissipate rapidly. Sound could be used to convey physical presence when darkness or obstacles obstruct sight. These situations probably were more frequent and more relevant to inclusive fitness than being able to see another but not interact vocally. Vocal interaction in the absence of sight might be more effective with the development of the capacity

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[1] This insight is well-recognized in African culture. A traditional Zulu maxim is *umuntu ngumuntu ngabantu* ("a person is a person through other persons") and a prominent African value is ubuntu (personal relatedness). See Louw (1997).

[2] Massaro (1999).

[3] Fuster (2003) pp. 84-7.

[4] Smell could also function as a sign in this way. However, genes associated with smell have deteriorated much faster in humans than in other primates. See Gilad et al. (2003). This suggests that sight, rather than smell, has historically been the more important basis for signs in humans.

to create within the living body the missing sensory modes, e.g. an image of the person crying out.

Making sense of another like oneself has a close evolutionary connection to muscular movements. Relationships among non-human primates are primarily maintained through grooming, i.e. manipulating and cleaning another's hair. Grooming brings primates in close physical proximity to each other. This enables relatively low cost sense of the other across the full range of sensory modes. Grooming adds structured physical interaction, similar to language, to physical proximity. Grooming, like social telephone conversations among humans, might be understood as providing a valued good, sense of presence. The relationships maintained through grooming contribute to effective group functioning. However, the cost of maintaining relationships through grooming increases with increasing group size. In circumstances of selective pressure for large primate group sizes, human verbal language may have evolved as a means to substitute brain activity and sound production for the muscular movements associated with grooming.[1]

Gestures alone can provide the full expressive capabilities of human language. Persons who are deaf from birth can quickly learn to communicate with gestures in a way not linguistically inferior to speaking French. For more than two-thirds of human history, all humans may have used languages of gesture rather than spoken languages.[2] As one scholar explains:

> *One of the challenges in piecing together an understanding of how our own species evolved is to explain the gap between the emergence of* Homo sapiens *170,000 years ago and the appearance a mere 50,000 years ago of that dominating, technologically sophisticated cohort that eventually populated the globe. Clearly, these people had something going for them, and there is no evidence that the secret of their success lay in their biology. Nor is it likely that they suddenly invented* language. *What they had done, I think, was to eventually rid language of the necessity to use gesture, with enormous consequences for manufacture, art, ritual, and culture generally.*[3]

Accounts of the evolution of language are notoriously difficult to test scientifically. Even if considered for this reason to be myths, these accounts have significant stylistic characteristics of scientific discourse.[4] For the purposes of this paper, stories about grooming and gesture in the evolution of language explain that making sense of presence through language is not just a mat-

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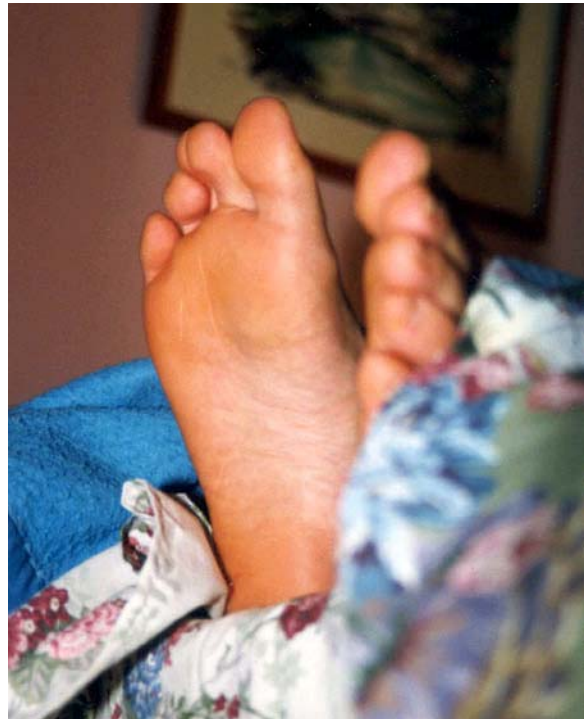
[1] Rubin Dunbar's work provides the basis for this paragraph. See Dunbar (1993) and Dunbar (1996).
[2] Corballis (2002) pp. 211.
[3] Id.
[4] Scientific discourse does not necessarily imply dull reading. Both Dunbar (1996) and Corballis (2002) are fun to read.

ter of the meeting of minds. Movements of the body can be highly expressive, and they are probably closely related to the evolution of human linguistic capabilities.

Written language's great value to civilizations and persons has tended to obscure the high cost of making sense with it. A shared, conventional understanding of relationships between sights (marks) and sounds (phonemes or spoken words) defines a written language. Written words do not themselves make any sounds, and the marks that make up written language are not usually themselves interesting or stimulating sights. All animals other than human beings almost surely engage in little activity similar to writing, i.e. selecting and marking an impersonal array of signs on a moveable object.[1] Based on the best currently available evidence and analysis, humans developed their first written language about 5,000 years ago, while anatomically modern human beings first appeared in Africa much, much early – about 150,000 to 200,000 years ago. Unlike learning to converse verbally, humans generally need to be taught formally to read and write. Moreover, human beings today, even in countries with relatively high educational investments per person, spend relatively little time reading and writing.[2] These facts suggest that making sense of written language requires algorithms that have relatively high bodily demands.[3]

C. Properties of a Living Body

In a living body, different sensory modes interact at an early level of sense to make sense consistent with past experience. The sight of lip movements associated with a syllable shifts toward this syllable human subjects' sense of a coincident sound of a different syllable.[4] Where moving lips are seen shifts toward this location the sense of the location of verbal sound.[5] In both cases, human sense acts in effect to recreate the typical multi-modal sense of a person talking. Seeing lip movements characteristic of speech also activates the auditory cortex of normal hearing humans even in the absence of speech sounds.[6] Persons are not just capable of hearing what they want to hear and seeing what they want to see. Persons hear what they usually hear, very closely to their ear, even when they just see.

Cross-modal sensory interactions can produce an interpretable change in sense in circumstances that do not correspond directly to typical experience. Consider this experimental set-up: on a flat display screen, two identical disks, starting from opposite sides on the screen, move past each other at constant speed along a common line.[7] If a distinct sound is presented at that time that the disks pass through each other, most human subjects sense an interruption in the motion of the disks (a "bounce"). In the absence of such stimulus, most subjects sense continuous streaming of the disks through each other and hear nothing. A discontinuity in motion is a char-

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[1] Some animals mark their territory, e.g. pissing on a fire hydrant. Such marks are generally drawn from a very small repertoire and directed at immobile objects. Most human writers do not understand themselves to be engaged in similar activity.

[2] See Table 3, Section V, *infra*.

[3] See Section V, *infra*, and also Kinsley (2002) and Eccl. 12:12.

[4] This is known as the McGurk effect. See McGurk and MacDonald (1976).

[5] This effect is key to the practice of ventriloquism and is known in the scientific literature as the ventriloquist effect. See Bertelson and Radeau (1981).

[6] Calvert et. al. (1997).

[7] This paragraph describes the experiment and results of Sekuler, Sekuler, and Lau (1997). Since the disks are identical, an equivalent descriptions of the visual display is that the disks move toward each other until they perfectly overlap, then they reverse direction and move apart.

acteristic sense of a collision of real objects. In this experiment, that sense is evoked only in circumstances of an additional stimulus coincident with overlapping of the moving disks.

Cross-modal sensory interactions also occur in ways not related to a common representation of events or objects. Consider subjects presented with a sequence of displays synchronized with a sequence of tones.[1] Each display consisted of four dots located at various points on a four-by-four grid. The subjects' task was to identify the target display that showed the four dots forming a diamond pattern and to indicate the position of the diamond pattern in that display.[2] The sequence of tones included one distinctive tone. The target display was equally likely to be synchronized with a distinctive tone or a non-distinctive tone, while non-target displays were always synchronized with non-distinctive tones. Subjects performed the visual processing task more successfully for the diamond displays that coincided with the distinctive tone. Note that the visual displays and the tones have no obvious common representation in typical events or objects. Moreover, the tones provide no information about the location of the diamond and do not function as a typical attentional cue.[3] The cross-modal interaction thus probably occurs at an early level of making sense.

Early levels of making sense support multi-modal aspects of sense that go well beyond mapping or recording a particular sensory mode. At the neurophysiological level, a neuron closely associated with one sensory mode can be triggered or inhibited by another aspect of sense. A particular neuron in a cat's brain responds to a wide range of auditory stimuli, but not when the cat's eyes are closed or in darkness.[4] Some neurons associated with muscular action in monkeys have similar patterns of discharge when the monkey performs an action, when the action is performed in front of the monkey, or when the monkey just sees the action, or just hears the sound characteristically associated with the action.[5] Muscular action seems to be integrated in neurons similarly to the integration of sensory modes. Doing functions neurologically like another sensory mode. Although different parts of the body clearly are specialized in their interactions with the world, they are also interact with each other at the earliest levels of making sense.

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[1] This paragraph describes the experiments and results of Vroomen and Gelder (2000).

[2] The diamond pattern consists of four dotted grid points surrounding an empty grid point. It could be located at the upper left, upper right, lower left, or lower right of the four-by-four grid.

[3] In particular, if the tone preceded the target display by 254 ms, which is within the observed range for attentional cueing in other experiments, visual processing is not enhanced.

[4] Stein and Meredith (1993) p. 108. Id. notes that in the course of one late night's work, "interrupted by the inescapable late-night giddiness suffered (enjoyed?) by those who do electrophysiological experiments":

> we finally concluded that cats must be deaf at night. This, of course, began a string of other ridiculous conclusions: blind cats are probably deaf too; and on and on.

I hope that, if persons extrapolate the information in this paper to ridiculous conclusions, they do so only for their own personal enjoyment.

[5] Kohler et. al. (2002).

Some persons have unusual consciousness of this interaction. Perhaps one out of every 25,000 persons has some stable, general, involuntary experience of cross-modal interactions, called synesthesia.[1] A novelist known for exquisite aesthetic style sensed from early childhood letters, words, and music in colors.[2] Other synesthetes taste shapes, hear colors, or experience other unusual sensory combinations. Specific inter-sensory associations are stable throughout a synesthete's life, but vary across synesthetes: a word that one sees as red, another might see as green.[3] This subjectivity of experience increases the challenge of communication. If, as a leading scholar of synesthesia suggests,[4] all persons are synesthetic at an early level of sense, it is not surprising that in most persons other aspects of sense act to suppress synesthesia.

Although a synesthete's sense of the world is unique in an unusual way, synesthesia is a part of common language. The phrases "loud colors," "dark sounds," "sweet smells," and "bitter cold" cross sensory modes, but they would not be marked as distinctive language in ordinary speech.[5] When an early nineteenth-century English poet wrote "Forlorn! the very word is like a bell," he was evoking the sound symbolism of the vowel /o/.[6] Low-pitched, round vowels like /o/ and /u/ typically suggest a dark, large referent.[7] Artful use of language can create more complex forms of synesthesia. Consider this poetic description of love:

> Her body had already started to shine,
> but it was her blaze that gave her eyes
> their depth against the touch and Lisa's soft talk.
> And it was the eyes that sometimes flared
> against the words. Lisa said she was wild
> because she was young. And bored, too,
> when she couldn't get out, yet never bored
> the way some horses dance from side to side,
> spelling their weight, pressing their radiant,
> stalled foreheads into the walls, or the way
> some horses disappear inside, having
> drawn and redrawn circles. The barn was
> full of the noise and silence of horses.
> And filled with Lisa's voice in counter-
> point: and Lisa's horse's stillness –
> like love or what love's moment's stillness
> really is, hands-high, and restless.[8]

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[1] Cytowic (1995) ¶ 1.2. Among synesthetes (persons who experience synesthesia) women and non-right-handers predominate. Id. ¶2.6-2.7,

[2] For additional details on Vladimir Nabokov's synesthesia, see id. ¶ 2.4.

[3] The Russian composers Alexander Scriabin and Nikolai Rimsky-Korsakov disagreed over the color of musical notes and keys. Id. ¶ 5.1-5.2.

[4] Id. ¶ 5.6, 10.24.

[5] Marks (1978) pp. 211-2.

[6] John Keats, "Ode to a Nightingale," l. 71, available at http://www.bartleby.com/101/624.html

[7] Marks (1978) pp. 199-203 provides a detailed discussion of sound symbolism.

[8] Stanley Plumly, "Piano," (excerpt), poem and author recording available at
http://www.theatlantic.com/unbound/poetry/antholog/plumly/piano.htm

The love between Lisa and her horse also evokes the sense of love between human beings. Most human beings recognize each other to be of the same species and of a different species from horses. Yet the sense of love in this poem overwhelms the difference in species.

Highlighting this poetic achievement, a recent experiment indicates that categorization can occur at early levels of sense. Monkeys were trained to categorize images as dogs or cats. Neurons in these monkeys' brains consistently categorized blends of images of dogs and cats, as produced by morphing software, through to 60%/40% blends.[1] Extensive processing of sense typically produces more gradual category boundaries. Moreover, category signals appeared very close in time to the first neural responses to the images. This evidence indicates that monkeys implement learned categorization at an early level of making sense. Humans undoubtedly have a similar capability.[2]

The science of living bodies, which is advancing rapidly, indicates that a living body makes sense with all its historical experience and up to its physical boundaries. A leading neuroscientist, extending the earlier work of a leading economist, states:

> every percept has two components intertwined, the sensory-induced re-cognition *of a category of cognitive information in memory and the categorization of new sensory impressions in the light of that retrieved memory. Perception can thus be viewed as the interpretation of new experiences based on assumptions from prior experience –in other words, the continuous testing by the senses of educated hypotheses about the world around us.*[3]

This active shaping of sensory experience is not just a way of processing external stimuli. Thinking of an action involves a pattern of stimulation of motor neurons closely related to seeing the action or performing the action.[4] Mental imagery is associated with activity in sensory neurons in the absence of external stimuli.[5] Sense cannot be jacked directly into a mind that is hidden in some corner of the brain.[6] The whole living historical body makes sense.

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[1] This paragraph describes the experiments and results of Freedman et. al. (2001).

[2] Unsystematic evidence from some human experience in the U.S. indicates that some humans implement categorization into donkeys and elephants at early levels of sense, much earlier than would allow for any significant cognitive activity. Ölvecky, Baccus and Meister (2003) show that cells in eyes can rapidly indicate moving objects and segregate multiple moving objects.

[3] Fuster (2003) p. 84-5, which references Hayek (1952).

[4] Rizzolatti, Fogassi and Gallese (2001) esp. p. 668. On animals' behavior with respect to imitation, see Hauser (2000) pp. 134.

[5] Frith and Dolan (1997). McCann (2002) reviews work indicating that, in the absence of movement, conscious brain effort can increase muscular strength

[6] William Gibson's novel *Neuromancer* popularized this metaphor, which was also taken up in the film *The Matrix*. Bartle (1999) provides an example of its influence on leading virtual world designers.

II. A Masterpiece of Sensuous Communication: The Hamzanama of Akbar

An artifact produced in the royal atelier of the Mughal emperor Akbar, the Hamzanama of Akbar originally included 1400 huge folios. The folios were arranged in 14 volumes, each kept in a large box. On one side of a folio, within a large, gold-flecked and color-toned paper frame, typically was a colorful painting about 69 centimeters long and 54 centimeters wide (about 27 by 21 inches). The painting was done on cotton fabric that formed a main support for the heavy, multi-layer folio. The other side of the folio was usually a bordered rectangle framing 19 lines of Arabic script on gold-flecked paper. Today the known remains of the Hamzanama of Akbar consist of about 170 folios, spread out among art collections around the world.[1] Even for a museum visitor with little understanding of the work, the painting on just one folio is apt to be enchanting; 68 Hamzanama folios, which were brought together for a recent exhibition, make for a tremendously impressive array of colors and forms.[2]

The Hamzanama of Akbar exemplifies objective sensuous choices that support diverse, subjective senses of presence. Akbar sought unconventional truth as an energetic ruler engaged in a wide range of activities in a culturally and religiously diverse empire. By Akbar's time, the adventures of Hamza, a romance that never took a canonical form, had attracted the interest of diverse persons across the Islamic world for at least five hundred years. In directing the creation of the Hamzanama, Akbar invested greatly in enhancing the sensuousness of the adventures of Hamza. In providing complex, loosely organized paintings and open, wide-ranging verbal resources, the Hamzanama enlarged and enriched the possibilities for making sense of presence in a performance of the adventures of Hamza. The Hamzanama testifies to the importance of personal activity and circumstances, independent of narrative and information-transfer, for making sense of presence.

A. Akbar and his Culture

Akbar, a Muslim conqueror, built a vast, rich empire in south Asia about 450 years ago. Akbar's military victories brought him control over an area spanning parts of present-day Afghanistan and Pakistan, south through the Deccan of the Indian peninsula, and east through all of Bengal. He established capital cities in Agra and Fatehpur Sikri (north-central India) and Lahore (Pakistan). Akbar excelled at governing as well as conquering. When he died his empire was collecting more than sixty-five times the revenue of his English contemporary, Queen Elizabeth I.[3] Aspects of his administrative system were incorporated into British colonial rule and remain in today's democratic India.

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[1] Owen (2002) documents these details. On the storage of the folios, see Seyller (2002) pp. 35, 42.

[2] I had the good fortune of seeing this exhibition at the Sackler Gallery of the Smithsonian Institute, Washington, D.C., in autumn, 2002.

[3] Burke (1989) pp. 214-15.
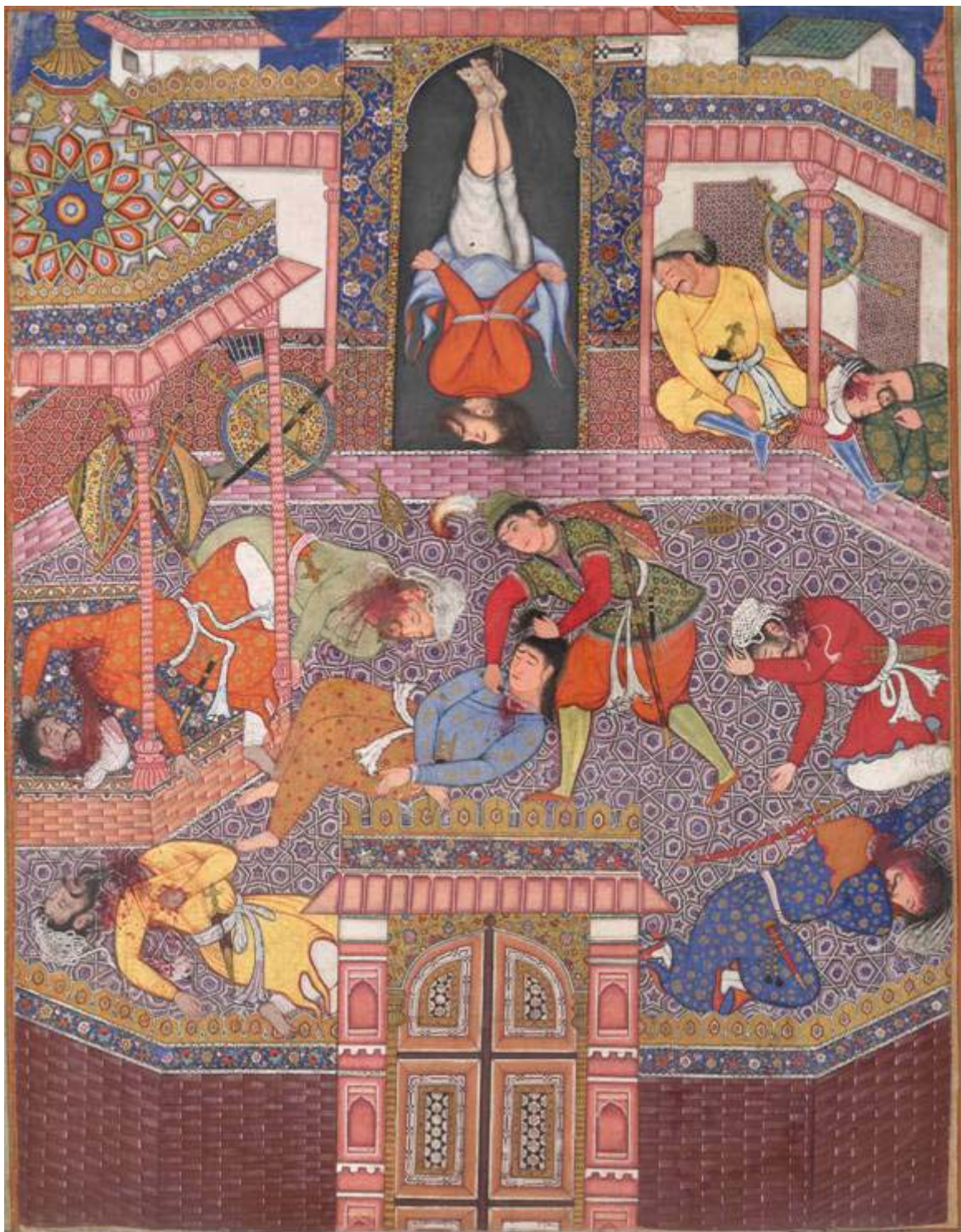
Akbar's empire was not only great in size, wealth, and administrative organization, but also in humanistic ideals and practices. Akbar, a descendent of the Mongols who invaded south and western Eurasia, knew intimately the Islamic knowledge and practices that had been a key basis for civilization in much of the world for almost a millennium. Akbar supported religious freedom for his subjects, the majority of whom were Hindu. Hindus could build their own temples and organize their own public worship, Hindus had important positions in Akbar's government, and Hindu artists and Hindu culture contributed significantly to major projects that Akbar sponsored. Akbar's court also incorporated considerable Persian culture, and Persian was the language used in the administration of government. Akbar and leading figures in his empire also explored and learned from the culture of the Ottoman Empire and the culture of the kingdoms of Central Asia, Western Europe, and China.

Akbar's correspondence with European leaders of his time shows how much his mentality differed from theirs. King Philip II of Spain vigorously pursued a hundred-year old Spanish policy of expelling, burning, or forcibly converting to Catholicism Jews, Muslims, and non-Catholic Christians. To Philip II in 1582 G.C., Akbar explained:[1]

> As most men are fettered by bonds of tradition, and by imitating the ways followed by their fathers, ancestors, relatives and acquaintances, everyone continues, without investigating the arguments and reasons, to follow the religion in which he was born and educated, thus excluding himself from the possibility of ascertaining the truth, which is the noblest aim of the human intellect. Therefore we associate at convenient seasons with learned men of all religions, thus deriving profit from their exquisite discourses and exalted aspirations.[2]

Akbar requested that Jesuit priests come to his court so that he could learn from them. Pope Gregory XIII had little respect for these and others of Akbar's beliefs. About two months before Akbar wrote the above words to Philip II, Pope Gregory wrote to Emperor Akbar, beginning thus:

> May the Merciful God, who deigned to inspire you to listen to the teaching of the evangelical doctrine, transfer you as soon as possible from darkness to light.[3]

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[1] G.C. indicates here a Gregorian calendar date. The Gregorian calendar is the most commonly used calendar in the Americas and in most parts of Europe. In different places, among difference groups, and for different purposes, different calendars are commonly used. For a technical discussion of various calendars, see Doggett (1992). All subsequent dates *infra*. are G.C. unless otherwise noted.

[2] This letter, dated "in the month Rabi'u'l-awal, in the year 990" (month starting March 26, 1582 G.C), was addressed to "European scholars". The text of the letter makes clear that it is directed to the European ruler of Goa. Rehatsek (1887) conjectures that the person who addressed Akbar's letter may have been uncertain whether Spain or Portugal would be ruling Goa when the letter reached there. Goa was part of Philip II's kingdom in 1582. The quotation is a translation from the original Persian, as provided *id*., p. 137.

[3] Correia-Afonso (1980), p. 119, as translated from the Latin original. This letter is dated 18 February 1582. This attitude and manner of communication contrasts sharply with that of Pope John Paul II, the current Roman Catholic pontiff. For example, on August, 19, 1985, Pope John Paul II gave a speech in person in French to about 80,000 young persons in Casablanca Stadium in Morocco. He noted, "Christians and Muslims have many things in common, as believers and as human beings." He expressed respect for the Muslim spiritual tradition and stated that God calls all persons to obey God's will "in a free consent of mind and of heart." He also acknowledged significant differences between Islam and Christianity, and concluded:

> I believe that today, God invites us to change our old practices. We must respect each other, and we must stimulate each other in good works on the path of God.

Footnote continued on next page.

After then pointing out that Akbar's whole earthly kingdom was not worth the salvation of his soul, the Pope noted:

> *Life is short and human condition uncertain. See that you do not neglect your own salvation or appear to fail to the grace of God that calls you. Meanwhile, do not brush aside this thought, and continue listening, as you did heretofore, to the aforesaid priests...*[1]

A year later, to the Jesuit Provincial in Goa, Akbar wrote about allowing a Jesuit priest to leave his court:

> *I have much love for the Father [Father Rudolf Acquaviva, a Jesuit priest on the first Jesuit mission to Akbar]; and, considering that he is wise and versed in the laws, I desire to have him every hour in conversation with me, and for this reason I refused him the permission. But as Your Paternity asked it of me by letter several times, I did so and gave him permission. And as my intention is that our friendship should go on increasing more day by day, it behooves your Paternity to labour on your side towards preserving it, by sending Father Rudolf back to me with some other Fathers; and I would like this to be with the least possible delay, for I desire that the Fathers of this Order be with me, because I am delighted with them.*[2]

Akbar delighted in conversation and friendship across the differences of Islam and Christianity. European leaders, in contrast, were not interested in important goods that Akbar and the people in his empire showed them.

About Akbar's time and in rather less challenging circumstances, Europeans were massacring each other in a way that the European tradition of reason still struggles to understand. In Paris in 1572, beginning on St. Bartholomew's Day and continuing for a few days, Catholic mobs brutally killed Huguenots – their neighbors, Christians like them, but Protestants. The madness subsequently spread to the countryside, where some Catholics eagerly found reason to kill their Huguenot neighbors. In the Thirty Years War, 1618-1648, persons in various religious and political groups – Catholic, Lutheran, Calvinist – fought battles across the German countryside and brought death and destruction in a way that cannot be easily summarized in terms of parties, purposes, or results.

Persons in the European intellectual tradition who describe and explain these events continue to differ about facts, causes, and effects. One current, popular encyclopedia indicates that 67,000 persons were killed in provincial violence following the St. Bartholomew's Day massacre, while a recent scholarly book, drawing on an earlier peer-reviewed article, estimates the number at

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> *With me, you know the reward of spiritual values. Ideologies and slogans cannot satisfy you nor can they solve the problems of your life. Only spiritual and moral values can do it, and they have God at their foundation.*
>
> *Dear young people, I wish that you may be able to help in building a world where God may have first place in order to aid and to save mankind. On this path, you are assured, of the esteem and the collaboration of your Catholic brothers and sisters whom I represent among you this evening.*

Speech published in L'Osservatore Romano [English edition], 16 Sept. 1985, pp. 6-8.

[1] Correia-Afonso (1980), p. 119, as translated from the Latin original.

[2] Correia-Afonso (1980), p. 121, as translated from a contemporary Portugese translation of the original Persian. The likely date of the letter is 24 Feb. 1583 (*id.*, p. 122, ft. 4). Akbar could not read or write. The body of this letter is short and in a colloquial style. It concludes with this sentence: "And to the Father I said many things by word of mouth, for him to say there to Your Paternity, which are to be well-considered." This letter probably records more literally Akbar's voice than the earlier letter to Philip II.

3,000.[1] An important on-line encyclopedia states that two-thirds of Germany's population perished in the Thirty Years War (1618-1648), while a recent compilation of global population statistics indicates that Germany's population in 1700 was 18% less than it would have been if it had followed population growth trends in the rest of Western Europe from 1600 to 1700.[2] For the most part, discussions of the St. Bartholomew's Day massacre and the Thirty Years' War have played counterpoint to the development of Western rationality.[3] These horrible historical events continue to resonate strongly in contemporary Western consciousness. These grave, self-inflicted wounds have strongly shaped subsequent evolution of European culture and patterns of thought.[4]

The global legacy of these wounds can be an impediment to empathetically understanding Akbar and his artists' choices. One scholar sees in Akbar a "convinced rationalist" and perceives "rational free-thinking" to be widespread among the educated elite of Akbar's empire.[5] Rational free-thinking naturally opposes superstition, bigotry, and dogma.[6] One can indeed find among the elite of Akbar's empire examples of late twentieth century Western post-modern thinking: true and false are merely subjective, and "Islam and non-Islam is the same in the free man's view."[7] From this perspective, the fight for power through ideas is more important than a shared quest for truth. Thus this summary:

> *The greatness of Akbar's age lies in the very fact that it enriched India with brilliant intellectuals and thinkers, eloquent writers, uncompromising fighters for 'the idea.'*[8]

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[1] The first estimate is from the entry for St. Bartholomew's Day in the Columbia Encyclopedia (2000). It states that an estimated 3,000 were killed in Paris, and 70,000 in all of France. The second is from Benedict (1978) p. 207, cited in Holt (1995) p. 94, which also states that about 2000 were killed in Paris.

[2] The first figure is from the "Thirty Years War overview" entry in Wikipedia (2003). The latter figure is calculated from Maddison (2001) p. 232, Table B-2, which gives the population of Germany in 1600 and 1700 as 16 million and 15 million, respectively. An art exhibit "War and Peace in Europe," sponsored by the Council of Europe in 1998 to commemorate the 350'th anniversary of the signing of the Treaty of Westphelia, states on its website, "It has been reckoned that about 40% of the population perished [in the Thirty Years War], a figure well above that given for Germany during World War Two." See Council of Europe (1998). Duplessis (1997), p. 143, states that "at least a quarter" died, while Crouzet (2001), p. 91, states that "at least 20%" died. All these totals include deaths from epidemics and famine, which undoubtedly caused most of the deaths. Upton (2001), pp. 62-3, aptly summarizes the intellectual history:

> *...there are serious estimates that range from Steinberg's assertion that there was no absolute population decline between 1600 and 1650, to assertions that two-thirds of the population was lost. ... But in one sense it does not matter whether the catastrophic image of the war is true or not. For what is indisputable is that among the elites who decided Europe's affairs it was widely believed that the war had been uniquely destructive, and it was necessary to ensure that nothing like it could happen again. It encouraged their belief that in [the] future reason, not passion, should be the basis of public policy, and that security required the maintenance of strong governments, powerful enough to control events.*

[3] To get a sense of the fissures in discussion of these events, see, for example, the well-designed web page, "Rejection of Pascal's Wager: The Wars of Religion," (http://www.geocities.com/paulntobin/war.html), the Catholic Encyclopedia's entry on the St. Bartholomew's Day massacre (http://www.newadvent.org/cathen/13333b.htm), and Chapter 3 in Holt (1995).

[4] E.g. DeLong (2001).

[5] Vanina (1996) pp. 83, 66. Being sensitive to reality, in all its richness, and avoiding bland and unself-conscious iterations of contemporary orthodox, has always been a challenge, even for learned scholars.

[6] *Id.* pp. 56, 71, 178, for example.

[7] *Id*. pp. 57, 60-1, 67.

[8] *Id.* p. 69.

Rational free-thinking seems to mean here, if it means anything at all, fighting over certain ideas, which are representations that exist independent of persons. The winning idea determines what most persons perceive to be true, which means in this account what is true. This construction of rational free-thinking foregrounds claims about the connection between representations and truth. It links pursuit of truth to war, harangues, representational struggles, and the need for boundaries in thought and discussion to prevent destruction. It is deeply connected to European history, and European wounds.

This Europeans legacy has become a legacy of the whole world. Concern about the relationship between truth and representation has become the dominant way to think about art and many other aspects of life. A recent study of the reception of European art in Asia and Latin America, 1542-1773, stated:

> it is clear that most people were impressed primarily by the lifelike qualities of European art. Even in indigenous-language texts, references to mirrors abound, and the comment is made repeatedly that European figures look as though they are breathing, moving, and occupying real space…. It seems, therefore, that above all it was the Renaissance technique of pictorial realism which gave European art appeal to the rest of the world.[1]

Akbar's empire assigned many persons and much material goods to painting. Mughal painters under Akbar were highly cultured and technically skilled. However, after several decades of interaction with Europeans and their art, one of Akbar's contemporaries and the official historian of his empire wrote:

> the European painters…have attained world-wide fame. The minuteness of detail, the general finish, the boldness of execution, etc. now observed in pictures, are incomparable; even inanimate objects look as if they had life….
>
> …painters, especially those of Europe, succeed in drawing figures expressive of the conceptions which the artist has of any of the mental states, so much so, that people may mistake a picture for a reality.[2]

This evaluation of European painting is connected to a much more general European understanding of the relationship between truth and representation. Such an evaluation is more a description of the terms of European pre-eminence than an explanation of it.

Respect for truth almost surely shaped the choices that Akbar and his artists made in producing the Hamzanama, but Akbar and his artists may not have thought about truth and representation in the way that Europeans and much of the world now do. In his letter to Philip II of Spain, Akbar referred to "the truth, which is the noblest aim of the human intellect."[3] Akbar preceded his point about the fetters of tradition with this statement:

> although we have brought the dominions of several great princes under our subjection, – the administration and amalgamation whereof engrosses our intellect, because we are bound to promote the welfare and happiness of all our subjects, – nevertheless, – Allah be praised – the purpose of all our activity, the head and front of all we do, is a desire to meet with divine approbation, and to discover that which is true.[4]

European paintings were first brought to Akbar's court in 1580. It is unlikely that they immediately transformed how Akbar and his artists understood their quest for truth. Moreover, Akbar's

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[1] Bailey (1999) p. 193.
[2] Abu'l Fazl 'Allami, The Ain-i Akbari, 1:113-4, 103, as translated from Persian and quoted in *id.*
[3] Rehatsek (1887) p. 37.
[4] *Id.* In recent decades, Western scholars who have quoted Akbar have generally not quoted this sentence.

choice to produce the Hamzanama, and most of the general artistic decisions relating to that arti-fact, were probably made about 1557.[1] Both the printing press and the battles of the Reformation in Europe were then unknown to Akbar and his court.[2] Given today the world-wide weight of European history and European wounds, the sensuous choices incorporated in the Hamzanama offer both a challenge and an opportunity to see and understand more.

Akbar relished sense of the world. When the Jesuit priests asked Akbar to put in writing the permission he gave them to build a church near his court, "he answered that this was unnecessary in a place where he resided, in as much as his presence was living writing."[3] When Akbar re-ceived volumes of the Jesuits' Bible that he had requested, "he held them in his hands and pub-licly kissed them, and placed them on his head...."[4] A Jesuit priest described Akbar's behavior in their prayer room, which was "well-arranged," meaning full of artifacts of Catholic spirituality:

> *removing his cap or turban, kneeling on the ground with great devotion, he prayed before the picture of Christ and of the Virgin, venerating thrice, once in our manner, the other in that of the Muslims and the third in the Hindu fashion, that is to say, prostrate, saying that God should be adored with every form of adoration.*[5]

Akbar had thirteen wives and kept thousands of women in the women's quarters of his palace.[6] Thus his sexual relations may have been slightly less extensive than those of Wilt Chamberlain, one of the greatest U.S. basketball players, who estimated that over his life he had sex with 20,000 women.[7] Akbar reportedly enjoyed telling stories about Hamza in the women's quarters.[8] Such storytelling sessions may have been associated with sex. More generally, Akbar enjoyed the sensuous richness of a full range of human activities:

> *The King is considered by some to be mad, because he is very dextrous in all jobs, be-cause I have even seen him making ribbons like a lace-maker, and filing, sawing, work-ing very hard; he is the whole day with deer, pigeons, cocks, birds, cages, dances, fights of wild elephants, wild buffaloes, fights among men, mock quarrels and claims, and other pastimes; he does not see a thing without trying to get a similar one, and in the end eve-rything goes through his hands.*[9]

Thus Akbar sought sense across sensory modes and in a broad range of activities.

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[1] Seyller (2002) pp. 38-40 presents new evidence and convincing argument that work on the Hamzanama began about 1557 G.C.

[2] The first printing press in India was brought to Goa by the Portuguese about Sept. 1556, and the first book was printed within a few months. Rhodes (1969) p. 11.

[3] Du Jarric (c. 1604) p. 70.

[4] Correia-Afonso (1980) p. 76.

[5] *Id.* p. 58.

[6] Burke (1989) pp. 142-44. Historically, Occidental observers have tended to be very interested in the sexual rela-tions of Oriental persons.

[7] Chamberlain (1991) p. 251. Anticipating a Western scholarly fashion of the mid and late 1990s, Chamberlain dis-cussed extensively his sexual practices. See *id.*, chapter 11.

[8] Seyller (2002) p. 36.

[9] Correia-Afonso (1980) p. 81 (letter from Jesuit Fr. Monserrate, Fatehpur Sikri, 1580). Another Jesuit priest made a similar observation that year. *Id.* p. 56.

B. The Adventures of Hamza

The Hamzanama of Akbar incorporates the adventures of Hamza. These stories have existed in oral and written literature for more than a thousand years.[1] Hamza's home is Sassanian Iran. Battles there between the forces of Islam and the infidels are an important motif of the adventures of Hamza. The battles typically include single combat among warriors sent out to represent the opposing armies that line the battlefield. Islam always wins in the end, with the fate of the infidels being either enthusiastic embrace of the true religion, forced, though sincere, conversion, or death. Typically in one part of the story Hamza travels to another world, allies with some fantastic creatures, and battles others. Another motif is sudden infatuation of a woman for a man, or a man for a woman. Cross-dressing and various forms of trickery are also common motifs. These motifs have many connections to Persian history and to other oral and written literature that was available to Akbar's court.[2]

The adventures of Hamza have remarkably indistinct temporal, geographic, and narrative boundaries.[3] Historical seeds for Hamza tales may have been the lives of Hamza b. 'Abd al-Muṭṭalib and Hamza b. 'Abd Allah. The former was born in Mecca in 567 G.C. and was the paternal uncle of the last Prophet of Islam, usually written in Islamic works as Mohammed, Peace be Upon Him. This Hamza distinguished himself as a warrior in single combat with polytheists and died fighting for Islam. The latter Hamza lived in Persia about two hundred years later. He too was an Islamic military leader. He led a Persian insurrection against the Abbasid caliph and mounted military campaigns to India and China. The first written text of the adventures of Hamza was reportedly created about 1200 years ago.[4] The adventures of Hamza, set with Hamza's home being Persia, were circulating widely in oral and written Persian in Persia about 1000 years ago. Over subsequent years, the adventures of Hamza spread in oral and written form in languages and places throughout the Is-

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[1] Accessible texts or summaries in English of works of the adventures of Hamza include Hanaway (1970), App. 5, pp. 337-49 [summary of Persian text Qeṣṣa-e Hamza, from She'ar (1968-69), described as "originally written" about the ninth century, with this text apparently at least earlier than the sixteenth century], Walker (1996) [Behçet Mahir's traditional oral performance in Turkey in 1979], Pritchett (1991) [text printed in Urdu in India in 1871 under the name of Abdullah Bilgrami], and Thackston (2002) [translation of Hamzanama texts written in Persian by or from traditional oral storytellers about 1557-72]. Stevenson (1958) provides a translation of part of a Georgian text associated with Mose Khoneli from the twelfth century. Some consider this to be a work of the adventures of Hamza. Stevenson does not.
[2] Hanaway (1970) explores these connections in detail.
[3] The facts in this and the subsequent paragraph are drawn from the introduction to Pritchett (1991), the introduction to Walker (1996), and the entry for Hamza b. 'Abd al-Muttalib in the Encyclopedia of Islam.
[4] Hanaway (1970) p. 10.

lamic world, including Sudan, Turkey, India, Malaysia, and Java.

The adventures of Hamza never acquired a canonical narrative expression. Different recensions and tellings of Hamza's adventures include different characters, different episodes, and different thematic emphases. Abstracted from time, place, storyteller, and listeners, the adventures of Hamza mean not much more than a romance about an ancient, male Islamic warrior-hero named Hamza. Yet in a coffee-house in Turkey about twenty years ago, a traditional Turkish storyteller took almost ten hours to tell the tale of Hamza.[1] He told a story with many but diffuse and jumbled connections to stories told under Hamza's name in different places over the past thousand years. His listeners would undoubtedly recognize this story if he told it again, which he could do, because he knew it well.

Akbar was familiar with the adventures of Hamza as a traditional oral performance. Akbar's court historian recorded that, after an elephant hunt in the evening in 1564, Akbar:

> having ensnared the intended prey and satisfied the cup of desire, sat upon that exalted throne, and graciously commanded those present to be seated; then for the sake of delight and pleasure he listened for some time to Darbar Khan's stories of Amir Hamza.[2]

Recent scholarship indicates that 1564 was about six years into the fifteen-year project of producing the Hamzanama.[3] Since the Hamzanama was a monumental work, use of part of it in storytelling would have been noteworthy. That the performance took place while the Hamzanama was being produced suggests that telling the adventures of Hamza was a common event. The gathering of the court and the anticipation of the effects of the storytelling also suggest familiarity with the story, as does the lack of concern for narrative closure in listening. The prelude to the storytelling – the action, risk, and success of an elephant hunt – probably informed the choice of telling the adventures of Hamza.

Akbar and his court were familiar with a wide range of literature, both oral and written. Akbar had a large imperial library with separate sections for Hindu, Persian, Greek, Kashmirian, and Arabic books. Persian books included Ferdowsi's Shahnameh epic, Sadi's Bustan and Gulistan, works by Jami, while Indian works included the Sanskrit epics the Ramayana and the Mahabharata, the Bhagavata Purana, and famous love stories and fables. There were also books on mathematics, science, Yoga, and history.[4] Akbar himself could not read, but he regularly enjoyed having books read to him.[5] Moreover, a court storyteller, Darbar Khan, was closely associated with Akbar.[6] This suggests that Akbar regularly heard recitals of traditional oral literature, which was a thriving popular art form in Persia at that time.

Akbar's investment in the adventures of Hamzanama, although materially enormous like Shah Tahmasp's earlier investment in the Shahnameh, differed greatly in sense. The adventures of Hamza are adaptable, popular stories that have successfully encompassed many different persons and places. The Shahnameh, also known as "The Book of Kings," is an Iranian national

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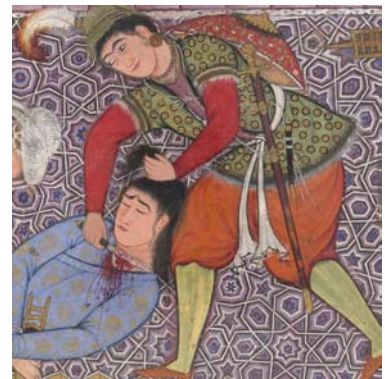
[1] Walker (1996) p. xxiv.
[2] Faridany-Akhavan (1989) pp. 15, 38, 40 ft. 16. The translation above is a composite from ib. p. 15 and p. 40, ft. 16. Faridany-Akhavan's translation recognizes that traditional oral storytelling is not a recital of a written text.
[3] Seyller (2002) pp. 38-40.
[4] Wellesz (1952) pp. 25-6.
[5] Id.
[6] Seyller (2002) p. 36.

epic. Written by Ferdowsi in Persia in the late tenth and early eleventh centuries, it has a canonical text that serves as a standard source of Iranian cultural memory and pride.[1] Shah Tahmasp ordered the production of a magnificent illustrated manuscript of the Shahnameh about thirty years before Akbar initiated work on the Hamzanama. Shah Tahmasp's Shahnameh is an artifact of Iranian national greatness.[2] Akbar's Hamzanama is much more universally personal. Understanding Akbar's investment in the adventures of Hamza requires appreciation for universal bodily values in making sense.

C. Multi-sensory Stimulation

The Hamzanama was constructed to be used as a complement to oral storytelling. The large size of the Hamzanama's paintings makes them visually interesting at much greater distance than usual manuscript paintings. While Persian illustrated manuscripts typically integrate text into the paintings, most Hamzanama folios follow an Indian manuscript style of having a painting on one side of a folio and text on the other side.[3] However, unlike the folios that in a typical Indian illustrated manuscript, almost every Hamzanama folio has a painting on one side. The Hamzanama is organized episodically, with a painting on the front of one folio corresponding to text on the back of another.[4] Each text page typically includes a formal opening, so that a text page and the corresponding painting define an episodic structure for the story as a whole. Available evidence suggests that the folios were not bound, but kept in boxes. An assistant could display the painting on one folio while the storyteller, assisted by the text on another folio, narrated an episode.[5] The audience for a story told with the Hamzanama might never see any text. The paintings and texts were created and combined to be tools for oral storytelling.

The Hamzanama stimulates sense across sensory modes and at an early level of making sense. As told in Akbar's court, the adventures of Hamza drew upon the oral tradition of Persian epics. A study of this tradition noted:

> *Persian epic literature is a literature of action. The emphasis is not on human character development or accidents of fate, but on human action. The characters are generally preparing to fight, actually fighting, or celebrating after a fight. Whatever they are doing, action is the focus of the story.*[6]

A focus on action connects senses, such as sight and sound: "The lines of epic poetry should ring like a sword on a shield, or a hammer on an anvil, not like a carillon in a bell tower."[7]

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[1] Western scholarship is beginning to appreciate more the Shahnameh's literary merit. See Davidson (1994) and Davis (1992).

[2] An early section of the Shahnameh of Shah Tahmasp includes 256 paintings – vastly more than in most royal illustrated manuscripts. These paintings are considered to be among the greatest masterpieces of Persian paintings. Dickson and Welch (1981) reproduces all the paintings in the Shahnameh of Shah Tahmasp, which is also known as the Houghton Shahnameh. The manuscript was subsequently broken up, and individual paintings from it were sold separately.

[3] A collection of illustrated Shahnameh manuscripts, dating from 1544 to 1674, is available at http://etc.princeton.edu:8888/shahnama/start.epl. Most of the pages with paintings in these Persian manuscripts also include text. On Indian illustrated manuscripts compared to the Hamzanama, see Losty (1982) p. 86.

[4] Faridany-Akhavan (1989) seems to be the first scholar to have recognized this correspondence. Recognizing it was a challenge because Hanzamana paintings relate to text much more loosely than most illustrations.

[5] Seyller (2002) pp. 41-2.

[6] Hanaway (1970) p. 219.

[7] Yarshater (1988) p. 103-4.

Episodes in the Hamzanama are about this kind of action. Consider this text from the Hamzanama:

> *While they [Hamza (also called the Amir) and Umar] were walking, they came across the Jahannuma Tower. By chance, Ghazanfar was atop the tower drinking wine with a group of ill-starred infidels. When his gaze fell upon the Amir and Umar, he cursed them loudly. Umar cursed him in return, but the Amir said, "If you are a man, come down and let us grapple to see who will win a match of courage."* [1]

The corresponding Hamzanama painting shows in the upper left Ghazanfar atop a tower.[2] He holds a mace in one hand and with the other points to Hamza, who is sitting confidently on a regally dressed horse in the lower right of the painting. Ghazanfar appears to have one leg over the rampart of the tower. His leg stretches toward Hamza as if Ghazanfar could stride down through the air to confront him. Even these two dramatic forms don't stand out sharply, because the whole painting is "abuzz with giddy agitation" of persons, architectural forms, trees, water, and

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[1] Thackston (2002), trans. for cat. 38, p. 293.
[2] Seyller (2002) cat. 38.

rocks.[1] The experience of this episode of the Hamzanama was probably like that which attracts a wide audience to professional wrestling today.[2]

The description of action is a well-developed art in traditional Persian epic storytelling. The story of Ghazanfar and Hamza evolves into a well-recognized pattern of action:

> *[Ghazanfar] immediately went down from the tower, and as he approached the Sahid-Qiran [Amir Hamza] he aimed a blow with his sword at the Amir's head. As the sword was coming down the Amir stretched out his champion's hand and tightened his grip on the pommel of his sword, and as he attacked he drew his sword and said, "Take this!" Ghazanfar raised his shield over his head. The Amir reached under the shield, grabbed his collar, and pulled him down to his knees. With his other hand the Amir reached for the dagger in his belt, lifted Ghazanfar from the ground, lifted him up, and then hurled him to the ground so hard that his vile body lay flat. The Amir then tied his hands and neck. Still Ghazanfar refused to give up and cursed repeatedly.[3]*
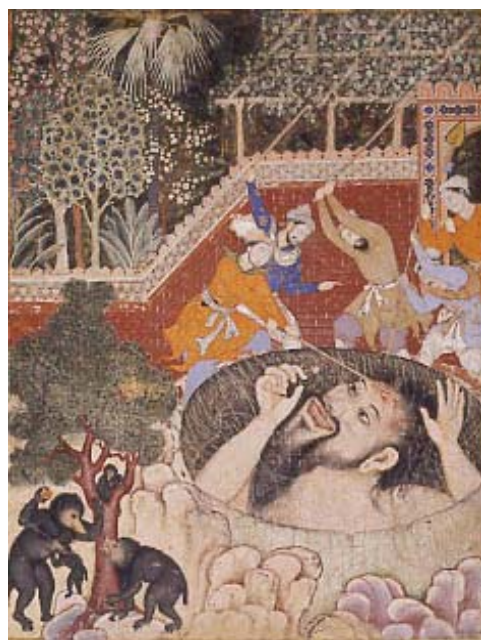
This type of action offers to the storyteller an opportunity to engage in *naqqali*, a distinctive storytelling style. In a section of *naqqali*,

> *[the storyteller's] voice may change in pitch and volume. His phrases become shorter and are spoken more quickly, and his gestures more tense and expressive. If the passage is rhythmical...he may emphasize the rhythm with short chops of his hand or motions of his head, signalling climaxes with loud clapping of his hands.[4]*

When Ghazanfar hits the ground in the above text, one can easily make sense of a thump. In a storytelling performance, it might even have been made with a drum or other musical instruments.[5] The Hamzanama thus supports artfully created sensuousness.

In another episode, gardeners captured in their garden Zumurrud Shah, a gigantic enemy of Hamza. The related painting shows Zummurrud Shah's naked upper torso placed within a large, black, hairy circle.[6] He is usually depicted in a regal red costume and wearing gold earrings.[7] The painting as a whole has a brownish tone, with almost none of the bright reds and whites seen in other Hamzanama paintings. The next events have little narrative significance, but they do make sense:

> *They carried that ass away and put him in chains in a barn. That evening the cows came home, and Zumurrud Shah was lying unconscious when an*

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[1] Seyller (2002), disc. of cat. 38, p. 128.

[2] See, for example, the fan pages at http://www.wwf4ever.de/ and http://www.geocities.com/Hollywood/Palace/6282/RAW.html

[3] Thackston (2002), trans. for cat. 38, p. 294.

[4] Hanaway (1970) pp. 282-6.

[5] Yarshater (1988) p. 9.

[6] Seyller (2002) cat. 28.

[7] Id. cat. 33, 39, 53, 57, and 78. In cat. 45, with no earrings, no beard, and dangling clothes, Zummurrud Shah has a babyish character much different from all the other depictions of him in this catalogue.

enraged cow struck its horns in the ground and mooed. By divine destiny the horn went into Zumurrud Shah's nose and tore it. Zummurrud Shah jumped up, and when he saw his condition he became upset. As he was weeping over his miserable state and wretched fate, a cow shat on him. Rubbing his broken head, he fell under the cows' legs.[1]

The details of the cow mooing and Zumurrud Shah jumping up are opportunities for sensuous theatricality. The color tone and visual design of the painting also evoke a smell distinctively associated with the circumstances of these events.

D. Freedom of Sense from Narrative

The sense of the Hamzanama is not closely related to a given narrative. The initial artistic director of the Hamzanama was Mir Sayyid Ali, an Iranian-born artist who had been a junior member of the royal atelier that produced the magnificent Shahnameh of Shah Tahmasp.[2] Other painters from Persia also worked on the Hamzanama.[3] An important Persian influence apparent in the Hamzanama paintings is a freedom of sense:

Persian paintings seldom have single centers of interest. Their compositions do not say, for example, "Look at this hero slaying a dragon!" Rather, they urge us to look beyond the narrative subject and to follow rhythms, shapes, and colors sequentially.[4]

To the flat, geometrical ornament of Persian painting, Indian-born artists who painted most of the Hamzanama added a new dynamism from the Indian traditions of painting:

constantly restless motion, so vivid that it dissolves the very surface on which it is painted. Everything is swept up by this motion, whether animate or inanimate, as though impelled by a hidden inner energy. Rocks swell out of the earth, boulder tumbling over boulder, crag over crag; the waters swirl and twist in dizzying eddies; foliage bursts out of trees like light from fireworks.[5]

In Persian epics like the adventures of Hamza, narrative descriptions of nature are minimal – usually only sunsets, sunrises and dark nights.[6] In the Hamzanama, the elaborate, energetic depictions of crowds, built structures, and nature often overwhelm the characters and action related

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[1] Thackston (2002) trans. for cat. 28, p. 290. Zumurrud Shah had his head broken prior to being put in the barn. Given the details of the above passage, the penultimate and final sentences seem mis-ordered. This may be a mistake in transcribing an oral story. One also suspects that what has been translated as "nose" might actually refer to a different bodily orifice, especially since Zumurrud Shad was able to see his condition.

[2] Seyller (2002) pp. 44, 48-50.

[3] Abdul-Samad, perhaps the second most important artist in creating the Hamzanama, was born in Shiraz, Iran, and also worked as a junior member of Shah Tahmasp's atelier. Id. pp. 44, 48. He took over supervision of the Hamzanama late in its production. *Id.* p. 33. In the court of Humayun, Akbar's father, Chandra (1975), pp. 15-18, identifies five other painters with a Persian origin or strong Persian influence. As Adle (2000) shows, new evidence indicates that Persian influence should not be over-emphasized. Humayun patronized painting before he fled to Persia. Moreover, manuscript painting was well-developed in Kabul even before Humayun traveled there from Persia. *Id.*, *passim*.

[4] Dickson and Welch (1981), vol I, p. 12.

[5] Chandra (1976) p. 70. Urban culture existed in the Indus Valley civilization more than 4000 years ago in what is today Pakistan and western India. For an excellent web presentation, see http://www.harappa.com/har/har0.html While no paintings remain from that era, lavish paintings 1300-2100 years old have been preserved in the Ajanta caves. Some images are available at http://www.anthroarcheart.org/ajanta.htm

[6] Hanaway (1970) p. 217. This is true for the text of the Hamzanama.

to the text. The paintings of the Hamzanama thus open up space for sense beyond the verbal narration.[1]

Visual conventions of text reading can affect the position and design of paintings in illustrated manuscripts. The official and dominant language of Akbar's court was Persian. Persian text, unlike English text, is read from right to left across lines and pages. In the paintings in Shah Tahmasp's Shahnameh, predominate horizontal lines of action almost always flow from right to left. In unusual cases where action flows from left to right, the narrative often suggests reverse action.[2] Most of the paintings in Shah Tahmasp's Shahnameh are placed on the right page of the open book, and the text boxes are generally placed beginning from the upper right corner, across and down to the lower left corner.[3]

The Hamzanama paintings do not follow these visual conventions. Action is equally likely to flow left-to-right and right-to-left.[4] Page numbers place the Hamzanama illustrations on the left when the folios are arranged as an open book.[5] Among the few paintings that have text boxes, one has a box on the lower left, and one has a box on the lower right.[6] One scholar has noted that the Hamzanama paintings "give the impression of having been made by men used to paint on walls or other vast surfaces, a practice firmly rooted in Indian tradition."[7] One of the leading Persian-born artists who worked on the Hamzanama painted the walls of a private apartment.[8] Paintings in the Hamzanama resonate with the perceptual routines of life, not text.

Introductory phrases in the Hamzanama text evoke non-linear, multi-modal sense. To open a new section or to change subjects, popular Persian romances in Akbar's time used conventional phrases such as "Now the relators of news and the narrators of secrets thus relate that..."[9] Each Hamzanama text page has an opening phrase. Some are minimal: "The narrator says...." But others are elaborately sensuous:

- *Mellifluous narrators and creative depictors have thus drawn the beautiful face of speech with the pen of exposition…*
- *The embroiderer of the brocaded pattern wove a legend thus on his China silk…*
- *The versifier of this nest of secrets speaks thus from behind the curtain…*

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[1] Allen (1988) argues that figural cycles that span the Islamic world are not narrative but emblematic, and that they do not allude to specific textual passages. This is true of the Hamzanama. However, the adventures of Hamza are part of a supra-ethnic and linguistic tradition encompassing the Islamic world. The Hamzanama primarily concerns human actions and states of mind, but not the representation of a specific narrative.

[2] Dickson and Welch (1981), v. II, includes all the paintings. Among the 258 figural paintings in the Shahnameh of Shah Tahmasp, on my count 70 of these to have a predominate horizontal line of action: 50 from right to left, and 20 from left to right. Left to right lines of action associated with reverse meanings include folio 42v (Faridun's eldest son retreating), 98v (Turanians invading Iran), and 102v (retaliatory killing).

[3] The boundaries of the text boxes usually define a rectangle that includes most of the painting. Among the 258 folios with figural paintings, 135 have a text in the lower left corner of this rectangle but not elsewhere on its bottom line, 98 have text across the bottom line, and 8 have text only in the lower right corner. The remaining 17 folios with figural paintings do not have text along the bottom margin.

[4] Seyller (2002) provides a large color print or small, black-and-white image for 166 out of 167 known, full-sized Hamzanama folios. On my count, 45 of these have a dominant horizontal direction of action: 17 right-to-left and 18 left-to-right.

[5] Faridany-Akhaven (1989) pp. 29, 52. *Id.* seems to have transposed "left" and "right" in the description of page positions in the prefatory material labeled "Transliteration."

[6] Seyller (2002) p. 256, prints r9 and r10.

[7] Wellesz (1952) p. 37.

[8] Koch (2002) p. 30.

[9] Hanaway (1970) pp. 249-53. This convention is at least as old as Ferdowsi's Shahnameh (late tenth century).

- *The teller of this exalted tale draws onto the string pearls of rubies…*
- *He who tuned the harp of meaning began his words thus…*
- *The master poet thus opens the lid of this treasure…*[1]

The Hamzanama text, even within a page, consists of loosely related events that a storyteller could choose to pass over, or to explore further. This makes the text like a brocaded fabric, a nest woven from unknown strands, colorful pearls, strings of a harp, or treasure in a box. The Hamzanama anticipates cybertext, but with less emphasis on ergodic verbal narrative and more on sensuous effects.[2]

The Hamzanama text has almost no over-all narrative style and direction. The text varies abruptly from flat narrative to dialogue, with florid verses occasionally inserted with little textual motivation. The text provides few narrative clues for ordering the existing folios, and about a third of them cannot even be placed within a crude partition of the fourteen consecutive volumes that were produced.[3] Many of the paintings and much of the text of the Hamzanama have little to do with Hamza's life. Episodes of battle, courtly life and love, magic, and trickery, repeated in vibrant and fantastic ways, push the story along, but often in no apparent general direction other than continued conversions of infidels and victories against them. While there are many characters in the story, they all are of a few types generic to traditional Persian epics.[4] Characters are introduced and discarded frequently, and it is often difficult to identify a figure in a painting with a specific character in the text.[5]

Even a short section of consecutive text pages from the Hamzanama shows little unity in persons and places. The longest, readily available sequence of Hamzanama text pages is pages 20-27 in volume 11.[6] Table 1 shows for each of these pages the number of places where an action occurs, and the number of distinctively named characters who are the subjects of action. The median number of places of action is five, and the median number of named actors is twelve. Yet a Hamzanama text page in English translation has on average only about 350 words, slightly more than the average on one text page of a recent Penguin verse edition of the Odyssey.[7] Eight randomly selected passages of this length in the Odyssey covered one place and three characters (medians for sampled passages). Actors have considerable persistent through the text of the Odyssey. In the Hamzanama, by contrast, actors change rapidly. Across text pages 20-27 of the Hamzanama, 58 named persons are subjects of action, and 44 of those persons appear on only one text page.

Table 1 Textual Breadth of the Hamzanama		
Text Page	Places	Persons
20	6	10
21	8	18
22	6	11
23	4	12
24	5	6
25	4	8
26	2	12
27	5	14

While the Hamzanama's text is often difficult to understand as narrative, it does make sense. For example, one text page ends thus:

> *Kayhur grabbed the leg of Qasim's horse, and anyone other than Qasim would have fallen from the horse. When Qasim saw this, he leapt from his horse. Kayhur tore the*

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[1] Thackston (2002), intro. phrases for cat. 22, 44, 77, 78, 79, and 81, respectively.
[2] For an influential discussion of cybertext, see Aarseth (1997).
[3] Seyller (2002) pp. 256-79.
[4] Hanaway (1970) pp. 240-7.
[5] Seyller (202) p. 104, 109. This is very different from book-form chronicles with paintings, as the detailed analysis of the paintings in the Padshahnama of Mughal Shah Jahan shows. See Beach and Koch (1997), pp. 161-207.
[6] This is the longest consecutive sequence in Thackston (2002).
[7] Fagles (1996).

horse apart, put the horse's leg in his mouth, and started to chew it. The men on both sides stood still. When night fell they withdrew.[1]

Why is Kayhur, who in the corresponding painting looks like merely a large human being, chewing on the horse's leg?[2] Why would an episode end like this? As narrative, the last two sentences mundanely deflate the bizarre drama of Kayhur's action. In performance, the audience might see the storyteller miming Kayhur's chewing on the horse's leg. They might stand still in horror or amazement. They might then disperse to return again for the next episode of the performance. This text seems more like part of a dramatic script, with the audience as the men on both sides, than like part of a narrative.

The Hamzanama texts contain many sensuous effects not distinguished in the narrative. Consider this passage:

"Give me permission to cut off the perpetrator's head," said Umar. The Amir did not agree. Umar put the point of his dagger against his breast and said, "If you don't give me permission, I will destroy myself." The Amir gave in, and Umar departed.[3]

The storyteller might say only that Amir reluctantly allowed Umar to pursue the perpetrators. Or the storyteller might make high drama out of Umar's determination to kill himself if he is not allowed to kill the perpetrator. The text conflates both of these possibilities in one flatly narrated passage.

Read without anticipation of elaboration in performance, the Hamzanama text often makes little sense. One passage reports in the manner of a short news summary what might be the plot of a rich romance:

In short, the two [a girl and Mihrat, a male] left the sea together and went to the girl's garden, where they reveled. One day the girl's brother, Devran son of Kisar, came in. The girl hid Mihrat under the throne. However, Mihrat sneezed, and the brother realized he was there. The girl ran away. Mihrat was seized, brought forward, and condemned to death.[4]

This passage quickly arcs from sex through a sneeze to a death sentence, all in the same flat reporting. In performance, the storyteller might evoke senses of desire, humor, and horror.

Hamzanama paintings sometimes depict passages tangential to what seems to be the primary narrative direction of the associated text. Four consecutive text pages advance the story of Prince Ibrahim's and Ghazanfar's rival quests for Khwarmah, whom they both love. A painting facing the second of these text pages depicts an event involving Mahiya and Zambur, spies for Prince Ibrahim:

As for Mahiya, she saw that it was late and she was waiting for Zambur to return. When a long time had passed she got upset. She put on her veil and boots and went outside the house, looking all through the marketplace until she came to that place. There she saw that someone [Zambur] was suspended upside down and a group of men had been drinking wine. The utensils of the party were scattered, and the participants were lying all over the place. She went forward and, recognizing Zambur, set him free. Then she drew

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[1] Thackston (2002) trans. for cat. 49, p. 299.

[2] Seyller (2002) cat. 49 p. 158 depicts Kayhur. While Kayhur looks much like Qasim, Kayhur is described as being the son of a demon and a large Ethiopian woman. Thackston (2002) trans. for cat. 49, p. 299.

[3] Id., trans. for cat. 51.

[4] Id., second trans. for cat. 52, p. 300.

a knife from her belt and cut off the heads of all Gharrad's companions. She hung Gharrad up in Zambur's place and went back home with Zambur.[1]

The painting shows Mahiya cutting off a sleeping man's head, six other dead men with their necks cut, Zambur hanging upside down in a doorway, and Gharrad still sleeping nearby.[2] While the painting impressively portrays a forceful Muslim woman, it and the associated story have little to do with the rival quests for a beloved.

The text sets out events that defy social and narrative conventions to achieve immediate sensuous effects. For example, the Zoroastrian chief Malik Tyson captured the Muslim Prince Sa'id, and sent him to Ki'al Man-Eater's island, where, "if a stranger appears, they will eat him."[3] This setting of mortal confrontation leads to events with much different sense:
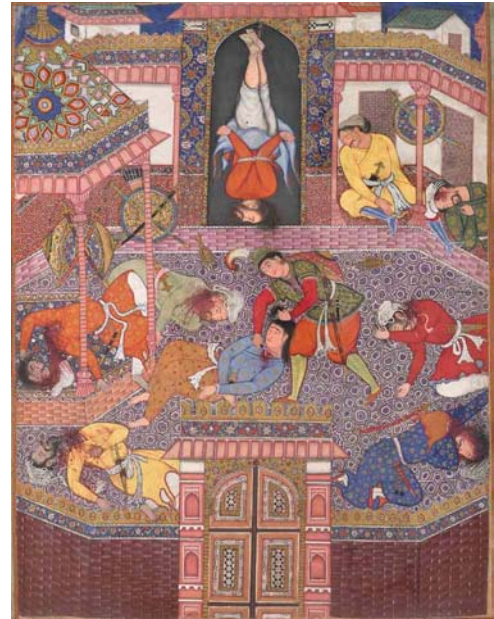
> *The narrator says that Prince Sa'id was brought before Ki'al, who had a daughter named Barghal. When she saw Sa'id, she fell in love with him. However, when Ki'al saw Sa'id, he said, "Bring a skewer and roast this human!"*
> *"Malik Taysun has sent this one for safe-keeping," said Barghal.*
> *"Then what should be done?" asked Ki'al.*
> *"He should be put in chains in the prison," she replied.*
> *Ki'al said to Silaq Man-Eater, "I entrust him to you. Keep him in chains. And he took the prince away and put him in chains in the prison.*[4]

On Ki'al Man-Eater's island, focus immediately shifts to Kial's daughter Barghal, who appears to be the person really in charge there. The narrative bounces into a quirky love story:

> *Barghal, however, was beside herself with love for the prince. Smiling, she waited patiently until it was night. She went to the prison gate, killed all the guards, rescued Prince Sa'id Farrukh-Nizhad, and took him to her house, where she said, "O Prince, I have given my heart to you. Marry me."*
> *"My beauty," said Sa'id, "whenever I see my mother and father, I will grant your wish." Barghal was patient.*

Barghal, clearly a no-nonsense sort of gal, might be expected to have little sympathy for Sa'id's concern to do nothing without first informing his parents. But Barghal was patient. She was also crafty when it came to dealing with *her* father:

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[1] Id., trans. for cat. 61, p. 303. Current popular and scholarly discussions probably would focus on the detail that Mahiya put on her veil. For a more interesting exploration of women in the medieval Islamic world, see Hambly (1998). Many more men than women are killed in the Hamzanama text. This also tends to be a feature of the contemporary world (currently in the U.S. about three times as many men are victims of homicide as are women). Those who dare to note male deaths tend to note quickly and apologetically that most killers are male. E.g. Corballis (2002) p. 136, n. 33. But the sex of killers is not significantly related to the experience of death.
[2] Seyller (2002) cat. 61.
[3] Thackston (2002), trans. for cat. 66, p. 305.
[4] *Id.*, trans. for cat. 67.

The next day the guards went to Ki'al and said, "Last night your daughter came to the prison, killed all the guards, and made away with the prisoner."

Ki'al summoned his daughter and asked her about it. She said, "Yes, when he was brought before you and you ordered him to be roasted, I was greatly inclined toward him. I kept you from doing it. Last night I went and took him out of prison, roasted him, and ate him." Ki'al accepted this.

While Barghal easily deceived her father, she had no luck in changing Sa'id's mind:

Nonetheless, every night she came to Sa'id and repeated her demand. Sa'id gave her the same answer until the girl got fed up. The fire of her love enflamed, she said, "O prince, when will you go to your mother and father?"

"My mother and father will not come here," he said. "but if you get horses and arms, you and I will escape and get ourselves to them so that you may have your desire."

Barghal immediately brought horses and arms, and the two escaped. A few sentences later they encountered another woman, Khosh-Khiram, the daughter of the nurse to the woman whom Sa'id really loves. In just a few more sentences, the passionate and heroic Barghal is lamely put out of the story:

They [Barghal, Sa'id, and Khosh-Khiram] dismounted at the foot of a mountain and camped there for the night. However, a panther came down from the mountain and tore Barghal to bits. Sa'id killed the panther and, the next morning, laid Barghal to rest in the earth.[1]

If the narrative had any consistency, Barghal would have killed the panther to save Sa'id from death. But there is no sustained narrative here – just continual fun, and an insignificant shift away from Barghal, who, despite all she did, never got her desire.

The importance of sense over narrative can also be seen in the use of historical material. An early painting in the Hamzanama is titled, "Anoshirvan lays the foundation of Ctesiphon at an auspicious hour."[2] There was a Sasanian king Khusrau Anushirvan who ruled Persia from the imperial city of Ctesiphon from 531-579 G.C. He built the Great Arch of Ctesiphon, the largest brick vault in the world – 115 feet high and 82 feet wide, and still standing today.[3] The Parthians, however, had established Ctesiphon as the Persian capital c. 150 B.G.C. That was about 800 years before Anushirvan's reign. The Parthians established Ctesiphon by renaming and re-developing the ancient Babylonian city of Opis. Opis had been the capital of an administrative region of Babylon and was founded c. 2200 B.G.C. In the Hamzanama, this history of Ctesiphon is truncated. The foundation of Ctesiphon is associated with the sight of construction of Anoshirvan's Great Arch of Ctesiphon.

The Hamzanama draws upon an enormous range of myth, literature, and history. Hamza is often called the Sahib-Qiran, meaning lord of the auspicious planetary conjunction, a reference to astrological tales. His court is often called Solomon's court, which refers back to the wisdom and might of the Hebrew king, Solomon. One morning, to sound the call for battle, Hamza "ordered Alexander's drum, Jamshed's flute, and Gayomarth's cymbal sounded."[4] In Ferdowsi's

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[1] All the quoted passages above are consecutive passages from one Hamzanama text page, *id.*
[2] Seyller (2002) R2, p. 257.
[3] See http://www.livius.org/ct-cz/ctesiphon/ctesiphon.htm For an image of the Arch in 1889, see http://www.friesian.com/iran.htm Lowry et. al. (1988) pl. 38 provides a larger, black-and-while image of this painting, but misidentifies the subject as the castle at Khawarnaq. *Id.* p. 32, ft. 3. The painting does, however, share visual elements with an earlier painting of the castle at Khawarnaq. See Gray(1961) p. 116.
[4] Thackston (2002), second trans. for cat. 48, p. 298.

Shahnameh, Keyumars (Gayomarth) is the first man and the first shah of the world, and Jamshid, the fourth shah. Alexander in the Shahnameh comes much later in the chain of shahs; his character is partly shaped by the historical figure of Alexander the Great, who conquered Persia in antiquity. An early painting in the Hamzanama is captioned, "Hamza marries the daughter of Faridun Shah, the King of Greece, who converts to Islam."[1] The Hamzanama also includes a character called Alamshah Rumi (the Greek), who is one of Hamza's sons.

Just one folio of the Hamzanama presents three heroic tests famous in European literature. For at least 800 years, Arthur pulling a sword from a stone has been an episode in European legends about English knights.[2] In the Hamzanama, a painting shows an infidel champion burying a spear into a tree.[3] The associated text describes his challenge: "if anyone can pull this spear out of the tree, he will have performed a real feat." Hamza's brother Ayjil is equal to the challenge, and more:

> Ayjil reached out and grabbed the spear, heaved, and pulled it from the tree. Then he struck it with such force against the rock, which was lying as large as a mountain at the base of the tree, that sparks flew from the spear and the rock sank into the earth. The spear sank nearly two cubits into the rock.

Another infidel champion, Maghlub Long-Neck, duplicated a feat with memorable antecedents in Persian and European literature:[4]

> Maghlub Long-Neck ordered a beautiful slave dressed in brocade to come forth and sit at the gate. Then he took an apple from the table and placed it on the slave's head. From a distance of seventy paces he shot an arrow that took the apple from the slave's head as the people cried out in glee.

Only a few sentences earlier he had set out a challenge similar to one Penelope posed to her suitors:

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[1] Seyller (2002) R20, p. 259. Faridun was an early shah of all the world in Ferdowsi's Shahnameh.

[2] This episode has been traced to Robert de Boron's Merlin romance (c 1200), which was incorporated into the Vulgate Cycle of Arthurian stories (1227-35). Lacy (1996) pp. 437-8. But legends about King Arthur were widespread before these works were written. In a work written 1174-79, a European scholar noted:

> Who is there, I ask, who does not speak of Arthur the Briton, since he is but little less know to the peoples of Asia than to the Bretons, as we are informed by our palmers who return from the countries of the East? The Eastern peoples speak of him as do the Western, though separated by the breadth of the whole earth. Egypt speaks of him and the Bosphorus is not silent. Rome, the queen of cities, sings his deeds, as his wars are not unknown to her former rival Carthage. Antioch, Armenia, and Palestine celebrate his feats.

Alanus de Insulis, Prophetia Anglicana Merlini Ambrosii Britanni, quoted in Loomis (1949) p. 3. Saracens, a European term for Muslims, are significant figures in the Arthurian legends. For example, in these legends a Saracen knight Palemides is defeated by Sir Galahad and accepts Christianity. The adventures of Hamza and the Arthurian legends are similar, with some obvious transpositions. At least some storytellers 400-900 years ago probably explored both. Persons interested in either today might well follow this historical lead and seek to better appreciate the other.

[3] Id. cat. 33. The quotations in this paragraph are from Thackston (2002), trans. for cat. 33, p. 292, penultimate sentence for vol. 11, text number 6, and sections of vol. 11, text number 7.

[4] About 1177 in Iran, Farid ud-Din Attar wrote a well-known poem that includes a short section about a king practicing his archery by shooting an arrow through an apple resting on the head of a beautiful slave. The account focuses on the perspective of the slave, presents the king as vain and selfish, and mentions nothing about the distance of the shot or the reaction of onlookers. Attar (1177/1984) p. 46 (about lines 968-980 in poem). Shooting an arrow through an apple sitting on top of an innocent person's head is a scene found in German-Scandinavian tales from 800-1000 years ago. In these tales, as in the Hamzanama, the shot is presented as a heroic feat. The tale of William Tell, first written in Switzerland in 1470, is probably the best known instance of this type of scene. See Child (1882-98/1965) pp. 14-30.

Seven steel shields were brought, and he [Maghlub Long-Neck] took a bow in his hand and some arrows like spears. He put an arrow as large as a shovel into this bow and shot it. It passed straight through the shields and kept on going. Everyone cheered. He sat down and said, "I desire that my bow be passed to each and every champion, and let them all have a try."

None of Zumurrud Shah's champions could draw the bow. Maghlub Long-Neck said, "In all the Aaq Desert, where the men are renowned throughout the world for drawing bows and shooting arrows, no one could draw this bow or shoot this arrow."

Maghlub Long-Neck proposed to wait and see if "someone among the squires or the people of the city may be found who can pull the bow." Hamza's Greek son Alamshah stepped up:

That champion exerted himself and stretched it from ear to ear, snapped it three times, took some arrows, put them in the bow, and shot them so hard that they passed straight through the tree and stuck in the ground up to the feathers. Once again he exerted him-self, and the bow broke at the handle. Alamshah tossed it away and said to the squire, "Tell Maghlub not to boast any more."[1]

In the Hamzanama, stories of the sword in stone, shooting an apple from an innocent's head, and bending a nearly unbendable bow are taken out of context, compressed and adapted, and strung together like pearls.[2] These historically enduring stories have little narrative significance in the Hamzanama. They are most likely there for their time-tested sensuous effects.

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[1] Cf. the Odyssey, Book 21, "Odysseus Strings His Bow." Another parallel to the Odyssey is in the Hamzanama, vol. 11, text number 24 (Thackston (2002), trans. for cat. 42, p. 294). In a short section of that text, a hero hurls himself into a river, swims mightily, almost drowns, rides a piece of wood, and reaches land at the source of a river. After caring for some rudimentary needs (drying his clothes), he sees a group of girls. One of them is the daughter of the king of that realm and exceedingly beautiful. She falls in love with him, gives him a robe, and takes him back to a palace where they celebrate with much wine. Cf. Odysseus's shipwreck and reception on Phaeacia (end of Book 5 and beginning of Book 6). Hamzanama, vol. 11, text 76 (Thackston (2002), trans. for cat. 86, p. 312) may have some interculturality with Dante's Inferno. The associated painting shows a huge black pit in the middle of which is a dragon. But the perspective is reversed: "Despair not, for the end is good."

[2] The storyteller responsible for the Hamzanama , vol. 11, text number 7, probably had a strong Islamic influence. Historically, Islam has valued highly learning from the best literature around the world, including non-Islamic litera-ture. Further evidence for the Islamic character of the author is the preface to the preceding text page (text number 6): "Thus says Wahib son of Wahab, from Mas'ud of Mecca of exalted lineage." That text page also includes one use of the clause "God willing", and two uses of the clause "if God grants it." This recognition of dependency on an all-powerful God is a key aspect of Islam.

E. Making Sense of Presence

In producing the Hamzanama, Akbar invested in evoking presence for many, diverse subjects. In the adventures of Hamza, like in other popular Persian romances, characters lack the psychological depth of real persons.[1] Characters represent not persons, but valued characteristics. The narrative does not flow over time as a stream of interrelated, developing events, but shifts focus from moment to moment while repeating, with some amusing variations, conventional models of warfare, trickery, love, and journey. At a performance of the adventures of Hamza, a person could collect characteristics, viewpoints, and themes of personal interest without being pushed to the margins of a narrative stream. The Hamzanama paintings – large, colorful, energetic – offer multiple entry points and many images of interest within one frame. The Hamzanama is an investment in enabling persons to experience within one performance a sense of presence particular to their own subjectivities.

Epithets used for Hamza in the Hamzanama evoke diverse identities. Hamza is called "the great Amir Hamza the Arab" or "Amir of the Arabs," where amir is a term indicating nobility. Hamza is also called "the prince of Iran and Turan" or "the Amir of Iran and Turan." Hamza is all this even within one text page.[2] These epithets are unusually multi-dimensional literary hyperbole. In the Shahnameh, the Iranian national epic revered for hundreds of years before Akbar's time, the Turanians are the Iranians most implacable enemy.[3] The ruler of Turan (Transoxiana) was also in Akbar's time a dangerous rival to him. Moreover, the Shahnameh subtly preserves and celebrates the Persian culture that existed before the Arabs conquered Persia and established in Persia the Arabic script and Islamic religion and culture. Similarly, tension existed among Mughal officials over what fidelity to Islam meant, not in a homogenous Arab Islamic society, but in Akbar's diverse empire. In Akbar's court, persons might identify with Iranians (the high culture to the west), Turanians (Central Asian warriors), or Arabs (the source of Islam). Hamza, hero of the Iranians, Turanians, and Arabs, could be the hero who each member of the audience wants him to be.
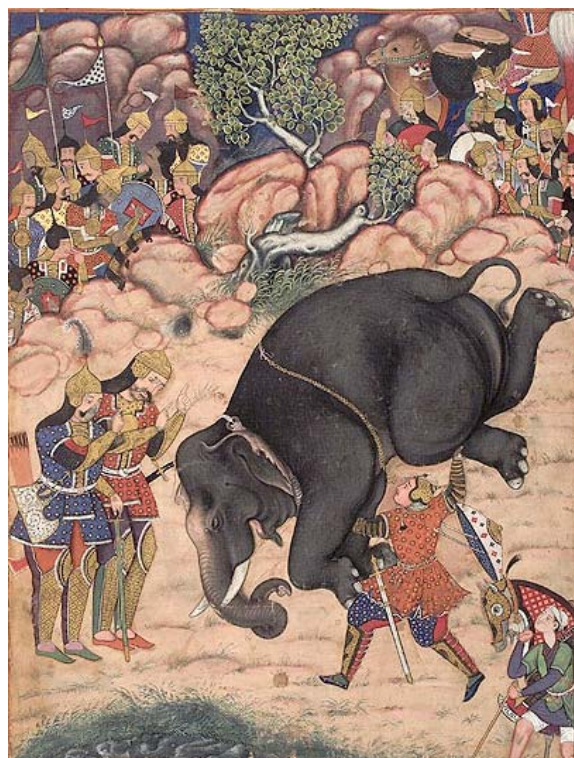
The gazes of painted figures in the Hamzanama give the viewer the freedom to make sense of the scene. Painted figures in the Hamzanama almost never assert their own subjectivity by meeting the eyes of the viewer. Painted figures generally have their bodies turned and their eyes di-

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[1] Hanaway (1970) pp. 240-4.

[2] E.g. Thackston (2002), trans. for cat. 21, p. 288, trans. for cat. 36, p. 293. Hamza was also called the Sahib-Qiran, a name also used for Timur (Tamerlane), a Turko-Mongol leader who conquered Persia and much of India in the fourteenth century (Beach and Koch (1997) p. 159).

[3] Yarshater (1988) p. 17-8.

rected at someone or something within the painting. To see the possibility and significance of a different choice, consider the Hamzanama painting of a hero lifting an elephant as a show of strength on the battlefield.[1] The painting shows the hero, with his back three quarters turned to the viewer, lifting the elephant and looking at two enemy warriors. The painting would have had a much different sense of presence if the hero had lifted the elephant above his head while looking straight out at the painting's viewer. Such a choice would have made the hero into a character demanding recognition, not only from other characters looking on in the painting, but also from the viewer outside the painting.

The few instances in which figures in Hamzanama paintings look outward seem to be painters asserting their presence. These figures are small and placed near the edges of the paintings. They occur in paintings with many other figures, all relating with gesture and gaze to each other.[2] The figures looking outward seem to function as signature decorations. The most impressive instance is in the upper-center area of a painting filled with active persons.[3] There three figures are framed in a window. Two in the lower portion of the window are looking down and across. Centered above the line of their heads floats a third face, looking straight out at the viewer. That face breaks the painting's invitation to enter and act within its world. The face seems to be an artist saying, "Here I am. You are looking at what *I* have done!"

European Christian engravings and paintings fascinated Akbar and his court. Recent scholarship indicates that work on the Hamzanama finished about 1573, the year that Akbar met a Portuguese delegation in Goa and received gifts from them.[4] A Jesuit priest at Akbar's court described in early 1580 Akbar's reaction about that time to two paintings of Mary, the mother of Jesus:

> On entering he was surprised and astonished and made a deep obeisance to the picture of Our Lady that was there, ...as well as to another beautifully executed representation of Our Lady brought by Fr. Martin da Silva from Rome, which pleased him no end, and then he left to praise them to his captains who waited outside. He was so taken up that he came in again with a few of his intimates and his chief painter and other painters, of which he has many excellent ones, and they were all wonderstruck and said that there could be no better painting nor better artists than those who had painted the said pictures.[5]

The Jesuit priest's understanding of the significance of the painting probably strongly shaped his sense of this event, particularly since he was a cultural outsider and did not understand Persian. However, Akbar's chief painter was most likely a widely recognized person.[6] Akbar's return with this person and others is a more objective indicator of Akbar's reaction. Another contemporary Jesuit account of an event in March, 1582 provides similar types of details, as well as some complex and distinctive senses:

> ...a certain noble, a relation of the King, secretly asked the officer in charge of the royal furniture for the beautiful picture of the Virgin which belonged to the King, and placed it (unknown to the King himself) on a bracket in the wall of the royal balcony at the side of

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[1] Seyller (2002), cat. 52.

[2] Seyller (2002), cat. 35 (discussed infra), cat. 53 (figure in lower right), cat. 57 (figure in lower right), and cat 71 (center right near horse).

[3] *Id.*, cat. 35.

[4] Seyller (2002) pp. 38-40.

[5] Correia-Afonso (1980) p. 31.

[6] Seyller (2002) pp. 47-8 and Wellesz (1952) p. 26 document the public importance of painting in Akbar's court.

the audience chamber, where the King was wont to sit and show himself to the people and to give audience to those who desired it. The aforementioned noble surrounded and draped the picture with the most beautiful hangings of cloth and gold and embroidered linen. For he thought this would please the King. Nor was he mistaken: for the King warmly praised the idea, which also gave great pleasure to the priests, who perceived that non-Christians were worshipping and reverencing the picture, and – as if compelled by the unaided force of the truth – were not denying veneration to the image of her whom the morning stars extol, and whose beauty amazes the Sun and Moon...[1]

Mughal fascination with paintings of Mary was just the beginning. As one scholar notes:

European visitors to the palaces and tombs of the emperors of Mughal India ("Mogor" in Portugese) between the 1590s and 1660s were amazed to find them prominently adorned with mural paintings depicting Christ, the Virgin Mary, and Christian saints executed in the style of the Late Renaissance. To their astonishment, they also discovered Mughal artists at work on large numbers of miniature paintings, exquisite jewelry, and sculptures of the same subjects – including many which were apparently even being used as devotional images.[2]

Akbar was arguably militarily more powerful, materially richer, and culturally more sophisticated than any European leader at the end of what the Europeans called the sixteenth century. Why would he and his court be attracted to paintings that had become a source of bitter conflict within Europe and were in any case from what they might have rightly regarded then as a vastly inferior civilization?

Recent scholarship seems to explain Mughal-Christian interculturality with culturally specific representations and narratives. This scholarship explains interest in Christian imagery as a matter of appropriating representations:

They interpreted missionary art on their own terms and used images of Christian saints and angels to proclaim a message based on Islamic, Sufi, and Hindu symbolism and linked with Persian poetic metaphor.

...Far from being alien to Indo-Islamic culture, these figures carried a rich range of associations for their Mughal audience and communicated messages related to moral leadership, divine guidance, and royal genealogy. Contemporary texts show that Mughal panegyrists openly alluded to both figures in prose and poetry to promote their leaders' rights to rule. It naturally follows that Mughal artists encoded the same meaning into portraits of these holy figures.[3]

Contemporary Western scholarship tends to respond to images in terms of encoded messages and symbols.[4] Analyses of power are also common, and they occur, more or less self-consciously, in

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[1] Monserrate (c. 1591) p. 176, which continued with historically characteristic bitterness, "(though some, who vainly claim to follow Christ and to be ministers of the Gospel, impudently abuse her and are thus worse than the very Musalmans)." Mughal paintings done forty to sixty years later depict Jahangir, Akbar's son, seated in court with a portrait of Mary on the wall above. See Beach and Koch (1997) pl. 38, 39.

[2] Bailey (1999) p. 112.

[3] Bailey (1998) p. 37.

[4] The Jesuits in Akbar's courts also did this, despite an attempt at intercultural explanation:

Sire, we do not venerate the images for what they are, because we are well aware that they are merely paper or canvas with pigments; it is because of those whom they represent. Just as with your fermans *[decrees]: you do not touch them to your foreheads because they are papers covered in ink, but because you know that they contain your order and will.*

Footnote continued on next page.

conjunction with seeking power, supporting those in power, advocating for those without power, some complexly reasoned combination of these strategies, or a claim to none at all.

While this sort of analysis provides a plausible explanation for royal use of Christian imagery, it doesn't explain why the first European paintings to reach Abkar's court created such a sensation. The first European paintings that reached Akbar's court were large oil paintings of Mary, the mother of Jesus.[1] Mary was a known figure in Akbar's court. She is the only woman mentioned by name in the Qur'an, and Akbar's mother was named Maryam, the Arabic form of the name Mary. Moreover, Akbar's court was quite active in creating portraits.[2] Within the riches of Islamic, Sufi, Hindu, and Persian culture, a portrait of Mary seems like a rather dull representation. Perhaps being dull was an advantage. If no one cared much about this representation, then it wouldn't be a source of religious and cultural conflict.[3] But being not provocative isn't a good explanation for being sensational.

At least one of the paintings of Mary that the Jesuits brought to Akbar's court was a *hodigitria* – an icon of a type that had greatly affected viewers across the previous millennium. Empress Eudokia Augusta brought to Constantinople in the fifth century a large icon that created this iconographic type.[4] The evangelist Luke was thought to have painted it from the living presence of Mary, the mother of Jesus. He reputedly painted it on a tabletop that Jesus, a carpenter by profession, made.[5] *Hodigitria* means "the guide who shows the way." After the Byzantine iconoclasm of the seventh and eighth centuries, the return of this famous icon and others was celebrated in a special feast day called "The Triumph of Orthodoxy" or "The Restoration of the Holy Icons."[6] The original Constantinople *hodigitria* was lost in the fifteenth century. By that time, another *hodigitria*, one kept in the Borghese Chapel of the Church of Santa Maria Maggiore in Rome, had become famous and was renowned for working miracles. This later icon, known as the Salus Populi Romani or Borghese Madonna, was painted on a five-by-three-feet cedar slab.[7] Francis of Borgia, the third director-general of the Jesuits, received permission from Pope Pius V to have the icon copied. Jesuits took copies of the icon with them on foreign missions, including the mission to Goa, India.[8] One of the paintings of Mary that the Jesuits brought to Akbar was almost certainly one of these copies.[9] While the specific painting has been

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Quoted in Bailey (1999) p. 127. Akbar may have touched letters to his forehead in order to make them effective as his decree. Another possibility is that such letters may have been effective even without this action, but Akbar may have done it because that was part of the recognized ritual of the emperor "writing" a letter. Or Akbar may have had other reasons. The point is that Akbar's reasons may have had little to do with what the writing on the page contains or represents.

[1] Maclagen (1932) pp. 227-8; Bailey (1999) pp. 115-6.
[2] Wellesz (1952) p. 26.
[3] Bailey (1998) p. 38. Bailey (1999) pp. 140-1.
[4] Mathews (1998) p. 65. *Hodigitria* is also spelled *hodegetria* in the scholarly literature.
[5] Cormack (2000) p. 32; Cruz (1993) p. 137, quoted in Frisk (2002). For a similarly story regarding the icon of Our Lady of Czestochowa, see SSPX (2002).
[6] Cormack (2000) pp. 28-9, 32.
[7] Frisk (2002).
[8] Maclagen (1932) pp. 227-8.
[9] One painting was "a picture made in Goa of that St. Mary Majore," which seems to be the same as "the picture of Our Lady that was there, from the painting of St. Luke, done by Brother Manuel Godinho." When members of Akbar's court "went to see the one of St. Luke inside the church, which Fr. Francis Henriques had kept ready with its scents and oil-lamps from Mecca…," they reportedly "could no longer contain their great joy at seeing the Infant Jesus in his Mother's arms." Correia-Afonso (1980) pp. 60, 31, 33. The other painting brought in 1580 was "another beautifully executed representation of Our Lady brought by Fr. Martin da Silva from Rome. It was an alter-

Footnote continued on next page.

lost, that the painting was a copy of the Salus Populi Romani describes it precisely and indicates its time-tested effect on viewers.

A better explanation for the sensation that the first European paintings created in Akbar's court is that these paintings of Mary powerfully evoked a new sense of presence. The paintings brought in 1580 were described as altar pieces.[1] They were thus much larger than typical Mughal portraits, and probably even larger than the Hamzanama paintings. Like the Hamzanama paintings, the paintings of Mary were part of a multi-sensory experience. The Jesuits described Akbar viewing the paintings of Mary in a church "well appointed with its perfumes and fragrance," and undoubtedly also other distinctive physical artifacts of Jesuit spirituality.[2] Moreover, like the storytellers who performed with the Hamzanama, the Jesuits in relation to the paintings of Mary probably provided a verbal and gestural complement that Akbar saw and heard.

The paintings of Mary evoked a different sense of presence than the Hamzanama did. While the Hamzanama paintings had much decorative detail and provided energetic, colorful, and unstructured visual stimuli, the Salus Populi Romani and other *hodigitria* have simple, quiet shapes and only a few colors.[3] Mary's face is a central feature of the icon. Most importantly, *hodigitria* depict a neurophysiologically important aspect of personal recognition: Mary's eyes look straight out at the viewer. Only marginal figures in the Hamzanama occasionally did this. In almost all Mughal portraits, the figures' heads are turned at least slightly, and the figures' eyes do not meet the viewer's eyes.[4] While the Hamzanama provided an artifact that allowed all of Akbar's subjects to revel in their own subjectivity, *hodigitria* present a different subjectivity, one insisting on

piece given to Akbar in 1580. Correia-Afonso (1980) p. 31, 33-4. One painting of Mary is described as showing the "queen of heaven, seated on her throne" (id. p. 48). See also du Jarric (1926) pp. 160-3. As Bailey (1999) p. 228, ft. 20 points out, contra Correia-Afonson (1980) p. 31 ft. 6, this other painting probably was not a copy of the Salus Populi Romani, which does not show Mary seated.

[1] Correia-Afonso (1980) p. 33, 34, 48. See also Monserrate (c. 1591), p. 176.

[2] *Id.* pp. 30-1.

[3] For images of the Salus Populi Romani, see Frisk (2002) and Belting (1994) fig. 21. McCall (1948) fig. 22 shows a sixteenth-century copy of the painting. Welch (1978) p. 18, fig. 1 shows a madonna with Mughal style and *hodigitria* iconography. Id. dates it ca. 1575, but undoubtedly it was created after 1580, when the Jesuit paintings of Mary arrived in Akbar's court.

[4] On portraits in Akbar's courts, including a selection of images, see Brand and Lowry (1985) pp. 79-84. This also seems true of portraits under the subsequent two Mughal emperors, Jahangir and Shah Jahan. See, for example, the paintings included in Thackston (1999) and Welch and Welch (1982), especially pl. 67, the (diplomatically) important portrait of Shah Abbas I. While Islam, like Judaism, has historically had concerns about images of persons in religious texts and spaces, there is figural Islamic and Jewish art. Some ceramics from the Islamic world in the tenth through the thirteenth centuries show faces with eyes looking out at the viewer. In the Freer Gallery Washington, DC, such pieces include a jar from 10'th century Iraq [F1953.90, published in Atil (1975) pl. 12] and matched bowls showing a crowned male and female, from the Kashan center of 13'th century Iran [67.24, 67.25].

her own presence. This difference is the most plausible explanation of what made the paintings of Mary sensational.[1]

The sense of presence that the paintings of Mary evoked has no necessary connection to Renaissance pictorial realism. In early seventeenth century Europe, persons marveled at the vivid motion, vibrant colors, and earthy, three-dimensional forms depicted in works like Caravaggio's Madonna dei Pellegrini. About that time in Akbar's empire, over thirty years after the last painting of the Hamzanama, persons marveled at another large, traditional icon of Mary. This one was a copy of the Madonna del Popolo, a *hodigitria* that Pope Gregory IX presented to a church in Rome in 1231.[2] Ten thousand persons came in one day in 1602 to see the painting. A great captain, "accompanied by more than sixty men on horseback," came to see the painting. Although he had already seen other *hodigitria*, Akbar asked that the painting be brought to him. He kept it overnight in his "sleeping apartment," where his wives and children lived. Soon thereafter Akbar's mother requested that the painting be brought to her, and so did other socially and politically important persons. The painting became a crowd attraction and a performance piece:

> *A great crowd of people had assembled in the palace yard in the hope of being able to see the picture…seeing that they would be able to satisfy so large a number of persons at one time, [the Jesuit priests] placed it where all could see it and publicly uncovered it.*

> *The moment it was exposed to view, the noise and clamor of the crowded courtyard was hushed as if by magic, and the people gazed on the picture in unbroken silence.*[3]

If this effect was a result of a style of painting, it was a result of a style of painting that went back to Byzantium. Akbar's court rapidly absorbed paintings, styles, and techniques from the European renaissance, and perhaps these were also able to contribute to such effects. The Hamzanama was undoubtedly designed to contribute to a similar effect. However, neither the Hamzanama nor the *hodigitria* represented pictorial realism. They both were sensational in making sense of presence, but in much different ways.

While sense of presence is a bodily function, the history of the Hamzanama shows that the lived circumstances of persons and societies affect this sense. Babur, the first Mughal emperor and Akbar's grandfather, derided a leading literary figure

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[1] One of my friends in graduate school left Iran to avoid being forced to fight in the war between Iran and Iraq that caused the death of about a million males. I still remember him speaking to me about the power of Ayatollah Khomeini's eyes, the way his "look" affected ordinary persons.

[2] Du Jarric (c. 1604) pp. 160-1, 271 ed. fn. 4. The third Jesuit mission to Akbar brought this painting from Portugal about 1600. It is not one of the first two paintings of Mary brought to Akbar in 1580. An image of the Madonna del Popolo is available at Greenhalgh (2003).

[3] Du Jarric (c. 1604) p. 168. The previous details about interest in the icon are from id. pp. 163-71.

for using the adventures of Hamza as a model for one of his works. To Babur, tales like the adventures of Hamza were "contrary to good taste and sound reason."[1] Akbar, on the other hand, invested an enormous amount of resources in producing the Hamzanama. Each folio of the Hamzanama cost 25-100 times that of a typical Mughal painting, and the Hamzanama had over a 1000 times more paintings than the typical illustrated Mughal manuscript.[2] Undoubtedly Akbar sensed something in the adventures of Hamza that Babur did not.

The Hamzanama also invoked different responses from subsequent leaders. The Hamzanama was inspected relatively infrequently in the imperial library after the first few years of the reign of Jahangir, Akbar's son and successor. One scholar explains the lack of attention to the Hamzanama thus:

> *this relative disfavor comes as no surprise, for the later emperors and their courts differed from Akbar as much in character as in aesthetic taste, with physical vigor and cultural ebullience gradually giving way to more cerebral and calculated manners and more conspicuously refined styles.*[3]

On the other hand, when the Persian leader Nadir Shah conquered Delhi in 1739, he apparently took at least some of the volumes of the Hamzanama back to Iran. The Mughal emperor sent a special plea for their return, but the Persian leader reportedly replied, "Ask but the return of all your treasures, and they are yours – but not the Amir Hamzeh!"[4]

When the Hamzanama was divided, scattered, and separated from its place in the performance of the adventures of Hamza, it evoked little more than a conventional response. An iconoclast defaced the heads of the living creatures in most Hamzanama folios found in 1881 in Srinagar, Kashmir.[5] Most of these folios are in poor condition. They were found "stopping up the chinks in the windows of a curiosity-shop."[6] What had been a great artistic treasure, created to evoke a sense of presence for many, diverse subjects, had become, late in the nineteenth century, mere paintings that made no impression.

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[1] Babur, in his observations for the year 911 AH (1505-6 G.C.), noted this about Mir Sarbirahna:

> *Among the learned men and poets of Khurasan his word carries great weight. He has wasted his life, however, on an imitation of the story of Amir Hamza and has produced a lengthy, overlong pack of lies contrary to good taste and sound reason.*

Thackston (1996) p. 220 (folio 176 in original text).

[2] Seyller (2002) p. 34. Based on the catalog of 186 Mughal manuscripts in Seyller (1997), pp, 280-340, a typical Mughal illustrated manuscript has about 3-14 paintings, while a few had 130-160 paintings. A knowledgeable scholar estimates that a typical sixteenth-century Persian illustrated manuscript had 50-60 paintings among 500-600 folios (Simpson (2002) p. 132). A single volume of the Hamzanama, at least for the initial volumes, had a production cost 2.5 times greater than the highest valuation recorded for a manuscript in the imperial Mughal library. Seyller (2002) p. 34 (production cost of 50,000 rupees per volume) and Seyller (1997) Table 1, p. 274 (table of manuscript valuations). Seyller (2002) p. 34 notes that, in contrast to other Mughal manuscripts, most of the investment in the Hamzanama was in the painting, not in the calligraphy.

[3] Seyller (2002) p. 43.

[4] *Id.* p. 36. Nadir Shah may not have taken all of the Hamzanama, and some of what Nadir Shah took may have been seized by Sikhs who attacked him as he returned to Persia.

[5] Owen (2002) p. 282.

[6] The quote is from the Victoria and Albert Museum's description of its acquisition of its Hamzanama folios. See http://www.vam.ac.uk/exploring/shortstories/Hamzanama?section=index The situation does not reflect lack of interest in the adventures of Hamza, which were widely popular as printed text in this region at that time. See Pritchett (1991) pp. 7, 14, 22-34.

III. A Masterpiece of Sensuous Communication: The Morgan Bible of Louis IX

Even just a little knowledge can make a book into a physically impressive object. The Morgan Bible of Louis IX is a book about 750 years old.[1] Louis IX, the king of France from 1226 to 1270, probably gazed at its pages, which were probably made for him.[2] The book originally contained at least forty-eight parchment folios and had dimensions larger than books normally used then and now for private study.[3] All the pages present large paintings, done in brilliant colors, including lustrous gold backgrounds. The painting on a page is usually organized into four connected rectangular scenes featuring recurring standing figures and chaotic battles. Around the paintings are texts in three scripts that have much different visual qualities. The book creates sensuous fascination like a lavish comic book containing stories that today neither children nor most adults can easily understand.[4]

 The Morgan Bible of Louis IX evokes a specific sense of presence that could not be confined to a particular sensory mode. Hebrew scripture, although recognized by Jews and Christians as the written word of God, has from the beginning been understood with the full sense of the human body. Louis IX's personal sense greatly emphasized action. The Morgan Bible, as originally produced for Louis IX, pushed the word out of the book and directed attention to paintings of human actions that composed God's law as Louis IX sensed it. Yet the painting themselves drew significantly on visual conventions associated with text. Subsequent owners of the Morgan Bible sensed immediately a need to add text to it, which they did. Most significantly, the paintings in the Morgan Bible show remarkable tension concerning how God communicates with persons – whether with a book, a scroll, a hand or head in the sky, or in the full figure of a person standing on the ground. Despite Louis IX's distinctive choices in ordering its production, the Morgan Bible evokes a sense of presence similar to that of Hebrew scripture.

A. Sense of Scripture

Hebrew scripture makes sense through the whole living body. The Morgan Bible originally incorporated solely in paintings Hebrew scripture recognized in Louis IX's court to be the written word of God. Hebrew scripture is elliptical and fraught with important word choices and verbal relationships. A best-selling literary scholar described one of the sources of Hebrew scripture thus:

> *Notoriously not a visual author, J [a textual component of Hebrew scripture] makes dynamism and movement count for more than the external world as we see it. No other great writer cares less than J does to tell us how persons, places, and things look. ...J's*

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[1] Most scholars attribute the Morgan Bible to artists in Paris under Louis IX. Weiss (2002) pp. 15-8. Branner (1977) p. ix suggests an English origin. The evidence in this section provides further support for Louis IX as patron. The name "Morgan Bible of Louis IX" is used here as a conventional description reflecting the weight of scholarly evidence.

[2] A exhibit of the (unbound) book at the Walters Art Museum in the fall of 2002 alerted visitors to these points. I had the good fortune to be able to visit the exhibit, which I enjoyed immensely. My visit promoted me to think about the Morgan Bible in relation to communications policy and thus led to the work in this section.

[3] Each folio presents two pages, a verso and a recto page. The folios, which were trimmed slightly (perhaps in the sixteenth century) may have originally measured about 432 mm by 330 mm. See *infra.*, Section III.C.

[4] Cockerell and Plummer (1969) contains color plates of all the Morgan Bible paintings. In 1999 Faksimile Verlag Luzern produced a magnificent facsimile of the Morgan Bible. Weiss (1999) is a supplementary commentary volume to that printing.

art, and not the Hebrew language, invented the most characteristic element in the He-
brew Bible, which is a preference for time over space, hearing over seeing, the word over
the visual image.[1]

Yet the dynamism and movement in Hebrew scripture occurs in bodily language:

One of the most salient characteristics of biblical Hebrew is its extraordinary concrete-
ness, manifested especially in a fondness for images rooted in the human body. ... A good
deal of this concrete biblical language based on the body is what a linguist would call
lexicalized metaphor – imagery, here taken from body parts and bodily functions, that is
made to stand for some general concept as a fixed item in the vocabulary of the language
(as "eye" in English can be used to mean "perceptiveness" or "connoisseur's under-
standing").[2]

Jewish and Christian liturgies involve public readings, communally spoken prayers, characteris-
tic physical artifacts, and specific bodily movements. Jewish and Christian art has long pre-
sented images from scripture.[3] While the visual presentation of the Morgan Bible might seem
superficially inconsistent with the formal qualities of Hebrew scripture, from the beginning a
bodily sense of Hebrew scripture has been central to its meaning.

The sense of Hebrew scripture has not depended predominately on the belief that God wrote
it. A useful model for a sacred text is that God wrote each word of it. But like any scientific
model, the model itself is not reality. One can easily find, in secular communities of meaning
and living, texts that are in effect held to be sacred, but not thought to be written by God.[4] While
parts of Hebrew scripture were probably written more than 3000 years ago, the importance of
Hebrew scripture increased dramatically about 2500 years ago when the Persian king Cyrus de-
feated the Babylonians and gave the Jews the right to return to their homeland after a half-
century exile. For rebuilding Jewish life, certain Hebrew texts were assumed to be relevant,
without mistakes and perfectly consistent with each other, but also cryptic and in need of inter-

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[1] Bloom in Rosenberg and Bloom (1990) p. 287. Economists consider "best-selling" to be a complimentary term,
but they also recognize that meeting demand is key to making sales.

[2] Alter (1996), p. xii. *Id.* notes:

The general predispositions of modern translators is to convert most of this concrete language into more
abstract terms that have the purported advantage of clarity but turn the pungency of the original into stale
paraphrase.

While for thousands of years many Jews have read Hebrew, most Christians, Muslims, and secularists have read
Hebrew scripture in the sort of translation that Alter describes. This is almost certainly the case for those who en-
countered the Morgan Bible.

[3] The discovery in 1932 of numerous figurative wall paintings in the Dura-Europos synagogue, dated c. 245 G.C.,
dramatically changed understanding of Jewish art history. While the literary style of the Christian Gospels differs
dramatically from that of Hebrew scripture, no figurative Christian art from the first two centuries of Christianity
has been found. Christian art started to develop rapidly about 400 G.C.

[4] Fletcher (2001) explores ways in which the United States Constitution of 1789, the French Civil Code of 1804, and
the German Civil Code of 1900 have been treated as sacred texts. Bloom (1998) declares, "Bardology, the worship
of Shakespeare, ought to be even more a secular religion than it already is….After Jesus, Hamlet is the most cited
figure in Western consciousness; no one prays to him, but no one evades him for long either….Overfamiliar yet al-
ways unknown, the enigma of Hamlet is emblematic of the greater enigma of Shakespeare himself: a vision that is
everything and nothing, a person who was (according to Borges) everyone and no one, an art so infinite that it con-
tains us, and will go on enclosing those likely to come after us." Bloom seems here to transfers the Christian con-
cept of the "body of Christ" to Shakespeare or Hamlet (according to Bloom, either one might have created the
other). This gives Shakespearean texts a sense of sacred mysticism.

pretation.[1] Being subject to continual interpretative attention, driven by these assumptions, has been central to the historical sense of a sacred text.[2]

Making sense of scripture has long involved more than just reading words.   Levites, judges, teachers, sages, and scribes have discussed and interpreted Hebrew scripture for as long as it has existed.[3] They have done this not as minds reading but as living human bodies. To see how this works, look at what Eve said to the serpent in the garden:

> *And the woman said to the serpent, "We may eat of the fruit of the trees of the garden, but God said, 'You may not eat of the fruit of the tree which is in the midst of the garden, neither shall you touch it, lest you die.'"[4]*

God did not speak directly to Eve this command that she recounts to the serpent. Before Eve was created, God said to *'adam*:

> *"You may freely eat of every tree in the garden; but of the tree of the knowledge of good and evil you shall not eat, for in the day that you eat of it, you shall die."[5]*

To make sense of what Eve said to the serpent, one might imagine that *'adam* pointed out to Eve "the tree of the knowledge of good and evil," that "tree which is in the midst of the garden," and told her what God said. But why then does Eve report that God spoke of the effects of just touching?

Jewish scholars recognized this question and found ways to answer it. A Greek-speaking Egyptian Jew about 2000 years ago understood in Eve's additional clause two different, and perhaps somewhat inconsistent, relationships among senses:

> *Why, when the command was given not to eat of one particular tree, did the woman include even approaching it closely…? First because taste – and every sense – functions by means of contact. Second, [because] if even touching [the tree] was forbidden, how much greater a crime would those have done who, in addition to touching it, then ate of it and enjoyed it?[6]*

About 800 years later, working within a highly developed Jewish culture, a rabbi found in Eve's additional clause evidence of *'adam*'s failure to honor God's word and the effect of this failure on Eve's sense of truth:

> *Adam did not choose to tell God's words to Eve exactly as they had been spoken. … Whereupon the wicked serpent said to himself, "Since I seem to be unable to trip up Adam, let me go and try to trip up Eve." He went and sat down next to her and started talking to her. He said: "Now you say that God has forbidden us to touch the tree. Well, I can touch the tree and not die, and so can you." What did the wicked serpent then do? He touched the tree with his hands and feet and shook it so hard that some of its fruit fell to the ground…What did Eve think to herself? "All the things my husband has told me are lies"…Whereupon she took the fruit and ate it….[7]*

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[1] Kugel (1997), Chap. 1.

[2] *Id.* Scientific inquiry tends to treat reality as a sacred text in these ways.

[3] Neusner (1998) provides an inspiring guide to the Talmud. Some of my work at the FCC is rather similar to Talmudic study.

[4] Gen. 3:2-2. The biblical translations in this paragraph are from Kugel (1997) pp. 76-7, which also provides the general analysis and sources for this and the subsequent paragraph.

[5] Gen. 2:16-17.

[6] Philo of Alexandria, *Questions and Answers in* Genesis 1:35, from Kugel (1997) p. 77.

[7] Abot de. Rabbi Nathan, as excerpted and trans. in Kugel (1997) p. 77. On Abot de. Rabbi Nathan, see http://www.jewishencyclopedia.com/view.jsp?artid=355&letter=A

This interpretation is full of sensuous awareness: the bodily intimacy of sitting down next to Eve, the serpent touching the tree with his hands and feet, and the fruit falling to the ground. The explanation moves forward with commonplace dialogue, ordinary diction, and natural emotional responses.[1] This interpretation shows the importance of bodily sense in making sense of scripture.

From the beginning, the sense of scripture challenges mere words. In the first chapter of Genesis, the first word that the Hebrew text uses for man is *'adam*, a word which sounds like the Hebrew word for soil, *'dama*. This creates a problem. Within Genesis, how does one interpret the difference between a generic human and a particular male named Adam?[2] A literary scholar recently translated Genesis into English with considerable sensitivity to diction. Regarding the issue of *'adam*, he noted:

> The term *'adam…is a generic term for human beings, not a proper noun. It also does not automatically suggest maleness, especially not without the prefix ben, "son of," and so the traditional rendering "man" is misleading...*[3]

Thus he translated Genesis 2:7 as the creation of the human:

> *the Lord God fashioned the human, humus from the soil, and blew into his nostrils the breath of life, and the human became a living creature.*

God later took a rib from *'adam* ("the human," in this translation) and made it into a woman. When God brought the woman to *'adam* ("the human"), *'adam* ("the human") said "bone of my bones, flesh of my flesh." In Gen. 4:1, *'adam* ("the human") has sex with Eve: "And the human knew Eve his woman and she conceived and bore Cain…." However, in Gen. 4:25, *'adam* ("Adam") has sex with Eve: "And Adam again knew his wife and she bore a son…." Gen. 5:1-5 exemplifies well the challenging sense of *'adam*:

> *This is the book of the lineage of Adam: On the day God created the human, in the image of God He created him. Male and female He created them, and He blessed them and called their name humankind on the day they were created. And Adam lived a hundred and thirty years and begot in his likeness by his image and called his name Seth [genealogy continues]*

In this passage, the same Hebrew word *'adam* has been translated as "Adam," "the human," and "humankind." This outcome does not show lack of linguistic or literary sensitivity in translation.[4] It shows a space in the sense that *'adam* makes.

Genesis stimulates a complex sense that males and females are equal and complementary parts of God's creation of humanity. The motivation for the creation of woman is this:

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[1] Alter (1996), pp. xxi-xxvi, is one of the few works that have considered the stylistic level of Biblical Hebrew. Alter finds (p. xxv): "the language of biblical narrative in its own time was stylized, decorous, and readily identified by its audiences as a language of literature, in certain ways distinct from the language of quotidian reality. The tricky complication, however, is that in most respects it also was not a lofty style, and was certainly neither ornate nor euphemistic." As *infra.* shows, the style of response can differ from the style of the text, and response may not be just a matter of literary style.

[2] To see the extent of this problem, consider the various translations (within and across translations) of different instances of *'adam* in Gen. 2-3. Different, historically important translations, as well as the original Hebrew, are readily available on www.blueletterbible.com

[3] Alter (1996), comment on Gen. 1:26. All subsequent quotations of Genesis in this paragraph are from Alter (1996). Paul, a zealous Jew born about 30 years after Jesus and suddenly convinced in mid-life that Jesus was the Christ, associated Adam with a generic (Greek) term for human being. See 1 Cr 15:45.

[4] Masculinists have pointed out that the submersion of maleness into generic human being has been a dominant aspect of the social construction of public life.

> *And the Lord God said: 'It is not good for the human to be alone. I shall make him a sustainer beside him.'*[1]

The phrase "sustainer beside him" comes from the Hebrew *'ezer kenegdo*.[2] A more historically sensitive, but clumsier, translation of this phrase might be "a power like oneself beside one."[3] This sense of the relationship of male and female, in a text first written about 2900 years ago, may have been an inspired transformation of the relationship between Gilgamesh and Enkidu. The relation between these male characters became increasingly central to a Babylonian epic whose literary evolution can be perceived in remains of written literature about 4075 years old. Starting from a lord-servant relationship in the oldest texts, Gilgamesh and Enkidu underwent a literary evolution made them nearly powers like each other, albeit different in appearances and habits.[4] This latter relation, evident from about 3700 years ago, is developed significantly through Gilgamesh's desolating grief at the death of Enkidu. The literary precedent of Gilgamesh and Enkidu may have helped to inspire the sense in Genesis that male and female are equal and closely related, though not the same.

Additional literary qualities of Genesis re-enforce the unity of woman and man from the beginning. Upon the presentation of the woman, *'adam* responded to her at least in part with speech, the first direct speech recorded from *'adam*:

> *The speech takes the form of verse, a naming poem, in which each of the two lines begins with the feminine indicative pronoun, z'ot, 'this one', which is also the last Hebrew word of the poem, cinching it in a tight envelope structure.*[5]

A slight, conforming alteration of the translation produces:

> *This one at last, bone of my bones, and flesh of my flesh,*
> *This one shall be called Woman, for from man was taken this one.*[6]

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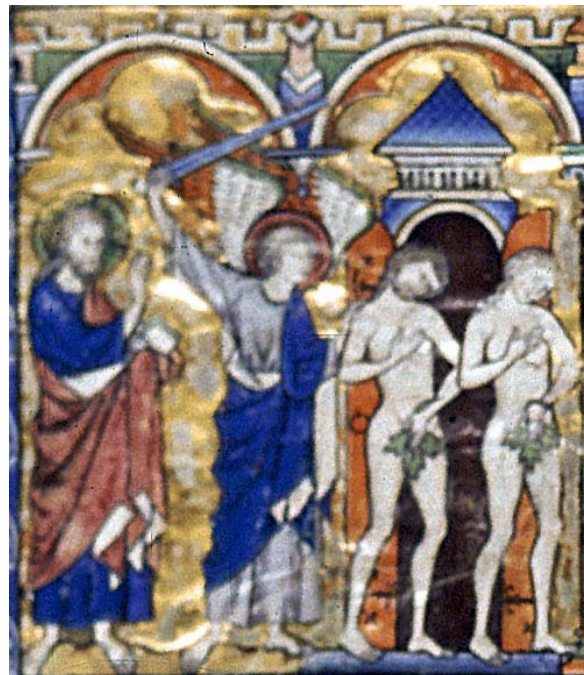
[1] Gen. 2:18, as translated in Alter (1996).

[2] Masculinists have sharply criticized the division, in culture and law, between sustaining (foregrounding female love) and supporting (foregrounding male provision of money). Masculinists consider this construction to dehumanize and commodify males. They would thus object strongly to "sustainer beside him," because it connotes an oppressive division between sustaining and supporting. Perhaps this is just an example of male resentment.

[3] Id. p. 9 n. 18 states "'ezer elsewhere connotes active intervention on behalf of someone, especially in military contexts, as often in Psalms." Moreover, *kenegdo* "means alongside him, opposite him, a counterpart to him." (id.)

[4] In "Gilgamesh and Hawawa A", a Sumerian epic poem that scholars think may have been written about 4075 years ago (Foster (2001) p. 99), Gilgamesh refers to "his servant Enkidu," while Enkidu refers to Gilgamesh as "my lord." Many other aspects of the text support a lord-servant status relation between these two characters. See Douglas Frayne's translation in Foster (2001) pp. 104-15. The Epic of Gilgamesh, written about 3700 years ago (Foster (2001) p. xiii), shows a much different relationship between Gilgamesh and Enkidu. In this text, they are presented as nearly equal in strength, counterpoints in culture, and complements in intimate friendship.

[5] Alter (1996), comment on Gen. 2:23.

[6] Id., Gen 2:23, where I have changed the last clause from "for from man was this one taken."

The Hebrew word here for woman is *ish-shaw.* That word takes sound and linguistic root from *eesh*, the Hebrew word for man, different from *'adam*, that is used subsequently in this verse.

The above analysis has at least three weaknesses. First, late twentieth-century European academic thought clearly animates it. A Jew living in Jerusalem about 2500 years ago, although a human being essentially like us, may not have thought in this way. Second, Genesis is not just an old text; it is a text that many persons have regarded as sacred for a long time. Any analysis that does not fully recognize this fact about the text seems rather narrow-minded.[1] Third, the analysis should recognize that different parts of Genesis seem to have been written at different times. The above account of the creation of woman probably was written about 2900 years ago. Some time later was written Gen. 1:27:

> *And God created the human ['adam] in his image,*
> *In the image of God He created him,*
> *male and female He created them.*[2]

This verse seems to retard for a moment the expanding movement of physical creation in the surrounding text. How might one make sense of its inclusion?[3]

A visual sense of scripture may have helped to inspire that verse. At least since returning from their Babylonian exile, Jews have studied their sacred texts in exquisite detail, with loving care, and using highly developed reasoning. Surely this question arose: when God drove *'adam* out of Eden, where was Eve? Did she remain in Eden for awhile, leaving only when overcome with longing to be with *'adam*?[4] Expulsion from a homeland was an actual experience and a relevant concern for Jews. The sacred text stated that Eve was with *'adam* in Eden, then *'adam* was expelled, and then Eve was with *'adam* outside Eden. Sacred texts are cryptic, but they contain no mistakes. Jews' sense of scripture may have included a sense of Eve and Adam together being expelled from Eden.[5] Gen. 1:27, words that indicate that male and female are equal

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[1] Rosenberg and Bloom (1990) consciously wipes out about 2500 years of readers' sacred senses. This approach provides some insights but also generates many narrow, irrelevant, and lifeless moralisms: "the best and most profound writing" (p. 16), "the greatest and most ironic writer" (p. 26), "one of the handful of truly sublime styles" (p. 27), "the most memorable character" (p. 220), "comparable in imagination and rhetoric only to the greatest Western authors" (p. 274), "one of J's most delicious episodes" (p. 230), "Rachel's finest moment" (p. 215), "one of the most sublime of J's puns", and, to those who feel multiple thrills, "There is only one proper climax." (p. 237). Bloom's popular epithet, "America's greatest literary critic" might be called one of the finest examples of literary justice.

[2] Gen 1:27, as trans. in Alter (1996).

[3] Alter (1981), p 146 considers Genesis to include "an approximate narrative equivalent to the technique of post-Cubist painting which gives us, for example, juxtaposed or superimposed, a profile and frontal perspective of the same face." Historical paintings of creation present a more natural view. The Morgan Bible's creation cycle integrates a single male into its sixth sub-painting, which corresponds to the sixth day of creation. The seventh sub-painting shows the creation of Eve from this male's rib. See Cockerell and Plummer (1969), Morgan Bible, folio 1. The Morgan Bible's depiction of creation draws on the Cotton Genesis family of creation iconography, a popular pictorial narrative that dates back about 1550 years. On the Cotton Genesis family of iconography, see Weitzmann and Kessler (1986).

[4] Alternatively, perhaps she had been happily living there, listening to records of the Lillith Fair rock concert and acting out parts in the Vagina Monologues. But then, getting hungry and realizing that Adam had stolen all the fruit in Eden, she left Eden to bring Adam to justice.

[5] Later non-canonical Jewish religious writings (specifically, versions of the Life of Adam and Eve) explicitly indicate that both Adam and Eve were expelled. See Anderson and Stone (1999) p. 2E. The Qur'an, Sura 2:36, 7:24-25, describes the expulsion from the garden using a plural reference that includes a particular person named Adam, and his wife. In contrast, the Septuagent, a translation of Hebrew scripture into Greek about 2200 years ago, and the Vulgate, a translation of Hebrew scripture in Latin about 1600 years ago, both specify a particular male named

and complementary parts of God's creation, may have been included in scripture to commemorate with additional inspiration this important sense of scripture.[1]

Depictions of the Genesis account of creation show this sense. About 1650 years ago, on the walls of a catacomb under Rome, some Christians painted Eve and Adam together being expelled from Eden.[2] An illuminated manuscript created about 1550 years ago probably showed Eve and Adam together being expelled, while one created with an independent iconographic style about 1450 years ago unquestionably shows Eve and Adam together being expelled.[3] A variety of subsequent works of art over the next 1500 years, including the Morgan Bible of Louis IX, similarly show Eve and Adam together being driven out from Eden. The phrase "Eve and Adam" (in older and less sophisticated discourse, "Adam and Eve"[4]) does not come from the text of the Genesis account of creation. There the existence of a distinctively male person is questionable. "Eve and Adam" indicates the visual sense of male and female together seen in the *'adam* that was expelled from Eden.

Another aspect of the sensuous scope of Hebrew scripture is detailed verbal law that brings a sense of God to a wide range of daily activities. Hebrew scripture includes precepts covering many aspects of eating, clothing, work, and personal relationships. Many of these rules are difficult to understanding as important messages from God or significant elements of some narrative. But these teachings make sense as communication of God's presence. Understanding the precepts in Hebrew scripture is associated with priority for verbal sense:

- *How much do I love Your teaching! I mull over it all day long.*
- *How soothing are Your Words to me, sweeter than honey to my mouth.*
- *Your word lights my steps, and illuminates my nighttime path.*
- *My eyes greet the night watches to study Your words.*[5]

But the point is not just to understand these rules, but to incorporate them in the many relevant activities of daily life:

> *Show me, Lord, the path of your laws so that I may execute them accordingly.*
> *Educate me to keep Your teaching so that I may observe it with my whole heart.*
> *Lead me in the road of Your commandments, for it is my enjoyment.*
> *Make me earnest for Your statutes and not for worldly gain.*[6]

The laws of Hebrew scripture thus connect words to activities with a broad scope of bodily senses. Such integration of sense is a general mechanism that supports sense of presence.

Adam as the subject of expulsion. The King James Bible, a translation into English finished about 400 years ago, specifies the expulsion of "the man." The recent literary translation presented above expels "the human."

[1] The Qur'an,, in Al Nisā' 1, expresses the same understanding: "O mankind! Reverence your Guardian-Lord, who created you from a single person, created, of like nature, his mate…."

[2] Ferrua (1990) Fig. 53.

[3] Weitzmann and Kessler (1986) [Cotton Genesis, created about 1550 years ago] and Mazal (1980) [Vienna Genesis, created about 1450 years ago]. Additional early depictions of the expulsion and discussion of its iconography can been found in Bergman (1980) p. 21; figs. 6, 59, 60, and Kessler (1977) pp. 20-2; 29-31. None of the paintings presented or discussed show the expulsion of a single human. That two humans are shown being expelled has generated no art historical discussion, as far as I can tell.

[4] For examples of this scholarly development, see Trible (1992), Jolly (1997), Goldingay (1998), Kvam, Schearing, and Ziegler (1999).

[5] Excerpts from Psalm 119, as translated in Kugel (1999) pp. 245, 248.

[6] Passage from Psalm 119, id. p. 241.

B. Louis and his Acts

Louis IX is an important figure in French history. When he was crowned King of France in 1226, he was only twelve years old. France then was about one-third of its present size. Powerful French barons threatened the new king, as did foreign powers to the north, south, and east. The financial, judicial, and administrative institutions of the state were weak. Relations with the Roman church and churches in southern France were uncertain and often tense. Blanche of Castile, Louis IX's mother and a shrewd, courageous leader, served as his regent.[1] Through her efforts and those of Louis IX, the French kingship, French territory, and the Church in France became central, closely related components of a strong state.[2] By the time Louis IX died in 1270, he was hailed across Europe as a great king. Louis IX was canonized as a Christian saint in 1297. At least until recent decades, he has been commonly presented in French historical literature as a hero of France.

Understanding Louis's sensuous choices in communications requires empathy for his sense. Purported physical relics of Christianity, which to most persons today are senseless, Louis valued to an extraordinary extent. In 1238, he paid about 50% of his annual royal budget to purchase from the emperor of Constantinople the Crown of Thorns, thought to have been worn by Jesus during his crucifixion.[3] By 1241 Louis had brought to Paris, at great cost, this astonishing array of relics:

- *The towel with which Christ had dried the feet of the apostles at the Last Supper*
- *The iron chain with which he had been constrained at his trial*
- *The cloak which had been placed on his shoulders*
- *The reed scepter put into his hands*
- *The Crown of Thorns*
- *A towel with Christ's image upon it; the image of Edessa, later known as Veronica's Towel*
- *Two pieces of the True Cross*
- *A triumphal cross carried by the Byzantine emperors into battle, which must have contained another fragment of the True Cross*
- *The Precious Blood [of Christ]*
- *The sponge with which Christ had been offered vinegar while on the cross*
- *Iron from the Holy Lance that had pierced his side at the crucifixion*
- *Part of the shroud with which he had been buried*
- *A large stone from the Holy Sepulchre*
- *Moses' rod*

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[1] She remained a major force in Louis IX's government through to her death in 1252. So well did she and Louis IX work together that history has not clearly recorded the date at which her regency ended.

[2] In the long term, this melding of the institutions of religion and the state led to persons attaching relatively little importance to religion. A survey conducted in 2002 found that only 11% of adults in France consider religion to be very important personally. In contrast, the U.S. has a political history that, for the most part, has emphasized religious freedom and government action that supports diverse religious institutions with a common commitment to peaceful public life. In the U.S., 59% of persons currently consider religion to be very important personally. In Brazil, India, Indonesia, and Nigeria, the percent of persons who consider religion to be very important personally are 77%, 92%, 95%, and 92%, respectively. Persons in the U.S. stand distinctively with poor persons around the world in considering religion to be very important personally. The data cited here are from a recent Pew survey, described at http://people-press.org/reports/display.php3?ReportID=167

[3] Riley-Smith (2002) p. 76.

- *Christ's swaddling clothes*
- *Blood shed from an icon of Christ when insulted by infidels*
- *The milk of the Blessed Virgin Mary*
- *Part of a veil that had belonged to her*
- *The upper part of the head of Saint John the Baptist*
- *The heads of Saints Blaise, Clement, and Symeon[1]*

While these relics served as instruments for enhancing Louis's royal authority, they also are evidence of Louis's sense. He personally, bare-footed, carried the Crown of Thorns into Paris. He kept relics in lavish, jewel-encrusted cases, frequently attended their public display, and sought to be near to them in difficult situations. Most significantly, he gave fragments of relics as great gifts to a wide range of persons and institutions.[2]

Louis violated contemporary conventions in the way he communicated. According to a generally reliable memoir, Louis reproached his son, a King, and a steward thus:

> *My Lord the King called my Lord Philip, his son and father of our present King, and King Thibaut; he sat down by the door of his oratory, and placing his hand on the ground he said, "Sit down here, close by me, so that we may not be overhead." "Indeed, sir," they answered, "we should not be so bold as to sit so close to you." He said to me also, "Come, Seneschal, sit down here." I did so, and I sat so close to him that my gown was touching his. Then he made them sit down, too, after me, and said to them, "Indeed, you have been very wrong; for you are my sons, and yet you have not immediately done all that I asked you. You must see to it that such a thing never happens again with you."[3]*

The formality of "My Lord the King" contrasts sharply with the King's gesture and invitation, "Sit down here, close by me," especially in the context of a reprimand. The physical closeness clearly disturbed the other parties. Yet that closeness seems to have been part of the way that Louis communicated.

Other evidence indicates that Louis enjoyed dispensing with mediators and directly encountering his subjects. Consider a contemporary account of the celebrated story of the King administering justice under the oak of Vincennes:

> *Often in the summer he went after Mass to the woods of Vincennes and sat down with his back against an oak tree, and made us sit all around him. Everyone who had an affair to settle could come and speak to him without the interference of any usher or other official. The King would speak himself and ask, "Is there any one here who has a case to settle?"[4]*

As an insightful scholar has pointed out, "ushers had good honest work to do." Ushers prevented "silly people from presenting sillier petitions to the king."[5] More generally, screening, process-

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[1] Id.

[2] Id. pp. 76-78, Jordan (1979) pp. 193-5, Figs. 4-5.

[3] Hague (1955) p. 31, translation of John of Joinville's account. Joinville went on Louis's first crusade, stayed with him in the difficult times in Acre, and became his close friend. Jordan (1988), p. 210, ft. 3, prefers this translation as "most literal," and warns that Margaret Shaw's translation, in *Joinville and Villehardouin*, is more fluid but profoundly distorts the meaning.

[4] Hague (1955) pp. 37-8.

[5] Jordan (1988) p. 214. Jordan adds:

> One is reminded of G.O. Sayles's description of the enormous number of petitions that Englishmen and women wanted to bring their king, ill-written and in Sayles's words so odd "that they must have come from the mentally disordered." [internal footnotes omitted].

Footnote continued on next page.

ing, and prioritizing requests is important bureaucratic work.[1] In sitting down informally with his back against the oak and dispensing with bureaucracy, Louis was not efficiently administering justice. He was enjoying a much less refined sense of being king.

Louis preferred the company of monks and mendicants to the company of officials from the leading hierarchical churches. Louis and his mother founded the large abbey at Royaumont in 1228. While earlier French rules endowed masses at the Cathedral of Notre Dame and had family members buried in the Cathedral, Louis did not.[2] He supported masses at the abbey of Royaumont, enjoyed attending dinners at the abbey, and had children buried there. Louis founded several new mendicant houses about 1248, even though mendicant orders in France had already expanded rapidly in the 1230s.[3] A friar who encountered Louis during Louis's tour of his realm in 1248 observed:

> *he turned aside from his way frequently to visit hermitages of the Friars Minor and other religious orders here and there, on the right and on the left, in order to seek their prayers. ...*
>
> *[one day in Vezelay] the king left his entire retinue at the castle which was only a short distance from the convent, bringing with him only his three brothers and servants who took care of the horses. After he had genuflected and worshipped before the alter, the Brothers set out benches for them all to sit on, but the king sat on the ground in the dust (for the church was not paved), as I saw with my own eyes. And he called to us, saying, "Come to me, my dearest brothers, and hear my words." So we made a circle around him on the ground, and his brothers did likewise. And the king besought the prayers and spiritual support of the Brothers, as I have described above.[4]*

That the king "sat on the ground in the dust" clearly amazed the friar. This action shows Louis identifying with the brothers in a full, physical sense.

Several vignettes from Louis's life show him choosing, instead of words, dramatic physical expression. When a gale drove his ship hard aground off the island of Cyprus, Louis "leapt out of bed barefoot" and "dressed only in his tunic, nothing more, stretched himself out on the deck in the form of a cross before the body of Our Lord...."[5] When captured in Egypt, he would lay down in front of his lodgings in the position of Jesus on the cross.[6] These actions are more than a ritual acting out of the Christian story. They show Louis making sense of that story through his own physical experience.

Louis was deeply anti-Semitic. One of the knights who accompanied Louis on his first crusade later recounted a story about a debate with Jews. According to the story, after the clergy had debated the Jews, a poor knight, "leaning on his crutch, got up and asked "but one question"": does the leading Jewish teacher believe that the Virgin Mary is the Mother of God? When the

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FCC staff members process a large number of petitions, complaints, waiver requests, etc. Many of these are publicly accessible at http://www.fcc.gov/cgb/ecfs/   In recent years, parties have been making an increasing number of appeals directly to FCC commissioners.

[1] Such work, done by hard-working, public-spirited bureaucrats, has often been greatly under-appreciated.

[2] Gaposchkin (2000) pp. 65-6. Gaposchkin analyzes the iconography of the Porte Rouge of Notre-Dame in terms of Louis's preference for monks and mendicants over church officials. She emphasizes the political significance of this preference, which undoubtedly was one important aspect of it.

[3] Id. and Jordan (1979) pp. 54-5. See also Jordan (1979) pp. 129, 184-89.

[4] Baird et. at. (1986) pp. 215-16 [trans. of the chronicle of Salimbene de Adam].

[5] Hague (1955) p. 32.

[6] Id. p. 116.

Jew answered that he did not, the knight with his crutch struck the Jew "on the side of his head, felling him to ground."   Then:

> *The Jews all fled, taking with them their wounded master; and that was the end of the debate.*[1]

Vicious anti-Semiticism, tragically mis-lived Christianity, and a pathetic, demeaning, and self-destructive concept of masculinity have unfortunately been major features of European history. This story, probably recounted among knights on Louis's crusade, is a stunningly realistic romancing of these sad problems. Louis is reported to have reacted to the story thus:

> *"I agree myself," said the King, "that no one who is not a very learned clerk should argue with them. A layman, as soon as he hears the Christian faith maligned, should defend it only by the sword, with a good thrust to the belly, as far as the sword will go."*[2]

This note of mindless masculinity is consistent with the tone of the story as a whole. In addition to being anti-Semitic, Louis also seems to have suffered from male anxiety about thinking and thinkers.[3] Even if this story is essentially a report of male banter, which it seems to be, it accurately represents Louis's sense of the world and the way he acted.

   Louis's decision to mount a crusade to Jerusalem indicates how highly he valued action. Louis "took the cross," i.e. decided to go on crusade, when he was seriously ill:

> *so near to dying that one of the two ladies who were tending him wanted to draw the sheet over his face, maintaining that he was dead. ...although up till then he had not been able to utter a word he now recovered his speech. As soon as he was able to speak he asked for the cross to be given him; and this was promptly done.*[4]

Later Louis's mother and court officials urge him not to go on crusade, an activity that by then many regarded to be foolish. They offered him the excuse that he had made his vow when he was very sick and not in good sense. Meeting his Bishop, Louis ripped the cross from his shoulder, gave it to the Bishop, and then said:

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[1] Id. p. 35-6.

[2] Id. This seems to have been a recognized rhetorical figure. Dante, intellectually sparring in writing with a generic "adversary," wrote: "To an opinion so grossly stupid,…the reply should be given not verbally but with a knife!" See Dante, Convivio (c. 1297), Bk. IV, Ch. XIV, para. 11, trans in Ryan (1989) p. 159.

[3] On Louis's anti-Semiticsm, see also Jordan (1989) pp. 128-41 and Jordan (1979) pp. 84-6, 155-7.

[4] Hague (1955) p. 51.

I am not now deprived of my reason or senses, nor am I powerless or infirm. Now I demand back my cross.[1]

When Louis first recovered the power of speech, he might have called out his presence to his mother or thanks to God. He might have asked for something to eat or drink, particularly since intravenous feeding had not yet been invented. Asking for the cross when he first covered the power of speech, and then his dramatic gesture of asking for it again, suggests that, for Louis, action was the most significant communication.[2]

The written exchange between Louis and al-Malik as-Salih, the sultan of Egypt, indicates well Louis's sense of his actions. Louis, on crusade, landed his army in 1249 on the coast of Egypt and confronted the sultan's army. Louis wrote to the sultan:

the Moslem community of Andalusia pays tribute to us and gives us gifts, and we drive them before us like a herd of cattle, killing the men, widowing the women, capturing their daughters and infants, emptying their houses. ... If this country falls into my hands, it will be mine as a gift. If you keep it by victory over me, you may do as you will with me. I have told you about the armies obedient to me, filling the mountains and the plains, numerous as the stones of the earth and poised against you like the sword of destiny.[3]

The sultan wrote back to Louis:

Fool! If your eyes had seen the points of our swords and the enormity of our devastations, the forts and shores that we have taken and the lands that we have sacked in the past and the present, you would gnaw your fingers in repentance! The outcome of the events you are precipitating is inevitable: the day will dawn to our advantage and end in your destruction. Then you will curse yourself: 'and the wicked shall know the fate that awaits them.'[4]

Both leaders boasted of the violence that they had done. Both used passive constructions in anticipating their own success in the upcoming battle. The sultan's construction indicates the overall order of the world, while Louis's passive voice suggests a personal relationship in the reception of a gift. In the event of Louis's loss, the sultan foresaw Louis cursing himself. Louis, in contrast, referred to what the Sultan might do to him.[5] Brightly shining points of swords, gnawing of fingers, and the dawning of the day are rhetorical figures from Islamic romances.[6] Louis, in contrast, wrote himself into a mash of figures from Hebrew scripture.[7]

Louis eventually lost. Many of his knights were killed, and he himself was captured. But his captors treated him relatively humanely, and he was ransomed for a large sum. Louis sought penance in the way he lived the rest of his life:

Penance implies both punishment and absolution. The punishments came in several forms. The acceptance of flagellation, in the tradition of the martyrs, and in remem-

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[1] Vaughan (1993) p. 51 [chronicle of Matthew Paris], quoted in Weiss (1998) p. 2.

[2] This sense is further emphasized in the sentence that follows Louis's demand to be given back his cross. Louis said, "He who ignores nothing knows that nothing edible will enter my mouth until I have again signed myself with it." *Id.*

[3] Gabrieli (1969) [Maqrizi's history] p. 300-1, quoted in Weiss (1998) p. 81. *Id.* p. 300 ft. 3 notes the view that Maqrizi inserted the second sentence into Louis's original letter. The stylistic unity discussed *infra.* supports the alternative view, also discussed *id.*, that the sentence is original.

[4] Id. p. 301. The quotation at the end of the passage is from the Qur'an 26: 228.

[5] These differences correspond to differences in emphasis in Islam and Christianity. Nonetheless, Jews, Christians, and Muslims worship the same one Abrahamic God.

[6] See the text of the Hamzanama of Akbar (Thackston (2002)) and Hanaway (1970).

[7] Cf. Deut. 20:10-14, Gen 13: 14-17, Num. 31: 7-11, Josh. 11:14-17, Hos. 1:10.

brance of the failure of 1250 [his first crusade], was one of these. There was also the touching – the insistent touching – of the ugly, the diseased, the filthy, which revolted his friends. It started in Palestine when he insisted on burying with his own hands the corpses of fallen crusaders and refused to hold his nose when he had to touch their putrid bodies. ... After the crusade he laid it down as an ordinance that wherever he sojourned the right of the lepers to share his table would be observed.[1]

Other popular means of penance were saying prayers, receiving sacraments, founding religious institutions, and giving money to existing ones. Louis also sought penance in these ways. Yet his insistent quest for penance in unconventionally sensuous ways, which greatly displeased his court, his wife, and his friends, is consistent with the unusual sense that he showed throughout his life.[2] Louis's unusual sense helps to explain the extraordinary form of the Morgan Bible.

C. Sensuous Choices in the Morgan Bible

The sensuous choices in the Morgan Bible encompass the viewer in continuous action. As first created, the Morgan Bible consisted of large paintings on least forty-eight folios bound together to form a book containing no written words.[3] Unlike most thirteenth century manuscripts, the Morgan Bible has paintings on both the front and back of each folio.[4] The sizes of the pages and painted areas are much larger than those in most thirteenth-century manuscripts.[5] The Morgan

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[1] Jordan (1979) p. 127-8.

[2] Id. p. 129, Jordan (1988) pp. 214-16. While Louis was in Palestine after the Muslims in Egypt had utterly defeated Louis's army, he heard about a Muslim sultan who had compiled a great library. When Louis returned, he built a library and began collecting books. Riley-Smith (2002) pp. 79-80. Louis was not hostile to learning from books, especially after being defeated in his first crusade.   But, as described *infra.*, he greatly favored richer sensory stimuli.

[3] Traces of a Persian foliation with numbers 46, 47, and 48 remain on folios 3v, 2v, and 1v. Voelkle (1999) p. 251. The manuscript may have originally contained an additional gathering (6 folios) to conclude the story more normally. Weiss (1999) p. 225. Most scholars believe that the Morgan Bible was designed as a picture book (id. p. 226). The style of the Latin inscriptions, and numerous mistakes in describing pictured biblical episodes, provides strong support for this view. Noel (2002) pp. 109-113.

[4] Often manuscripts with consecutive sequences of paintings had paintings only on one side of a folio, arranged to create alternating openings of paintings and blank pages. This is the case for important picture bibles of the twelfth and thirteenth centuries: the Manchester Picture Bible (Rylands MS French 5), the Huth Bible (Art Institute of Chicago, MS 1915.533); and the Hague Bible Picture Book (S 76 F.5). Hull (1995) pp. 4, 8-10 cites several other instances. It's also true for the Leiden Psalter (Bibl. Rijksuniversiteit MS last. 76A); the St. Louis Psalter (BN MS. Lat. 10525); the Psalter of Blanche de Castile; and the Bibles Moralisées. Maekawa (2000) p. 39 calls this pattern typical of Parisian manuscripts from the first half of the thirteenth century.

[5] Mann (2002) p. 41. The pages of the Morgan Bible currently measure about 390 x 300 mm, with a painted rectangle of about 270 x 230 mm. Fleck and Leson (2002) p. 144. Missing portions of Latin inscriptions and illuminations indicate that the folios have been trimmed along the top and outer edge. Mann (2002) p. 58, n. 14 uses the size of the bottom margin to estimate an original page size of 432 x 305 mm. However, the folios were trimmed in their horizontal dimension at least 12mm (see 21v, 41v). Horizontal trimming proportional to the Mann (2002) estimate of vertical trimming implies an original folio size of 432 x 332 mm.   Such a page dimension gives an outer side white space about equal to the top and bottom white spaces. While the aspect ratio of such a folio (1.30) is slightly less than what is considered the standard for medieval book production ($\sqrt{2}$ or approx. 1.41), other contemporary manuscripts have nearly this size or smaller aspect ratios. See, e.g. Fleck and Leson (2002) cat. 10, 25, 8, 4, 26, and 9. Two other manuscripts considered to have been made for Louis IX after his return from his first crusade, the St. Louis Psalter (Latin 10525) and the Arsenal Old Testament (Bib. Arsenal MS 5211), have dimensions 210 x 150 mm and 285 x 202 mm, respectively. The Morgan Bible has a page area much larger than both these manuscripts. The Morgan Bible is larger than 16 out of the 18 11'th-13'th century manuscripts displayed for comparison in Fleck

Bible typically divides the painted area into four rectangular sub-areas. Action often involves motion across the whole upper or lower register, and forms occasionally push beyond the overall rectangular boundaries of the painted area.[1] Event relationships sometimes flow across page turns. The paintings in the Morgan Bible do not illustrate words, nor are they organized to aid discussion of scripture. They immerse the viewer in action.

Bibles Moralisées produced in Paris in the 1230s have important material links with the Morgan Bible. Commonly known as *Toledo* and *Oxford-Paris-London,* these bibles, along with two earlier ones, have nearly the same original page and painted area dimensions as the Morgan Bible.[2] Moreover, most of the illustrations in *Toledo* and *Oxford-Paris-London* correspond exactly.[3] A workshop template seems to have been pressure-traced to create underdrawings for these works.[4] The Morgan Bible also includes nearly exact copies of figures incorporated within larger and varied compositions.[5] A labor-saving production technology used for the Bibles Moralisées seems to have been applied with more artistic license and sophistication in producing the Morgan Bible.

The Bibles Moralisées, however, evoke a much different sense than the Morgan Bible. The Bibles Moralisées include on each page eight small illustrations with circular boundaries, each with a corresponding text or gloss covering an area about one-third the size of the illustration.[6] The illustrations and text boxes on each page are grouped in pairs, where the second provides an interpretation or contemporary application ("moralization") of the first. Action does not flow visually from one illustration to another. Moreover, the Bibles Moralisées intersperse blank openings between openings to painted pages. In turning pages, a viewer thus encounters alternations of paintings and blanks, which might have provided a pattern for viewing and discussion.[7] The pages as a whole have a standardized, discrete pattern that makes them like a more lavish form of text.

Louis IX surely would have preferred the sense of the Morgan Bible to that of a Bible Moralisée. A plausible creation account for the *Toledo* and the *Oxford-Paris-London* Bibles Moralisées is that Blanche of Castile, Louis IX's mother, directed them to be produced as wedding gifts for Louis IX and Margaret of Provence, who were married in 1234.[8] Like many gifts, the gift of a Bible Moralisée to Louis IX may have been closer to the sensibility of the giver than to

and Leson (2002). A typical book today has dimensions about 205 x 130 mm (Esposito (2003) p. 1). The Morgan Bible is more than twice as large as a typical book today.

[1] E.g. folio 24v, 28v.

[2] Lowden (2000) argues that four Bibles Moralisées were produced in Paris in the 1220s and 1230 (*Vienna 2554* and then *Vienna 1179* in 1220s, and *Toledo* together with *Oxford-London-Paris* in the 1230s). He estimates the original page dimensions of these books to have been about 430 x 310 mm (id. vol I. pp. 12-13, 100-1, 143, 146, 147). The Morgan Bible's original page dimensions may have been about 430 x 330 mm (see note above). The text/picture area in these four Bibles Moralisées is about 290 x 210 mm, with variations of about 5mm around these dimensions in the latter two Bibles Moralisées (id. pp. 118, 152). The picture areas in the Morgan Bible measure about 270 x 230 mm. The picture layout in the Bibles Moralisées, compared to that in the Morgan Bible, favors a greater aspect ratio for the painted area.

[3] Id. p. 180.

[4] Id. pp. 167-80.

[5] Mann (2002) pp. 53-5.

[6] The texts/illustrations are stacked in two columns of four.

[7] Lowden (2000) vol. I p 13. Id. p. 209 suggests that the Bibles Moralisées were designed to stimulate discussion.

[8] Id. p. 201.

that of the recipient.[1] Louis IX, with his sense of physical expression and lived meaning, would not relish a book that structured meaning as texts and images in representational correspondence. The Morgan Bible is what Louis IX would have commanded for himself. The Morgan Bible does not encode scripture's meaning into standard, discrete visual forms. The Morgan Bible presents scripture as a flow of action.

The Morgan Bible makes sense as a means for Louis IX to re-enforce his sense of Hebrew scripture in preparation for his first crusade. From his first decision in 1244 to go on crusade, to his sailing from France in 1248, Louis prepared extensively.[2] Part of this preparation was spiritual. As in most medieval manuscripts, including the Bibles Moralisées, paintings in the Morgan Bible depicts objects, clothing, and actions not as in biblical Israel, but as in thirteenth century France.[3] More distinctively, the Morgan Bible emphasizes the life of kings, particularly Saul and David. The Morgan Bible uniquely includes twenty-one large battle scenes of detailed, brutal action. Louis IX could have easily seen himself on his crusade within these scenes.

Scenes in the Morgan Bible are generally arranged so as to emphasize cause and effect of righteous and unrighteous action. A lower register pairs Cain killing Abel and Lamech killing Cain, then a page turn leads to Noah building an ark and saving his family from the flood.[4] Abraham preparing to put Isaac to the sword is depicted before Abraham defeats the Elamites to rescue Lot's family.[5] This deviation from the scriptural order strengthens a sense of God redirecting Abraham's sword to carry out just action.   The inhospitality of the Sodomites on the bottom right of one page leads to the destruction of Sodom on the top left of the facing page.[6] There is no image of Abraham pleading with God for mercy for Sodom. The lower register of another page has Abimelech slaying his brethren placed to the right of Jephthah sacrificing his daughter. This pictorial re-arrangement of the scriptural order establishes a visual contrast between righteous and unrighteous killing.[7] The top of the facing page then shows Abimelech dying in battle. Thus the Morgan Bible links the story of Jepththah with the story of Abimelech through a visual rhythm of cause and effect of righteous and unrighteous action.[8]

The paintings in the Morgan Bible, both in their selection and composition, tend to simplify the psychological complexity of Hebrew scripture. There are no paintings of the story of Hagar, Sarai, and Abram, the story of Dinah and Shechem, or the story of Tamar and Judah.[9] The story

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[1] Blanche of Castile may have earlier ordered a Bible Moralisée, Vienna, ÖNB Codex 1179, for her husband, Louis VIII. See Lowden (2000) vol. I p. 201. Perhaps that was a cherished gift.

[2] Jordan (2002) p. 101, Jordan (1979) pp. 51-63, 105-10.

[3] Holbert (2002).

[4] Folio 2r. Lamech killing Cain is an extra-scriptural interpretive tradition. Cf. Gen. 4: 23-4.

[5] Folio 3.

[6] Folios 3v, 4r.

[7] Folio 13v. Weiss (2002) p. 31. Cf. Maekawa (2000) pp. 45-6.

[8] In depicting this as a master logic, the Morgan Bible shows a more assertive sense of Hebrew scripture than does the St. Louis Psalter. The St. Louis Psalter, which was produced after Louis IX's first crusade, presents episodes more separated in space and meaning. Maekawa (2000) pp. 42-50.

[9] For these stories, see Gen. 16, 34, and 38, respectively. The second story has been called for centuries "the rape of Dinah." Alter (1996) translates Gen. 34:2 as "[Shechem] took her [Dinah] and lay with her and debased her." Id. p. 189, ft. 2 notes that the form of the Hebrew here "may denote rape." Then comes an oddly conclusive statement (id. p. 190, ft. 3): "The psychology of this rapist is precisely the opposite of Ammon's in 2 Samuel 13, who, after having consummated his lust for his sister by raping her, despises her." Kugel (1997) pp. 233-44 repeatedly refers to the story of Dinah and Shechem as rape and notes that the language used in Gen. 34:2 is the same as that used in *Deut.* 22:28-29. Most scholars today understand rape in terms of violence done to a person and lack of freely given consent to sex. *Deut.* 22:28-29, particularly in the punishment described, does not seem to relate to rape as currently

of Balaam and his ass is omitted, along with all of Israel's forty years of grumbling and wandering in the desert. The story of the Levite and his concubine has been simplified into a romance of retribution for evil. That the men of Gibeah, or "certain sons of Belial," sought the Levite, who to save himself pushed his concubine out into a gang rape that resulted in her death, is not captured in the corresponding painting.[1] The great difficulties in bringing to justice the perpetrators, whom their own tribe vigorously defended, are replaced by just one battle scene showing the defeat of a city.[2] In contrast, paintings with an area equivalent to four pages depict a sequence beginning with a large, jeering Goliath challenging the Israeli army and ending with David parading Goliath's head before singing and dancing women of Israeli.[3] Other battle scenes include warriors wielding swords labeled with names from romantic legends and one man

smiling while bleeding from the wound of a dagger embedded between his eyes.[4]

   While the Morgan Bible shows a narrower range of psychological concerns and a simpler, more regular logic of action than Hebrew scripture, its paintings concerning Hannah, Penninah, and Elkanah illustrate how artfully and subtly it evokes its particular sense.[5] In the upper left sub-block of folio 19v, Elkanah, sitting in an iconographic position of God, simultaneously

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understood. A striking aspect of Gen. 34 is the total absence of Dinah's perspective. This contrasts sharply with the presentation of Tamar in the story of Tamar and Judah (Gen. 38). The story of Tamar and Judah teaches about a woman who is intelligent, resourceful, and not afraid to challenge conventions. Given the importance of the issue of rape to men and women today (see Bal (1988) chap. 2), readers might ponder what the silence of Dinah in Gen. 34 implies about her perspective on what happened.

[1] Judges 19:22-8; folio 16r, upper register, right side.

[2] Judges 20; folio 16v, lower register.

[3] Folio 27r, upper register, to folio 29r, upper register.

[4] Mann (2002) p. 55-6 discusses the relationship to French romances, including the *Song of Roland*. For paintings included named swords, see e.g. folio 34v. A smiling, stabbed figure appears in folio 34v, top register.

[5] Another indication of Morgan Bible's artistic sophistication is its paintings of the nature and effects of tension between a King and powerful intimates – King Saul and his son-in-law David, and King David and his son Absalom. See Weiss (2002) p. 31.

hands a small portion to Hannah and a larger portion to Penninah. On the upper right Hannah prays in the temple before a priest. Observers have struggled to make sense of the scene on the lower left for centuries. A scribe in the first half of the fourteenth century wrote under this sub-block, "How Elkanah returns home with his wives and children."[1] Early in the twentieth century a scholar associated this scene with the text from 1 Samuel 1:19: "And they rose up in the morning early, and worshiped before the LORD, and returned, and came to their house at Ramah…."[2] Recently another scholar questioned:

> *Why then is there no morning, no worshipping, and no house? Why does Elkanah have his hand raised in speech? Why are Penninah's children eating on route? And why does Hannah look so sad, when after her blessing from Eli "her countenance was no longer sad?"*[3]

An answer, consistent with the intended sense of the Morgan Bible, is that this scene shows Elkanah preaching the beatitudes to his wives – blessed are the poor, blessed are they that morn, blessed are the hungry, blessed are those who are hated.[4] In this scene Hannah looks to the right into the next scene that shows her lovingly cradling her new-born son.[5] The movement from Hannah's humble position on the upper left to her joy with a son on the lower right shows God acting on behalf of the righteous, where the sense of Hannah here is as a figure of Mary, the mother of Jesus.[6]

Not including text in the Morgan Bible was a significant decision. Painted images in Christian religious books were common from at least the fifth century.[7] In these illustrated or illuminated manuscripts, images almost always function as supplements to text.[8] No material Christian art from the first two centuries of Christianity exists, while there is much textual evidence from that period of Christian polemics against non-Christians' religious art.[9] In the second half of the eighth century, the use of images and figurative artifacts in Christian worship were matters of intense controversy.[10] Substituting study of a book of paintings for study of Hebrew scripture

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[1] Latin inscription, trans. from Lupu (1999) p. 311. As Noel (2002) p. 119 notes, there is no Persian or Judeo-Persian inscription for this sub-area. This absence may indicate the difficulty that others have had in making sense of it.

[2] Sydney Cockerell made this association in his descriptions of the miniatures in a book published in 1927. These descriptions have been republished in Cockerell and Plummer (1969) and Weiss (1999).

[3] Noel (2002) p. 119.

[4] Matthew 5:3-12, Luke 6:20-38. The painting places about Penninah four children, while Hannah is alone, disconnected from them.

[5] Maekawa (2000) p. 92 calls this lower register a "rare depiction of a psychological relationship between scenes separated by frames…."

[6] Hannah refers to herself as a handmaiden of the Lord (1 Samuel 1:11, 16, 19; cf. Luke 1:38) and sings a song similar to that of Mary (1 Samuel 2:1-10; cf. Luke 1:46-55). On the other hand, the Lord has shut up Hannah's womb (1 Samuel 1:5), and she seemed not to have appreciated Elkanah's love for her as a person, rather than as a bearer of children (1 Samuel 1:8). Moreover, the priest seems to suggest that Hannah has a drinking problem (1 Samuel 1:13-14). The upper right and lower left scenes in the Morgan Bible are important in asserting the righteousness of Hannah and thus the logic of the depicted action.

[7] The Cotton Genesis is a fifth-century illuminated manuscript. For a reconstruction and study of that manuscript, see Weitzmann and Kessler (1986).

[8] Hull (1995) pp. 11, 13, 20.

[9] Finney (1994).

[10] While the conflict over the proper role of icons occurred in Byzantium, Charlemagne's theologians forcefully expressed their views in arguments set out in length in the *Libri Carolini*. For a brief review, see Aston (1988) pp. 47-50.

might have created some unease among pious Christians, at least through the first millennium of Christianity. Paintings in biblical manuscripts increased sharply in size and number in the twelfth and thirteenth centuries, and at least ten Bible picture books were produced in this period.[1] Nonetheless, medieval Bible picture books are relatively rare. Bible picture books that, like the Morgan Bible, originally included no words whatsoever, are even rarer.[2]

Interpreting Hebrew scripture has long been a source of concern and controversy. Although oral aspects of God's revelation are important to Christianity and Islam, throughout their history some Christian and Muslim figures have attacked rabbinic interpretations of the Torah as not faithful to the text of Hebrew scripture.[3] Communities of Jews known as Karaites, who flourished in Spain between the eleventh and fourteenth centuries, also strongly attacked the oral traditions of rabbis.[4] Such criticism is endemic to all scriptural religions. In vital, peaceful societies, controversies over interpretation usually create beneficial interpretive tension that flourishes within the bounds of dialogue, a search for truth, and respect for personal freedom.[5]

Louis IX, however, sanctioned the burning of the Talmud in Paris in 1242. In circumstances of increasing controversy over the literal sense of Hebrew scripture and increasing hostility of the Christian Church toward Jews, Pope Gregory IX in 1239 instructed the King of Portugal and archbishops throughout France to confiscate all the Jews' books and give them to the Dominican and Franciscan friars.[6] Another letter from the Pope instructed Paris church officials to have Jews living west of the Holy Roman empire give up their books, which were to be burned if they were found to contain errors.[7] Only in France were Jewish books confiscated. Church and royal officials confiscated the Talmud, treasured rabbinic writings on law and Hebrew scripture. The Talmud was put on trial in Paris before royal and church officials, and condemned. In Paris in 1242, many volumes of the Talmud – perhaps twenty-four cart-loads of manuscripts, ten or twelve thousand volumes – were burned.[8] This vicious action might be taken to mean that Louis IX's anti-Semitism included an extraordinary desire to destroy, among senses of Hebrew scrip-

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[1] Hull (1995) p. 3 defines a Bible picture book as a "manuscript in which scriptural and hagiographical stories are relayed primarily by means of pictures rather by text." Maekawa (2000) pp. 205-7 lists ten picture books produced in the twelfth and thirteenth centuries.

[2] Many of the picture books, id., include short captions or textual descriptions. Hull (1995) pp. 12-14, 18 provides evidence that paintings often preceded text in the production of picture books, as they did in Bibles Moralisées. Whether particular picture books were originally presented as finished without containing any text is not clear.

[3] Rosenthal (1956) pp. 62-4. Cf. Cohen (1999) p. 328.

[4] Rosenthal (1956) pp. 64-7 calls the Karaite literature "[t]he greatest source of anti-tulmudic charges and attacks."

[5] Jewish scholars have long and fruitfully discussed how God gave the law to the Israelites. See Kugel (1997) pp. 400-7. Despite past tragedies, Catholic and Protestants recently seem to be able to discuss in a mutually enriching way points of tension over fidelity to written scripture. Muslims' discussions of the interpretation of the Qur'an, and the status of the Sunnah and other hadith might develop likewise. On the other hand, discussions in academic literary criticism and related fields have become increasingly violent. A fundamentalist zeal for the original written text permeates Rosenberg and Bloom (1990). Nonetheless, physical violence seems unlikely to emerge among chair-bound academics.

[6] Grayzel (1966) doc. 96, p. 241 ["to the archbishops throughout the Kingdom of France," dated June 9, 1239]; doc. 97 p. 243 ["to the King of Portugal," dated June 20, 1239].

[7] Id. doc. 98 p. 243 ["to the Bishop, and to the Prior of the Dominicans, and the Minister of the Franciscan Friars, in Paris," dated June 20 1239]. Of docs. 96-8, this is the only one that gives instructions to burn books.

[8] Cohen (1982) p. 63-4, ft. 23. This hateful action was unfortunately repeated subsequently in Paris and in other places. Jordan (1989) p. 139 notes, "Partly as a result of this and later burnings, only one full copy of the Talmud has survived from the Middle Ages."

ture, those that were "not included among the sacred books…unwritten prattle derived from the outside."[1]

The Morgan Bible, and to a lesser extent the Bibles Moralisées, show that Louis IX cared little about literal fidelity to Hebrew scripture. By presenting Hebrew scripture without any text, the Morgan Bible swept away tension between verbal interpretation and literal scripture. Instead, images of action in the Morgan Bible background the word of scripture and emphasize showing what will be done. The Bibles Moralisées produced earlier in Paris also indicate non-literal interpretive authority by providing corresponding visual and textual moralizations for every scene of scripture. Moreover, the texts in the Bibles Moralisées show little regard for literal fidelity to scripture or to learned traditions of interpretation.[2] If the church and royal court of Louis IX had cared about limiting the sense of scripture solely to the text of the written law, the Bibles Moralisées and the Morgan Bible might have burned along with the Talmud.

The Morgan Bible was designed to serve Louis IX's personal sense of Hebrew scripture. Burning the Talmud was in part Louis IX's attempt to dispose of a rival sense of scripture, one with a preeminent claim to authority among the very people to whom God had revealed it. Neither oral discussion nor written words were central to Louis IX's sense of scripture. He understood scripture through immersion in action in the world. He sought as a central aspect of his life to find himself in Hebrew scripture. The production of the Morgan Bible was an extraordinary effort to make a scriptural artifact that evoked this sense for him.

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[1] Cohen (1999) argues that the Christian Church's attacks on Jews for deviating from Hebrew scripture was a largely new development in the thirteenth century. The quoted phrase is an excerpt from Justinian I's decree (Novella 146, issued in 553 G.C.) forbidding the Mishnah, a compilation of rabbinic commentary on the Torah. Trans. and quoted in Kugel (1997) p. 402.

[2] Lowden (2000), vol. II, analyzing the text used for the Book of Ruth, finds much material not included in Hebrew scripture and not showing faithful interpretation of it: "two gross errors...strikingly ignorant" (pp. 72-3); "a 'biblical' text so bizarre as to be (unintentionally) amusing" (id.); "there is no event in the biblical Ruth that remotely resembles what is narrated here" (p. 129); "The priest of the law who gives Ruth to Boaz is an invention of the author without any basis in biblical narrative." (p. 171); "it is striking that the author is ignorant of the sex of the child and of his name, since a major element of the importance of the Book of Ruth (in terms of medieval Christianity) lies in the role of Ruth and of Boaz's son Obed as the progenitors of David." (pp. 185-6).

D. Reception of Texts

While originally the Morgan Bible included no text, its design drew significantly on the visual conventions of European text and the order of Hebrew scripture. In contrast to texts in many languages, European text is read from left to right, and pages in European codices are turned from right to left. Hebrew scripture itself has a canonical verbal order within books as well as a canonical order among books.[1] The painted area on a page of the Morgan Bible is rectangular and organized as four (or less frequently, two or three) rectangular sub-areas. The rectangular sub-areas generally follow the order of Hebrew scripture from left to right across the top register, followed by left to right across the bottom register. The sequence continues with the sub-area on the upper-left corner of the next page. With pages turned from right to left, the paintings concern text in order from Genesis, Exodus, Joshua, Judges, Ruth, 1 Samuel, and 2 Samuel. Paintings in the Morgan Bible are thus organized in accordance with the visual conventions of European text and the order of Hebrew scripture.

The paintings themselves code meaning in the order of European text. The repetition of a figure moved rightward in a painting corresponds to temporal sequence.[2] Figures generally enter a scene from the left, and exit to the right.   Bringing Benjamin back and the repulsion of the Is-raelites are painted with predominate right-to-left directions of action.[3] In these and other in-stances, the reversal of the visual convention of European text signals a spatial or conceptual reversal. Comparing the paintings in the Morgan Bible with those in the Shahnameh of Shah Tahmasp clearly indicates the significance of these textual conventions. The Shahnameh came out of a Persian culture in which text is written from right to left, and pages of books are turned from left to right. The visual coding in paintings in the Morgan Bible is opposite that in paint-ings in the Shahnameh of Shah Tahmasp.[4]

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[1] The canonical verbal order within books is the same as that of traditional text, i.e. there is one, given order of the sentences understood as part of the definition of the text. Other collections of words, such as the Talmud or hyper-texts, have different understandings of order. An order of books (Genesis, Exodus, Leviticus,…) is also part of the definition of the Bible.

[2] E.g. folio 24v, lower register.

[3] Folio 6r, lower register; folio 10r, upper register.

[4] Section II.D, *infra.*, provides more details on the visual conventions in the Shahnameh of Shah Tahmasp.

Paintings in the Morgan Bible and Latin scripts share aspects of visual composition. An architectural frame occupies the upper quarter of both the upper and lower registers in paintings in the Morgan Bible.[1] This frame establishes a regular visual rhythm similar to the visual rhythm of a Latin script. Moreover, human figures dominate many compositions in the Morgan Bible. These figures are generally similar in size and posture and arranged on a common ground line at the bottom of the scene.[2] The visual effect of these figures is thus like letters. In addition, the backgrounds in most of the paintings are a plain, single color, alternated in a regular rhythm among rectangular sub-areas.[3] This choice of background lacks realism and makes no attempt to create an illusion of three dimensions. More elaborate and decorative backgrounds were surely

possible. The intent, however, seems to have been to create visual aesthetics of contemporary Latin scripts – a regular, predominantly vertical pattern of lines standing out against a plain background.

The Morgan Bible also evoked text in a more complex sense. The visual conventions described above probably do not draw upon phylogenetically late capabilities of the human brain.

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[1] Similar architectural forms appear in some of the circular illustrations in the *Oxford-Paris-London* Bible Moralisée, produced in Paris in the 1230s. They are relatively more frequent in the third (*London/Harley*) volume. See De Laborde (1911-27), e.g. vol. 1, pl. 87, row 4; vol. 1, pl. 89, row 3; vol. 3, pl. 556, 557. A similar frame appears in the St. Louis Psalter (probably produced in Paris about 1260), but it has a more somber and less creative form.
[2] Simpson (2002) p. 133 notes this aspect of the paintings and points out that this compositional style characterizes Persian paintings from 1300-1350. Other early Christian paintings did not have this style. For example, illuminations from the Vienna Genesis, a sixth century Christian manuscript, are much more loosely organized in the painted area. A painting of Moses receiving the Law, from fifth or sixth century Byzantium and reproduced in a tenth-century manuscript, shows a rich spatial organization of figures and landscapes. This painting is reproduced in Mango (2002) p. 222.
[3] Colors of frame components also change with the same rhythm as changes in the sub-areas' background colors.

Properly trained monkeys probably could sense these visual conventions, while most humans would not consciously notice them without a reason for doing so.   However, about the mid-fourteenth century, the owner of the Morgan Bible sensed the need to add text.[1] Latin text was added above and below the pages' painted areas. In the beginning of the seventeenth century, the Bishop of Krakow had the Morgan Bible delivered as a gift to Shah Abbas of Persia. Shah Abbas immediately ordered Persian text to be added to the pages.   Subsequently, an Iranian Jew apparently acquired the manuscript. This owner added Hebrew text. Thus the blank margins of what had been a book with only paintings became filled with words in three scripts and five languages.[2]

The mid-fourteenth century Latin inscriptions are intentionally decorative. These inscriptions are regularly placed above and below the painted area. They are organized, independently above and below the painted area, into one or two text areas (separate inscriptions). Whether the text is segmented horizontally depends on whether the corresponding painted register has a sense of one or two scenes.[3] Each text area begins with a decorated initial with height equal to about four lines of text. The decorated initial, which is almost always Q, is decorated with a variety of abstract designs that relate in color and pattern to the paintings.[4] The bottom cross-marks of the Q's are greatly extended to form decorative flourishes. The flourishes are particularly elaborate on the first page, extend in a variety of directions on other pages, and on a few pages combine closely to form a coherent visual design.[5]

While the Latin inscriptions have a decorative sense, they also fix the painted scenes' relation to scripture. That the painted scenes represent Hebrew scripture would be obvious to most viewers at all familiar with Hebrew scripture. Yet figuring out what part of what story a particular scene presents is often a challenging task. Many viewers might be anxious about whether they have correctly perceived the presentation of scripture.   The inscriptions name the persons, groups, and places in the painted scene, describe in words the actions depicted, and provide addi-

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[1] Dating of the script varies somewhat. Cockerell states that the Latin inscriptions are "about fifty years later in date than the illustrations," and, a paragraph later, describes them as added "c. 1300." Cockerell and Plummer (1969) p. 6. Cockerell was probably drawing on the evidence of Millar (1927-30), cat. #66 and #67, both dated c. 1300. Stahl describes the script as "an Italian script of Bolognese type, and can be no earlier than the first quarter of the fourteenth century." He cites for comparison Thomson (1969) no. 75, dated 1379. In addition, Stahl observes, "The square proportion of the letters and the roundness of the looped forms suggest a mid-fourteenth-century date." Stahl (1974) p. 5. Noel describes the inscriptions as dating to the first half of the fourteenth century, while also noting the wide range of possible dates. Noel (2002) pp. 109-10. The script style does not itself provide good indication of where the Morgan Bible was when the Latin inscriptions were added. Id. notes that this style of script and decoration was "widely imitated throughout southern Europe in the first half of the fourteenth century."   A clue to the location of the Morgan Bible might be its possible influence on the Bibbia Istoriata Padovana. This latter book is a large Bible Picture Book with four scenes per page and short, Italian-language inscriptions done in a script similar to the Morgan Bible's Latin script.   It was made in Padua late in the fourteenth century. For relatively accessible images from it, see Folena (1962).

[2] Babaie (1999) and Moreen (1999) provide German, English, and French translations of the Persian and Judeo-Persian texts. Both translations note words from different languages. The Persian scribe wrote mainly in Persian but included some distinctively Arabic words and expressions. The Jewish scribes (two different hands are apparent) wrote mainly in Judeo-Persian, but included some distinctively Hebrew words.

[3] Among the extent 92 page views (46 folios), the number of pages with 2, 3, and 4 text areas are 28, 29, and 35, respectively. Consistent with these figures, there are a total of 283 text areas, 85 of which span the full upper or lower edge of the painted area.

[4] All but the first nine Latin inscriptions begin with "Qualiter" (how).

[5] For visual design of the decorated initials, see especially folios 8v, 16r, and 35r.

tional context for interpreting the actions. The inscriptions thus anchor the images to (written) scripture.[1] Scripture is of course itself cryptic and requires interpretation. The inscriptions allow a viewer to make sense of the images by referring them to well-known words within a well-established interpretative tradition. The inscriptions thus free the viewer from the burden of personally making sense of the images.

The Latin inscriptions add verbal sense not derived from the paintings. The inscriptions include rubrics that divide the scenes by biblical books. They thus provide additional parsing of the paintings.[2] The inscription above the first scene begins with the same words as the Vulgate: "In the beginning God created the heaven and the earth...."[3] Another inscription quotes a famous, non-semantic verbal expression:

> *How, upon hearing about the victory, David asked about Absalom, when he was told how he had died, he started going and weeping and saying these words in tears: "My son Absalom, Absalom my son, who would grant me to die for you? My son Absalom, Absalom my son."*[4]

The inscriptions also include details from scripture not depicted in the corresponding painting. Below the painting of Jesse speaking to David, the inscription states not only that Jesse told David to go to Saul's camp, but also that Jesse told David to bring grain, bread, and cheese.[5] These details of David's provisions are nowhere shown.

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[1] On anchorage, see Barthes (1977) p. 41.

[2] The rubrics are in red ink, which contrasts with the black ink used for the rest of the Latin inscriptions. Privileging a verbal marker in this way contributes to the book's visual sense.

[3] In Latin, "In principio creavit deus celum et terram…." Folio 1r, upper left. These are the exact Latin words that begin Jerome's Vulgate, the primary medieval Christian bible.

[4] Folio 46r, upper left, as trans. in Lupu (1999) p. 326 (#278).

[5] Folio 27r, lower left, trans. in Lupu (1999) p. 315 (#167).

The inscriptions sometimes adapt scripture to avoid a contrast with the corresponding painting. For example, in scripture Saul requested David to bring one hundred Philistine foreskins as Michal's dowry. David brought two hundred foreskins.[1] The painting of Saul's request to David does not indicate the nature of the request, while the corresponding inscription states that Saul asked David for one hundred Philistine foreskins.[2] A subsequent painting shows David presenting human heads to Saul. The corresponding inscription is this:

> *How David came back to the king and, although he had asked for only one hundred foreskins, offered him two hundred enemy heads.*[3]

A simpler descriptive response would have been to eliminate altogether mention of foreskins. The effort made to include that detail indicates the importance of the words of scripture to the Latin inscriptions.

The Latin inscriptions occasionally ignore or contradict their corresponding paintings. A painting of a meeting has an inscription about a flight and pursuit.[4] A painting of a battle and subsequent rescue of two women has an inscription describing David "killing men and women and sparing none."[5] These inscriptions seem to have come from the order of scripture, not from sense of the paintings. Paintings of the story of Noah show the only humans saved to be Noah, his wife, and two small children. The inscriptions, following scripture, state that Noah, his wife, their three sons and their son's wives were saved.[6] The words of scripture clearly were capable of dominating the sense of the paintings.

The sizes of the Latin inscriptions provide further evidence about the importance of verbal concerns. The median number of words of Latin inscription per page (measured in English translation) is 144.[7] The Hamzanama of Akbar, constructed with one page of text for each page of painting, has about 350 words per text page (again measured in English translation). Comparing words per square centimeter of painting, the Morgan Bible has word/painting density about 2.5 times higher than does the Hamzanama.[8] The sizes of the Latin inscriptions on the pages of the Morgan Bible vary considerably. Out of 96 pages, fifteen pages have word counts 50% or more different from the median page. The organization of the painting on the pages of the Morgan Bible – whether in two, three or four scene areas – does not significantly relate to the total words on the page.[9] Given its lavish visual design and original absence of text, the Latin inscriptions had remarkably important sense relative to the Morgan Bible's paintings.

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[1] 1 Samuel 18:25-7.

[2] Folio 29v, trans. id. p. 316 (#179).

[3] Folio 30r, upper left; inscrip. trans. id. p. 317 (#181).

[4] Folio 4v, upper right; inscrip. trans. id. p. 301 (#29).

[5] Folio 34v, upper; inscrip. trans. id. p. 319 (#209).

[6] Folio 2v; inscrip. trans. id. p. 300 (#14, #15).

[7] This and subsequent statistics for the Latin inscriptions have been tabulated from the translations in id.

[8] The Morgan Bible has 0.23 words/cm^2 of painting per page (considering only Latin inscriptions). The Hamzanama of Akbar has 0.093 words/cm^2 of painting per text page-painted page pair. Both figures measure words in English translation. On the Hamzanama of Akbar, see Section II, *infra*.

[9] Pages with 2, 3, and 3 text areas have on average 135, 141, and 146 words of Latin inscription per page, respectively. The data does not reject, even at a 10% level of significance, the hypothesis that average words per page is not related to the number of text areas per page. However, the number of text areas seems to be based on the visual organization of the corresponding painted register. In most cases, obvious visual characteristics of the paintings distinguish between a one-text-area register and a two-text-area register.

Shah Abbas' reaction to the Morgan Bible further indicates the importance, even across large religious and cultural differences, that words had for making sense of the Morgan Bible. A Christian missionary's eye-witness account of the presentation of the Morgan Bible to Shah Abbas in 1608 states that Shah Abbas "turned over the sacred pages with care and admiration" and then:

> he gave orders that he [an official in Abbas's court] should take an expert Mullah to where our missionaries were staying and get from them the meaning of the pictures and insert it in the Persian tongue below each of them.[1]

Abbas did not look at the Morgan Bible for long before he ordered Persian text added. He may have been interested in the meaning of the Latin inscriptions that he saw, as well as the meaning of the pictures. Because Muslims believe that God's revelation ultimately came through the words of the Qur'an, Shah Abbas may have felt that the best way to understand a religious artifact is through words. In any case, an astonishing aspect of the added Persian inscriptions is that they look like graffiti defacing a sumptuous gift. The Persian inscriptions were added unartfully and irregularly above and below the Latin inscriptions and in the margins on the sides of the paintings. That Persian inscriptions were added in this way suggests that Shah Abbas and those who directed the inscriptions were primarily concerned with the verbal sense of the Morgan Bible.

The Persian inscriptions largely follow the sense of the Latin inscriptions. The blocking into one or two text segments per painted register is almost always the same for the Latin and Persian inscriptions. The Persian text generally follows the actions described in the corresponding Latin text, but trims down the verbal context and replaces names of minor characters and places with generic references. This transformation seems to indicate words that the Persian scribe would remember while looking at a section of painting and hearing a Persian translation of the corresponding Latin inscription.

In transforming the Latin text, the Persian scribe added a stronger sense of God's will. Islam emphasizes the world's dependence on the will of God. The Persian scribe brought this sense to the Latin text with small additions. For example, the Latin text states that Abraham "snatched away" Lot from Lot's captors. The Persian scribe notes that Abraham fought to rescue his relative, and "Abraham's relative was recaptured by the assistance of God the exalted."[2] The change is most dramatic with respect to the painting of Jacob, with hands crossed, blessing Joseph's sons. This image's Latin inscription mainly describes action closely related to the image:

> How Joseph led to his father his two sons whom he had begotten in Egypt, placing the elder to the right of his father and the younger to his left. The old man, his hands
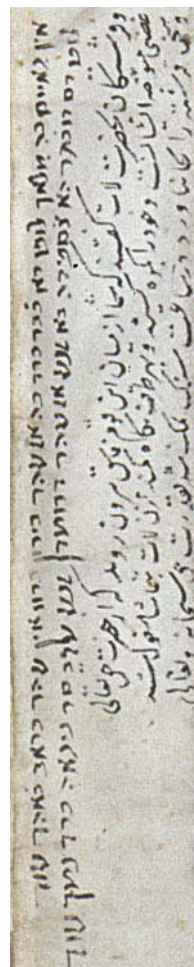
[1] Cockerell and Plummer (1969) p. 13, which quotes the chronicle of a missionary who presented the Morgan Bible to Shah Abbas.

[2] The last phrase "by the assistance of God the exalted" is rendered in a standard Arabic form. Folio 3v; Latin trans. Lupu (1999) p. 300 (#21), Persian trans. Babaie (1999) p. 329 (#21), which notes the Arabic form.

crossed, placed his right hand upon the younger's head but upon the elder's head he place the left, blessing them both and setting the younger before the elder.[1]

The Persian inscription includes an explanation concerning the will of God:

And this is the image of Jacob who blesses the sons of Joseph and holds the hand of the elder son in his right hand and the younger in his left; and after that he changed hands so the older remained in [his] left hand. And Joseph asked, "Why did you change hands?" Jacob said, "God the Exalted has so commanded."[2]

The words the Persian scribe heard, the images before him, and his fundamental beliefs all combined to shape his sense of the Morgan Bible.[3]

The Morgan Bible includes inscriptions in Judeo-Persian in addition to those in Latin and Persian. The presence of Judeo-Persian inscriptions suggest that an Iranian Jew once owned the Morgan Bible.[4] The Afghans sacked the Persian capital of Isfahan in 1722. The royal library in Isfahan, which was looted, probably contained the Morgan Bible. An Iranian Jew might then have had an opportunity to buy the book at a price that a person with meager resources could pay.[5] Surely this owner did not know who made the Morgan Bible. Perhaps this owner recognized that the book had been made in Europe, and had been in Shah Abbas' library.[6] In any case, at this time the book already had the graffiti-like Persian inscriptions. Judeo-Persian inscriptions were added in a similar way. This decision may be further evidence of concern about verbal sense. On the other hand, by the time the Iranian Jew acquired the Morgan Bible, concern about verbal sense had become, with the two styles of inscriptions already present, a strong visual sense. The Judeo-Persian inscriptions may indicate in part a desire to see one's own script present on the page.

The Judeo-Persian inscriptions generally follow the Persian inscriptions, but with some characteristic formal changes. The Judeo-Persian scribe knew at least some Persian: the scribe included among the Judeo-Persian text the comments "The Persian text as it is found [here] is wrong," and, at one point, "I do not know what is written in Persian."[7] Some of the Judeo-Persian inscriptions are nearly verbatim translations of the Persian inscriptions.[8] Other Judeo-Persian inscriptions follow significant differences in the Persian inscriptions compared to the Latin ones and Hebrew scripture.[9] The Judeo-Persian scribe restored some of the minor charac-

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[1] Folio 7r, upper left; inscrip. trans. Lupu (1999) p. 303 (#48).

[2] Trans. Babaie (1999) p. 332 (#48).

[3] The Persian inscription for the image of manna from heaven added to the Latin text an additional fact about the manna: "for each it turned into what they desired, be it honey or bread" (folio 9v, trans. Babaie (1999) p. 334 (#68)) The Qur'an describes God sending manna and quails to the children of Israel (Surah 20:80-81), but it does not describe this property of manna. Jewish midrash, however, states this (see Kugel (1997) pp. 360-1). Apparently the Persian scribe benefited from broad religious study.

[4] Jews have lived in Iran since at least the destruction of the First Temple about 2600 years ago.

[5] Moreen (1999) intro., pp. 353-4.

[6] Shah Abbas' seal was placed on one of the first pages of the Morgan Bible, when opened in Persian order. See Simpson (2002) p. 132 ft. 26. The seal is no longer visible on the manuscript.

[7] Folio 7r, lower right; trans. in Moreen (1999) p. 360 (#51). Folio 11v, lower; trans id. p. 363 (#82).

[8] Folio 28r, trans. id. p. 369 (#171-173). Cf. Persian trans. Babaie (1999) p. 343 (#171-173).

[9] Folio 6v, lower left: the Latin inscription (Lupu (1999) p. 303 (#46)) identifies the return to Jacob of his sons. The Persian (Babaie (1999) p. 332) describes this scene (incorrectly) as Joseph sending off his brothers. The Judeo-Persian (Moreen (1999) p. 360) follows the Persian mistake. The Latin inscription describes what is happening in the upper left part of folio 12v (Lupu (1999) p. 306-7 (#84)), while the Persian and Judeo-Persian inscriptions omit any mention of this whole section of the painting. Folio 13r, upper right, depicts Gideon wringing from fleece dew into a bowl. The Latin inscription describes this narratively important action (Lupu (1999) p. 307 (#86)), while the

ter names and places names that the Persian scribe made generic, and eliminated most of the Persian scribe's additions referring to the power of God.[1] Despite evident lack of biblical learning, the Judeo-Persian scribe often summarized with implicit or explicit references to Hebrew scripture. Thus a relatively lengthy description of the Passover in the Persian text became in the Judeo-Persian: "The miracle of the death of the firstborn which occurred at night."[2] Other references are explicit: "This is the tale of Gideon as it is written in Judges [chapter] 7...."[3] The Judeo-Persian inscriptions indicate little independent sense of the images. The Judeo-Persian text mainly translates and abbreviates the Persian text, while strengthening its reference to Hebrew scripture.

The inscriptions concerning the Pharaoh ordering the Israelites to leave Egypt document the process of making sense of the corresponding image. The image shows the Pharaoh gesturing to Moses and Aaron, a God-head learning down from above, and, among other details, three Israelites carrying large sacks away from the Pharaoh. The Latin inscription states that the Israelites left "with all of their possessions, the Egyptians having been despoiled...."[4] The Persian scribe might well have pressed his Christian sources for a more explicit account of this action. The Persian inscription includes a clarification drawn from Hebrew scripture:

> *Moses told his tribe to go and borrow all that was valuable from the Egyptians; and they did so. And Moses took his people with the possessions and departed....*[5]

Jewish interpreters have long pondered the justification for the Israelites leaving with possessions borrowed from the Egyptians. They found scriptural evidence that God had given the Egyptians possessions to the Israelites as compensation for their long years of toil in slavery in Egypt.[6] The Judeo-Persian scribe wrote:

> *They [the Israelites] asked to borrow their [the Egyptians'] property but they did not give it.*[7]

That is the end of this Judeo-Persian inscription. The rest of the story might well have been the midrashic understanding that God then gave these possessions to the Israelites.[8] The variations across the Latin, Persian, and Judeo-Persian inscriptions do not seem to be deliberate tactics in a representational struggle. They seem to be similar sensuous responses of persons with different cultural histories.

Persian and Judeo-Persian texts omit any mention of it. On folio 17r, the upper register depicts the surviving men of Benjamin seizing the dancing daughters of Shiloh. The lower register depicts Ruth and her daughters. The Latin inscriptions recognizes that these paintings are not part of one story, but the Persian inscription describes Naomi as one of the women depicted above (a daughter of Shiloh). The Judeo-Persian inscription follows this mistake. See #115, trans. in Lupu (1999) p. 309, Babaie (1999) p. 338, and Moreen (1999) p. 365.

[1] In one inscription the Judeo-Persian scribe added, after Moses' name, "peace be upon him," written in Hebrew. Folio 7v, upper left, trans. Babaie (1999) p. 361 (#52). This is a strange translation of a customary Muslim epithet for the Prophet Muhummad. It has nothing to do with the corresponding image.

[2] Folio 8v, lower left, trans. Babaie (1999) p. 361 (#62).

[3] Folio 13r, lower, trans. Babaie (1999) p. 363 (#87).

[4] Folio 8v, lower right, trans Lupu (1999) p. 304 (#63).

[5] Trans. Babaie (1999) p. 333 (#63).

[6] Kugel (1997) pp. 324-6.

[7] Trans. Moreen (1999) p. 361 (#63).

[8] On early examples of such midrash, see Kugel (1997) pp. 322-6. Another folio provides evidence that the Judeo-Persian scribe was aware of at least some midrash. He described the scene of the building of the tower of Babel (folio 3r) thus: "The tale about the building of the palace in the days of Nimrod." Babaie (1999) p. 358 (#18). The Bible does not mention Nimrod in conjunction with the story of the tower; the connection comes from midrash (see Kugel (1997) pp. 125-7).

Words, working through all levels of sense, were an important part of the response to the Morgan Bible. Developing scientific knowledge indicates that such a response is consistent with the reality of the human body: the whole living body makes sense.[1] The creators of the Morgan Bible chose only the design of the Morgan Bible, not the design of the human body. The lavish visual design of the Morgan Bible did not push words far from persons' sense of it.

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[1] See infra., Section I, and references therein.

E. Making Sense of Presence

The survival of the Morgan Bible across 750 years should not be taken for granted. Over that period many other lavishly illustrated books undoubtedly have been destroyed. Someone might have burned the Morgan Bible as heretical. Someone might have cut it up and sold the individual paintings. It could have been destroyed in the sacking of the Persian royal library, or in some other war. Or it might have been stored out of view in some later forgotten place, eventually to rot with other insignificant rubbish. Perhaps the survival of the Morgan Bible was just a matter of luck. But a thoughtful, modern analysis should ask: what aspects of the artifact and its environment, in addition to lavish paintings and humans' visual delight in seeing such paintings, helped it to survive?

Being associated with communication with God would help. This, too, should not be taken for granted. Jews, Christians, and Muslims – people of the book – all recognize in scripture communication in words from one, common, Abrahamic God. The Morgan Bible did not reproduce any of the words of Hebrew scripture. The full text of Hebrew scripture is readily available in many other books. A person who valued Hebrew scripture as communication from God might not value the Morgan Bible.[1] Yet a fundamental purpose of Hebrew scripture is to present God to human beings. God in Hebrew scripture often becomes present to humans through sensuous confusions, irregularities, and shifts in sense.[2] Exactly this sense of God's presence is extraordiarily incorporated in the Morgan Bible.

The shift from the sensuous choices made in its design to its subsequent reception of text indicates, in a direct, objective, and significant way, that the Morgan Bible did not originally have a stable sense. Louis IX's effort to push words out of the book failed. Through its subsequent

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[1] As suggested *infra.*, one extreme reaction might have been to destroy it as a corruption of (textual) scripture.
[2] Kugel (2003) eloquently teaches about these aspects of Hebrew scripture.

history, at least three different persons or groups decided to change its sense by inscribing words in the margins of its pages. The sense of living bodies comes through time. What Louis IX might consider to be a design failure can also be interpreted as a design feature: the Morgan Bible caused persons to work out, with this artifact, a confusion of sense about communication with God.

More subtle sensuous confusion incorporated in the Morgan Bible could not be so easily worked out. The iconography of God in the Morgan Bible is disturbingly varied. The first scene presents God as a large human figure, centered in the composition, looking straight out at the viewer.[1] Choirs of angels – smaller human-like figures, but with wings attached to their backs – are on both sides of God. Their hands are raised in a gesture of applause, and they float like persons standing in mid-air. Similarly depicted angels (or God?) appear on the ground in other scenes.[2] God (or an angel?) also appears as a gesturing torso leaning down from a small cloud attached to the upper architectural margin. In some scenes this half-figure just gestures, elsewhere it also holds a scroll, and once, a codex.[3] Many appearances of God are just a head looking down from a small cloud attached to the upper architectural margin.[4] Occasionally God shrinks down to a hand extended down from a similar position.[5] Sometimes God is depicted according to the literal words of scripture: a pillar with flames coming from its ends floats in front of the Israelis in the painting of the departure from Egypt.[6] Elsewhere the action of God in inducing prophecy is depicted as a descending dove, or a flying dove with a light line connecting the dove to the inspired person.[7]

The painting concerning Jacob's vision brings together three representations of God.[8] On the left side of the painting, three angels, human-like figures but with wings on their backs, climb

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[1] Folio 1r, upper left.

[2] An angel brandishing a sword expels Eve and Adam from Eden (folio 2r, upper right); two angels visit Lot (folio 3v, lower right); an angel wrestles with Jacob (folio 4v, lower left); an angel visits Manoah (folio 14r, upper right). On confusions in the appearances of men, angels, and gods, see Kugel (2003) Ch. 2.

[3] The second through sixth scenes (days of creation) each include four applauding half-figures leaning down from the top margin. Folio 2v, lower right, includes two smaller, applauding, heavenly half-figures. Out of 12 additional instances of heavenly half-figures, 5 hold scrolls and 1 holds a codex.

[4] There are 20 instances of such god-heads.

[5] Folio 39r, lower right and lower left; folio 40r, upper right.

[6] Folio 8v, lower right.

[7] Dove descending from small cloud attached to upper architectural margin: folio 31r, lower right; folio 31v, upper left. Dove flying just below a cloud attached to upper arch. margin, with a line (in a slightly darker shade of the background color) connecting the dove's beak to the top of the head of a figure: folio 22v, lower left. Folio 26r, lower left, depicts the spirit of the Lord departing from Saul as a dove flying away from him. The evil spirit is depicted as a small, horned and hoofed devil that lands on Saul's shoulder.

[8] Folio 4r, lower right. For an insightful discussion of this passage, see Kugel (2003) pp. 27-35.

upward on a ladder in human-like fashion (three others descending have the same form and gesture, but are upside down). Above the ladder, leaning downward from the fringe of a cloud attached to the architectural margin, is a figure's torso, with one hand gesturing and the other holding a scroll. The corresponding scripture refers to "angels of God ascending and descending on [a ladder]" and states that "the Lord stood above it, and said…."[1] Perhaps the torso leaning down is speaking in addition to holding a scroll, but the implied figure does not seem to be standing relative to the ground. In scripture, when the Lord, standing above the ladder, finishes speaking to Jacob, Jacob wakes up, erects and dedicates a stone pillar, and makes a vow to God. On the right side of the painting Jacob empties a vessel onto an altar. Above the altar appears again a leaning torso, but in this instance one arm of the half-figure holds a closed codex. This God-figure seems to be blessing Jacob, but in scripture the Lord standing above the ladder blessed Jacob while he slept. Overall, the visual sense of God in this scene seems as confused as Jacob's sense when, just earlier, he was wrestling with a man, or an angel, or perhaps God.

Scrolls and codices have entirely confusing iconographic significance in the Morgan Bible's paintings. In the painting of the expulsion of Eve and Adam from Eden, God appears as a standing figure holding a codex by the cloth of his cloak.[2] The painting of God calling Moses shows just the torso of God within a bush, but again God holds a codex by his cloak.[3] However, the torso of a figure leaning down over the sacrifice of Abel and Cain holds a scroll with his cloak, while the priest in the temple hearing Hannah's petition holds in his hand an unrolled scroll.[4] Although in scripture David often consults God before making a major decision, God appears seldom in the paintings concerning David and never with a scroll or a codex. But God might have appeared differently to David; for example, a full figure of a standing angel, holding an unrolled scroll, is painted in front of a kneeling Manaoh.[5] In depicting the offering of Isaac, a half-figure reaches down from above, grabs with one hand Abraham's sword and with the other points to a ram.[6] This action-oriented iconography of God harmonizes with the Morgan Bible's over-all design of actions without words. In contrast, once noticed, scrolls and codices placed desultorily undermine the sensuous unity of the Morgan Bible.

The Morgan Bible also has a peculiar physical irregularity. This book was usually constructed with groups of three parchment sheets laid one on top of another and folded together to form page groups (gatherings) of six folios each.[7] One folio from the second gathering most likely has been lost.[8] If this gathering were like the rest of the gatherings in the Morgan Bible,

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[1] Gen. 28:12-13 (KJV).

[2] Folio 2r, upper left.

[3] Folio 7v, lower left.

[4] The painting of God speaking to Samuel about Eli also includes a torso leaning down with an unrolled scroll, as does the call of Gideon.

[5] Folio 14r, upper right.

[6] Folio 3r, lower left.

[7] Voekle (1999) and Cockerell and Plummer (1969) pp. 17-18.

[8] Voekle (1999) p. 251 notes vestiges of Persian foliation showing numbers 46, 47, and 48 on folios 3v, 2v, and 1v, respectively. This indicates that the Morgan Bible had 48 folios when given to Shah Abbas. Of these 48, 46 are currently known. Folio 45, which was detached from the book before the Judeo-Persian inscriptions were added, lacks a conjoint folio, which would fall between folios 42 and 43 if the last gathering were regular. The text of folio 42v ends with 2 Sam. 12:7-14 and starts on 43r with 2 Sam. 13:7-14. This is a significant gap, particularly since the scenes on folio 42v include the beginning of story of David and Bethsheba, but not key latter parts of it (the death of their first infant; the birth of their second). Thus one missing folio almost certainly fell between folios 42 and 43. All the other gatherings, except the second, are regular.

then the lost folio would be the twelfth in the original book. But the text of the Latin inscriptions for the last scene on (presently numbered) folio 11v and the first scene on the next folio implies that this is impossible.[1] The gap in the text occurs between (presently numbered) folios 9 and 10.[2] These folios, however, are conjoint: they are part of the same piece of parchment. Thus the second gathering in the Morgan Bible, in contrast to all the other existing gatherings in the book, must have had an irregular structure. Folio 7 must have been a single folio, not conjoint with folio 12. A single, now lost folio must have existed between folios 9 and 10.[3]

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┌─────────────────────────────────────────┐
│            Second Gathering              │
│   ┌──────────┐                           │
│   │ Folio 7  │                           │
│   │   ┌──────┴──────────────────────┐    │
│   │   │ Folio 8         Folio 11     │    │
│   │   │   ┌─────────────────────────┴┐   │
│   └───┤   │ Folio 9        Folio 10   │   │
│       │   │                           │   │
│       └───┤                           │   │
│           │                           │   │
│           └───────────────────────────┘   │
└─────────────────────────────────────────┘
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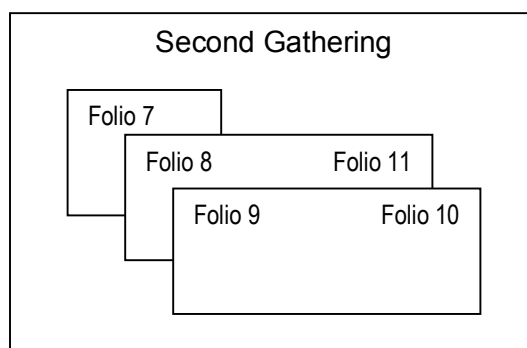
This physical irregularity is consistent with ambiguity and tension concerning the iconography of communication with God. The textual space between folios 9 and 10 covers God giving the law to Moses, one of Hebrew scripture's most important events. In contemplating the depiction of this event, the Morgan Bible's creators confronted some questions. Should a painting show God giving Moses a codex, a scroll, or just tablets? Should Moses be shown writing tablets, a scroll, or perhaps a codex?[4] How should Moses be shown communicating the law to the Israelites – by passing to them an artifact containing words, by speaking to them while holding such an artifact, or just by speaking to them?

The Morgan Bible's creators did not necessarily have to answer these questions. The Morgan Bible as a whole emphasizes worldly events revealing the logic of God's law. It does not include paintings of God calling Abram or of God's covenant with him. No paintings in it correspond to text from Leviticus, Deuteronomy, or other legal passages of the Torah. Louis IX commissioned the Morgan Bible as a monumental Old Testament picture book to be filled with vigorous paintings and no text. He approved the burning of the Talmud. Painting the communication of the verbal law meant venturing into contentious issues and potentially undermining the intended sense of the Morgan Bible. Instead, the Morgan Bible's designers could have filled the single, missing folio with other, plausible scenes from the textual gap: Moses's raised hands beside the battle against Amalek, the return of Moses's wife, Moses's appointment of judges, the

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[1] The last textual reference on folio 11v is Joshua 24:29-31 (death of Joshua), while the first on folio 12r is the rubic "Ex libro iudicum." There is thus no textual gap for corresponding paintings to fill.

[2] The last textual reference on folio 9v is Exodus 17:8-13, while the first on folio 10r is Jos. 7:1-5. The latter is the first reference to the book of Joshua, but there is no rubric indicating the beginning of this book. The beginning of a new book is indicated with a rubric in all other such instances in the Morgan Bible. Cockerell and Plummer (1969) p. 17 observes, "From section 2 the last leaf has been removed, but there is no gap at that point in the text. A gap occurs however after the third leaf of this section (f. 9) and something is there missing." Fleck and Leson (2002) p. 144 mentions this, and cites Harvey Stahl as also having made this observation.

[3] Fleck and Leson (2002) p. 144, suggests: "It is possible therefore that a bifolium at the center of quire 2, between the present folios 9 and 10, might be missing." While the St. Louis Psalter provides examples of such inserted bifolia (see Branner (1977) pp. 134, 176), this scenario seems to me unlikely. The Morgan Bible had 48 folios when it was given to Shah Abbas. Subsequently two folios were lost, one of which is almost certainly from the last known gathering. An inserted bifolium would be inconsistent with the known page total and the loss of a single folio elsewhere. Moreover, an inserted bifolium would leave a single (non-conjoint) folio in the second gathering. Thus this scenario presumes the existence of a single (non-conjoint) folio in a gathering. It is more plausible that there existed two such folios, rather than one singleton and a bifolium.

[4] The scroll is an artifact more associated with Jewish life (teaching the Torah) than Christianity, while the rise of Christianity is closely associated with the development of the codex. Jewish scholars have long discussed scriptural aspects of God's communication of the law. See Kugel (1997) pp. 376-87, 400-7.

crossing of the Jordan, and Joshua's meeting with the captain of the Lord's army.[1] The irregularity in the second gathering suggests that the Morgan Bible's designers pondered to an unusual extent the problem of God's communication of the law.

The sensuous uncertainty and confusion that the Morgan Bible evokes is closely related to the sense of God's presence in Hebrew scripture. Hebrew scripture includes characterizations of God as a great, cosmic deity who orders and permeates the universe. But Hebrew scripture also records a God that shows up, unexpectedly and unsought, in forms that persons often do not recognize at first. This one God communicates in mundane scenes with ambiguous, shifting sense.[2] One sense of the Morgan Bible is that of an epic romance, a *chanson de geste*.[3] But the words that the Morgan Bible attracted were not connected to epic romances, but to Hebrew scripture. Moreover, despite the Morgan Bible's large investment in visual sense, that sensory mode does not dominate. Both the created form of the Morgan Bible and its subsequent evolution evoke sense like the sense of God's presence in Hebrew scripture.[4]

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[1] The first Latin inscription on the subsequent page (folio 10r) includes after the description of the defeat at Ai a report on what happened earlier at Jericho and why.   This suggests that the conquest of Jericho got squeezed out of the paintings on the previous single folio.

[2] Kugel (2003) Ch. 2.

[3] Mann (2002) pp. 55-6.

[4] In addition to sensuous confusion about communication with God, the Morgan Bible's paintings contrast sharply good and evil, depict inevitable redress for the wronged, and show persons and events moving against a monochrome background. Kugel (2003) Ch. 6 identifies starkness, which includes these characteristics, also to be an important sense of Hebrew scripture.

IV. Mundane Limits of Will in Making Sense

A recent, prominent U.S. exhibition of Chola Bronzes from South India provides striking evidence of human sense.[1] These bronzes – large, graceful, figurative sculptures – were created for Hindu worship under the Chola dynasty that ruled south India from the eighth to the twelfth centuries G.C. Some forms of Hindu worship are intimately related to artifacts, actions, and bodily sense:

> *To honor a Hindu deity, devotees perform ritual worship known as puja. Comparable to the hospitality one might offer to royalty or a highly esteemed guest, puja includes an elaborate bath, new clothes, jewelry, flowers, incense, lamps, music, food, and water. Hindu worship directs all the senses toward the object of devotion. Puja involves admiring the fully adorned deity, smelling the incense and flowers, hearing the chiming of bells and the chants of devotees, and tasting food sanctified by the deity [2]*

Bronze figures have played an important part in such worship. Similar artifacts still do today:

> *Dressing bronze images in silks and adorning them lavishly with jewels and flowers prior to their participation in festival processions is a vital part of worship in south India today - just as it was over a thousand years ago. Since at least the sixth century, priests have ritually bathed the bronze deities in milk, curds, butter, honey, and sugar, followed by water from the Kaveri river; anointed them with fragrant sandalwood paste; draped them in colorful cloth; and shaded them from the sun with canopies during festival processions.[3]*

A particular founder or leader did not invent such worship.[4] Hinduism developed gradually in India over more than 3000 years of Indian civilization.

While persons in the U.S. today might calmly admire the beauty of these bronzes and be intrigued by the vitality and sensuousness of Hindu worship, similar artifacts and practices in Western culture have been a source of intense personal and social turmoil. Nowhere was this more so than in sixteenth and seventeenth century England. Popular shrines were destroyed and popular religious practices outlawed. Altars were stripped, and the walls of churches bared and whitened. Images were returned to churches, and then removed again. These fitful actions followed orders of successive central authorities, who burned images, books, and persons. Conflicts over sense in communication stirred great religious and political struggles.

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[1] The exhibit, "The Sensuous and the Sacred: Chola Bronzes from South India," was organized by the American Federation of Arts and the Arthur M. Sackler Gallery, Smithsonian Institution. It opened at the Sackler Gallery, then traveled to the Dallas Museum of Art, and finished at the Cleveland Museum of Art (July 6, 2003 through Sept. 14, 2003). An online presentation related to the exhibit is available at
http://www.asia.si.edu/exhibitions/online/chola/chola.htm

[2] "The Sensuous and the Sacred," online presentation, under links "Practice: Hinduism in India and America," "Ritual Adornment."

[3] Id.

[4] A poster in the exhibit described Hindus' beliefs thus:

> *Hindus believe that God is a single being worshipped in multiple name and forms, in keeping with their view of the infinite as a diamond of innumerable sparkling facets with one facet appealing to an individual more forcefully than another. The fact then that one Hindu may worship the God Vishnu, for example, does not negate the validity of other facets, such as Shiva, Durga Ganesha, the prophet Muhammed, or even Christ. Multiplicity is as natural to Hindus as singularity is to monotheists.*

There are many online sources of information about Hinduism, e.g. http://www.hindunet.org/ http://www.himalayanacademy.com/ and http://www.hindu.org/

In sixteenth and seventeenth century England, disentangling words and images in common sense proved much more difficult than changing the physical environment, religious practices, and governing authorities. Leaders fought vigorously over sensuous practices in religious worship, but in doing so they affirmed the integration of sense across sensory modes. Many persons incarnated a contentious religious figure in a way that resists resolution into word, image, and significance. Shakespeare's theatre, while insistently questioning vision and words, pushed theatre-goers to recognize his characters' real presence. A central, recurring pattern of sense – that of another living body – naturally integrates sensory modes and exceeds representation. Especially in circumstances of uncertainty and anxiety about sensuous choices, this sense of person contributes greatly to the economy of communication.

A. Battles over Common Sense

In the beginning of the sixteenth century, one of the most important shrines in England was Our Lady of Walsingham. According to a ballad printed about 1496, this shrine originated in the visions of a widowed gentlewoman living in Walsingham in the middle of the eleventh century.[1] Mary, the mother of Jesus, instructed the gentlewoman to build a replica of the house in which the angel Gabriel had announced to Mary that she would give birth to Jesus. The gentlewoman employed carpenters to build the house, but they were unable to do so. However, one morning the house was found to be miraculously constructed from the carpenters' materials. A statue of Mary was placed within this "Holy House." The statue of Mary, "Our Lady of Walsingham," subsequently became a prominent object of pilgrimage and veneration. In 1246, King Henry III had a golden crown made for its head.[2] By the beginning of the sixteenth century, the statue of Mary was probably crowned, richly clothed, surrounded with burning candles and lustrous silver, gold and jeweled objects, and perfumed with incense.[3]

The development of this shrine indicates a more general pattern. The Holy House of Walsingham was not itself the focus of pilgrim's attention, but rather the statue of Mary. Christian shrines throughout Europe predominately emphasize artifacts directly related to the human body, such as figurative sculpture, paintings, and human remains.[4] Moreover, these shrines predominately concern veneration of Mary, the mother of Jesus. Among late twentieth-century Christian pilgrimage sites in Western Europe, about two-thirds primarily concern Mary.[5] Despite what was thought to be the miraculous construction of a replica of Mary's house, the pre-

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[1] The ballad is known as the *Pynson Ballad*. My source for the subsequent account is Hall (1966) pp. 104-6, which describes the ballad.

[2] Id. p. 112.

[3] On the embellishment of images in Europe, see Erasmus, "A Pilgrimage for Religion's Sake" (1526) at Thompson (1997) pp. 629, 638-40, Camille (1989) pp. 225-7, Freedberg (1989) pp. 244-5, and Nolan and Nolan (1989) pp. 213-4. In 1451, the prior and chaplain in Carlisle, England, resolved to decorate a local statue of Mary:

> *inflamed by the zeal of pious devotion, [we] have resolved and wish, with the aid of God's grace, to cover and adorn the image or statue of the glorious Virgin with silver plates, decorated with gold, jewels, rings and many other precious ornaments, to the praise of God and the increase of veneration, glory and honour of the aforesaid glorious Virgin, and also to ignite the devotion of the Christian faithful, by some ingenious and costly work.*

Quoted in Webb (2000) p. 105. Id. pp. 197-8, also describes gifts of jewels and clothing that wealthy persons bequeathed to various images of Mary, including Our Lady of Walsingham.

[4] Nolan and Nolan (1989), ch. 6.

[5] Id, p. 116-7. This statistics is from a survey of Lutheran, Anglican, and Catholic pilgrimage sites.

dominate sense of the Walsingham shrine was that of an adorned statue evoking Mary's presence.

Mary's presence in Christian shrines significantly enlarges representations of her found in canonical Christian texts. Among the Christian epistles, some of which were written before the gospels, Mary's name is not written.[1] The closest reference to Mary is an adjectival clause describing Jesus "made of a woman, made under the law."[2] Mark's gospel, probably the first gospel written, includes Mary's name only once – in an astonished questioning of Jesus' familial and social credentials.[3] Another passage in Mark directs attention away from Mary's distinctive physical presence. With his mother standing outside, Jesus declares that whosoever shall do God's will is his mother, brother, and sister.[4] Neither of these passages provides an obvious basis for venerating Mary. Only Luke's gospel includes the annunciation of the angel Gabriel to Mary and other key passages characterizing Mary.[5] The character of Jesus fills the Christian gospels to a greater extent than one character occupies other historically important literature. Yet the response to the Christian gospels indicates a popular sense that venerating other figures, especially Mary, fosters communication with God.[6]

The Christian gospels valorize sense that goes beyond words. The Gospel of John proclaims Christianity with a radically expanded sense of text: "the Word became flesh and made his dwelling among us."[7] The original ending of Mark's gospel may have dramatically pointed outside its own text.[8] To the women who had come to Jesus' grave, an angel declared that Jesus has been raised from the dead and will be seen again in Galilee. The text apparently originally ended thus:

> Then they [the women] went out and fled from the tomb, seized with trembling and bewilderment. They said nothing to anyone, for they were afraid.[9]

Yet somehow Jesus was communicated among Christians, who have known the rest of the story since the first Christians. Both the Gospel of Luke and the Gospel of John explain their text as means to convey vitally important eye-witness testimony, rather than as the word of God that has come to them and that they have recorded.[10] The Gospel of John also states that texts cannot completely describe Jesus' life:

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[1] Paul's first epistle to the Thessalonians, one of the earliest epistles, was probably written early in the 50s G.C. Mark's gospel, generally thought to be the first gospel written, was probably written in the early 60s G.C. Luke's gospel, which provides the most detail about Mary, was probably written 80-90 G.C.

[2] Galations 4:4.

[3] Mark 6:3.

[4] Mark 3:31-35. From a Christian perspective, Mary did God's will in a magnificent way.

[5] Luke 1:26-56, 2:5-19, 34-35, 41-51, 3:23-38. Luke's gospel probably had Mark's gospel as a written resource.

[6] There is little evidence of Mary's importance to Christians before the beginning of the fifth century G.C. This is not strong evidence about the history of Marian devotion. Mary might have a major figure in Christianity before then, or she might not have been. The importance of Mary was clearly recognized at the Council of Ephesus (431 G.C.), which proclaimed her "Mother of God." Prior to the Edict of Milan (313 G.C.), persecution of Christians gave them an incentive to avoid creating widespread, enduring artifacts of popular devotion. The earliest existing image of Mary dates to about 200 G.C. It is in the catacomb of Priscilla, on the web at http://web.tiscali.it/catacombe_priscilla/pagine-eng/madonna.htm

[7] John 1:14.

[8] Moloney (2002) ch. IX.

[9] Mark 16:8.

[10] Luke 1:1-4, John 21:24.

There are also many other things that Jesus did, but if these were to be described individually, I do not think the whole world could contain the books that would need to be written.[1]

Christians believe that Christian scripture contains all that a person needs to know to have complete joy and the fullness of life, now and forever. But the Christian gospels do not closely relate sense of communication with God to text.

In contrast, the Book of Revelation, Christian scripture probably written only a few years after the Gospel of John, explicitly binds to words the sense of God's communication with humanity. The Book of Revelation records the Lord instructing its author to "[w]rite in a book what you see [in your vision]."[2] In this way the text describes its own production as a divine command, rather than leaving to readers or human institutions to recognize the text as an inspired work conveying God's words. The author's vision includes the sight of God holding a scroll.[3] This suggests God's communication with humanity is a transfer of a text. The scroll is sealed with seven seals. No man is worthy to read the scroll, but a figure of Jesus is worthy. Text thus provides a means to identify Jesus. The figure of Jesus opens the scroll and delivers its message. This gesture closely ties the message of Jesus to a text. The Book of Revelation ends with a warning about the boundaries of its text:

If any man shall add unto these things, God shall add unto him the plagues that are written in this book. And if any man shall take away from the words of the book of this prophecy, God shall take away his part out of the book of life, and out of the holy city [4]

The words of the Book of Revelation describe fantastic visual images, and the significance of its words has long puzzled readers. But there can be no question that the author of the Book of Revelation wanted readers to recognize authority in the communication of words.

Tension concerning the sense of God's communication with humanity goes to the beginning of Christianity. The sense of the mortal human body naturally encompasses much more than words. Since the development of writing, words have been able to provide eternal signs of sensuously limited authority. Tension between words and the full sense of the body is deeply related to fundamental Christian beliefs and Christian scripture. This tension has not prevented Christianity from flourishing. But by the early sixteenth century, in England and elsewhere, sensuous aspects of Christian practices created extraordinary controversy.[5]

One prominent concern was that God was being reduced to a lifeless, if not venal, device. In a satirical dialogue written by a leading European scholar early in the sixteenth century, a character, speaking often with the author's knowledge and experience, describes Our Lady of Walsingham thus:

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[1] John 21:25.

[2] Revelation 1:11, 19. Note also the iteration of the verb "write" prefacing the messages to the seven churches (Revelation 2-3).

[3] Revelation 5.

[4] Revelation 18:19 (excerpt).

[5] O'Connell (2000) explores this controversy in relation to the theatre. While providing fascinating analysis of sensuous choices in communication and emphasizing the importance of incarnation, he does not quite escape the scholarly tendency to pit senses against each other. E.g. id. pp. 4-7, 128, 144. For a review of such scholarship, see Chandler, n.d.

She has the greatest fame throughout England, and you would not readily find anyone in that island who hoped for prosperity unless he greeted her annually with a small gift, according to his means.[1]

Another dialogue describes a priest, who claims to have studied alchemy, preying on a wealthy churchman keen to succeed in alchemy. The priest "suggested that their business would succeed better if he sent some gold crowns as an offering to the Virgin Mother who, as you know, is venerated at Paralia." "Paralia" is an illusion in Greek to the shrine of Our Lady of Walsingham.[2] The priest takes the money and sets out on pilgrimage. He goes as far as the next village, where he spends the money "in riotous living."[3] While the offering to the Virgin Mary yields no results for the patron's alchemy, the priest, later caught *flagrante delicto* in a courtier's wife's bedroom, discovered that "the offering that we made to the Virgin Mother was not altogether wasted." The priest explained to his patron:

I would certainly have been killed if she had not come to my rescue. The husband was breaking down the door; the window was too narrow for me to slip through. In so imminent a danger I thought of the Most Holy Virgin. I fell on my knees and implored her, if the gift had been acceptable, to help me. Without further delay I tried the window again – my plight forced me to do so – and found it wide enough for my escape.[4]

Humans have a natural propensity to truck and barter, and a natural propensity to be interested in sex, especially in stories of sex involving priests. Desires for money and sex undoubtedly were sources of corruption and controversy in early sixteenth-century Christianity.

But money and sex probably did not make an unusual contribution to popular turmoil in Christian worship in sixteenth-century England. There is no evidence of a significant change in the relationship between Christian sensibility and sex in sixteenth-century England. As for money, in 1535 the offerings "in the chapel of the Blessed Virgin Mary" at Walsingham totaled £ 250.[5] The offerings at Walsingham were more than at any other shrine in England, including the famous shrine of Thomas à Becket.[6] However, measured by the value of offerings, Our Lady of Walsingham ranked rather low despite her great fame.[7] The offerings to her amounted to about the income of two knights or six Cambridge professors.[8] Scaled by per capita income, the offerings at Walsingham are equivalent to $3.7 million in the U.S. in the year 2000.[9] That figure

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[1] Erasmus, "Pilgrimage" (1526) at Thompson (1997) pp. 628-9.

[2] Erasmus, "Alchemy" (1524) at Thompson (1997) p. 550.

[3] Id.

[4] Id. p. 552.

[5] Dickinson (1956) p. 60. The figure is from the Valor Ecclesiasticus, a comprehensive survey of religious establishments' revenues in 1535. A letter from a government agent in July 1536 reported that, from Saturday night until the following Sunday, visitors offered £ 6.67. This figure implies yearly revenue about £ 290. Neither figure includes the value of special gifts of jewelry, land, and other valuables.

[6] Finucane (1977) p. 205.

[7] Monetary offerings were sensuously discriminating. Offerings at Walsingham "in the chapel of St. Laurence" (probably St. Laurence O'Toole, a twelfth century Irish saint who was the first Irish bishop of Dublin and famous as a peacemaker) and at the relic of the "Holy Milk of the Blessed Virgin Mary" amounted to £ 8.45 and £ 2.11, respectively. Dickinson (1956) p. 60.

[8] In 1540 Henry VIII established five professorships at Cambridge, each one with an annual salary of £ 40. Dickens (1989) p. 177. There were about 500 knights in England in 1524, and their normal range of income was £ 120 to £ 200. Britnell (1997) p. 191.

[9] Mayhew (1995) estimates national income and population in England in 1526 as £5m. and 2.3m., respectively. These figures imply per capita income of £2.17. Offerings in the chapel of Mary at Walsingham were 115 times this

is about a tenth of the U.S. opening weekend receipts for the movie "Hannibal," perhaps a fiftieth of the annual U.S. receipts of leading televangelists, and perhaps one-thousandth of annual U.S. telemarketing fraud.[1] Popular attitudes toward images of Mary and other sensuous aspects of worship probably were only superficially related to sexual and monetary corruption.

The center of controversy was the sense of words and images in Christians' communication with God. Printing technology greatly expanded possibilities for reproducing scripture, and translation of scripture into English meant that many more persons could read it. The opening of scripture was no longer associated with a particular object in a particular place. Scripture became accessible everywhere to persons with even minimal learning and motivation. Some leading Christians began to denounce some aspects of worship as idolatry, superstition, hocus pocus, and ignorance:

> some (which is greatly to be regretted) have ven
> erated images to the point of putting their faith in
> them, being persuaded that they have extraordi
> nary power and holiness, while others have made
> offerings to images and undertaken long pilgrim
> ages in order to see them, believing that God,
> thanks to the image, will hear them better in one
> place than in another[2]

They sought to purify Christianity of doctrines and practices thought not to come from the word of God:

> The Romish doctrine concerning purgatory, par
> dons, worshipping and adoration as well of im
> ages as of relics, and also invocation of saints, is
> a fond thing vainly invented, and grounded upon no warranty of Scripture, but rather re
> pugnant to the Word of God.[3]

Rejecting what is false or wrong has traditionally and commonly been considered to be an admirable human activity.[1] Many persons now consider many other Christian beliefs to be supersti-

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figure. Per capita income in the U.S. in the year 2000 was $32,600. Multiplying this figure by 115 gives the scaled estimate.

[1] In its first three days shown, Feb. 9-11, 2001, "Hannibal" generated $58 million in box-office revenue. See http://baseline.hollywood.com/blgr.asp. Schultze (1991), pp. 29, 35, estimates that Jimmy Swaggert had an annual budget in 1986 of $140 million, and leading televangelists spent over $48 million per year on TV stations and TV networks.   Adjusted for consumer price inflation, these figures are equal to $226 million, and $78 million per year in year 2001 dollars. Binny Hinn is currently a leading televangelist. NBC News, Dateline, Dec. 27, 2002, stated that estimates of Benny Hinn's ministry revenue exceed $100 million per year. Transcript available at http://www.rickross.com/reference/hinn/hinn20.html   The U.S. Congress's Committee on Government Operations cited estimates of telemarketing fraud ranging from $3-40 billion per year. In about 100 federal cases that the FTC brought for telemarketing fraud from Oct. 1995 to Dec. 1996, the average annual consumer loss per case was $2.5 million. See FTC (1997), "Executive Summary," and ft. 1.

[2] Archbishop Cranmer, article on "images," composed about 1538. See Bray (1994) p. 219.

[3] The text given is from article 22, adopted by the Church of England in 1571 and still an important part of Church of England doctrine. Substantially the same article was issued in 1553 and 1563. See Bray (1994) pp. 284, 297.

tious, ignorant, or merely highly imaginative in a way not deserving of respect. A distinctive feature of sixteenth-century England was that central religious and political authorities associated distinguishing between true and false beliefs with separating the sense of words from other, corrupting senses.[2] Arguments about beliefs and knowledge became arguments over the sense of communication with God.

Confining sense to words was a difficult challenge. It was not enough to call images false gods and to preach proper worship of God. It was even not enough to present a different view of a venerated statue:

> *By Cromwell's order the statue [of Our Lady of Worcester] was stripped of the gaudy*

> *trappings in which the mistaken piety of the ignorant people had arrayed her; and lo! It was no image of the Virgin at all, nor of any other female, but the statue of some long-deceased bishop of the diocese! Superstition was thus laughed to scorn; yet there were some who could not, even by this exposure, be convinced of their folly. On the eve of the feast of the Assumption of Mary, a citizen of Worcester came up to the figure, which had been the general laughing-stock for some days, and in a voice of strange emotion exclaimed, "Ah, lady, art thou stripped now? I have seen the day that as clean men had been stripped at a pair of gallows, as were they that stripped thee." Then he kisses the image, and turns to the people, and says, "Ye that be disposed to offer, the figure is no worse than it was before." [3]*

This person's sense defied visual discipline. What he understood the statue to be shaped what he saw and how he acted. Stripping the statue did not change his understanding: "the figure is no

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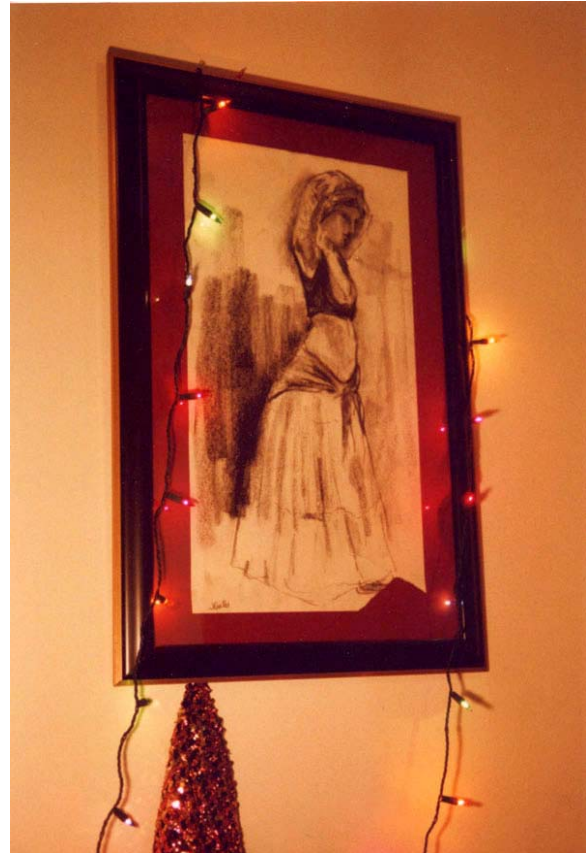
[1] An important recent scholarly development in the humanities has been to emphasize complexity, ambiguity, multiplicity, and contingency in one's scholarly conclusions. Contra Eccles. 11:3: "If a tree falls to the south or to the north, wherever it falls, there it is." Trans. Kugel (1999) p. 115.

[2] Concern about sense covered all the capabilities of the living human body. On idolatry of the mind, see Ashton (1988) pp. 452-66. The Lollards in fourteenth and fifteenth century England criticized corrupt religious practices, including aspects of the use of religious imagery and the practice of pilgrimages. But Lollard criticisms was narrower and more diffuse than sixteenth century concerns and did not create an organized, national political and religious struggle. See Aston (1984) Ch. 5.

[3] Demaus (1903) p. 288. One primary source is Letters and Papers, v. 14, part. 2, no. 402, p. 155, an account written by Lord Derby, which states, "Refers to Our Lady of Worcester which, when her ornaments were taken off, was found to be the similitude of a bishop, like a giant, almost 10 ft. long." Id., v. 12, part 2, no. 587, p. 218 documents the case of the citizens remarks. Two different versions, that of a witness and that of the citizen's confession, are given. The quoted version is a slighted abbreviated version of the witness's testimony. Duffy (1992) p. 403 includes a sentence from the citizen's confession.

worse than it was before." Mary is a figure written in words of scripture. But the Assumption of Mary is not described in scripture, nor is making offerings to her. The sense of both developed over time in a way that could not be easily repressed.

In seeking to limit sense of scripture to words, national authorities created elaborate spectacles of idol destruction. From 1535 to 1538, all Christian pilgrimage shrines in England were destroyed. A contemporary chronicle described one component of this action:

> *The images of Our Lady of Walsingham and [Our Lady of] Ipswich were brought up to London, with all the jewels that hung about them, at the King's commandment, and divers other images, both in England and Wales, that were used for common pilgrimages [including famous images of Mary attracting pilgrims to Worcester, Doncaster, and Penrise], because the people should use no more idolatry onto them, and they were burnt at Chelsey by my Lord Privy Sea [Lord Cromwell].*[1]

The images of Mary were burned, just like heretics – living persons – were burned. An expansive sense of these images was affirmed as they were destroyed, not with words, but with flames.

Another incident connected image and person more directly while bizarrely invoking the authority of words. A wooden statue of Derfel Gadarn, much honored at his shrine in Northern Wales, was taken to London and burned along with friar John Forest, who had been confessor to Catherine of Aragon and refused to renounce Roman Catholicism. Burning the statue of Derfel Gadarn along with friar Forest in part enacted a pun on a popular prophecy that Derfel Gadarn would one day set a forest on fire. Present at the execution of the statue and the friar were an array of dukes, earls, bishops, and a crowd contemporarily estimated at more than ten thousand persons. Hugh Latimer, who had been chaplain to King Henry VIII and was appointed Bishop of Worcester, preached a sermon from a specially constructed platform before the bonfire.[2] This elaborate spectacle of destruction indicates lack of confidence in the sense of words alone.

A confrontation in 1578 between Queen Elizabeth I and an image of Mary, the mother of Jesus, indicates the strength of non-verbal sense. While traveling, Elizabeth stayed at a recusant's estate. As she prepared to leave, a search for a missing piece of royal furnishing discovered an image of Mary hidden in a haystack. A notoriously anti-Catholic royal agent traveling with Elizabeth reported:

> *such an image of our Lady was there found, as for greatness, for gayness, and workmanship, I did never see a match; and, after a sort of country dance ended, in her Majesty's sight the idol was set behind the people, who avoided: She rather seemed a beast, raised upon a sudden from Hell by conjuring, than the Picture for whom it had been so often and long abused. Her Majesty commanded it to the fire, which in her sight by the country folks was quickly done, to her content, and unspeakable joy of every one but some one or two who had sucked of the idol's poisoned milk.*[3]

Elizabeth was honored with praise, iconography, and ritual similar to that used earlier to honor Mary, the mother of Jesus.[4] Concern about idolatry focused on images of Mary. Here the real presence of Elizabeth, full of sense, vanquished an image of Mary.

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[1] Wriothesley's Chronicle, in entries for 1538. See Hamilton (1875-77) p. 83.

[2] The above facts about the burning of friar Forest and Derfel Gadarn are from Aston (1993) p. 303 and Wriothesley's Chronicle, entry for 1538, in Hamilton (1875-77) p. 78-81,

[3] From letter of Richard Topcliffe, 30 Aug. 1578, quoted in Hackett (1995) pp. 1-2.

[4] Id. explores in detail the relationship between representations of Elizabeth and Mary.

The power of Mary's image was explicitly acknowledged. The people avoided the image as if it were itself dangerous. The iconoclastic royal agent sensed in the image not just a picture but "a beast, raised upon a sudden from Hell by conjuring." He also described the danger of sucking the idol's poisoned milk. This sensuous figure resonates with paintings of Mary nursing Jesus, venerated relics of the milk of Mary, and stories and paintings of twelfth-century Saint Bernard receiving Mary's breast milk in his mouth.[1] Those who sought to confine sense to the words of scripture recognized other senses and struggled to repress them.

Those who asserted the primacy of images no more successfully subordinated words. A leading English scholar and statesman wrote in 1528:

> *they agree that the name of Jesus is to be reverenced and had in honor, then since that name of Jesus is nothing else but a word, which by writing or by voice represents onto the hearer the person of our savior Christ, fain would I wit [learn] of these heretics, if they give honor to the name of our lord, which name is but an image representing his person to man's mind and imagination, why and with what reason can they despise a figure of him carved or painted which represents him and his acts far more plain and more expressly.*[2]

Post-modern scholars have produced a deluge of words describing representation. Just this one clause might cause rapidly spreading semiosis: "that name of Jesus is nothing else but a word, which by writing or by voice represents onto the hearer the person of our savior Christ." The same sentence above also indicates that the word is just an epiphenomenon, while the image is the mental representation: "the name of our lord, which name is but an image representing his person to man's mind and imagination." Words, from this perspective, are just means to evoke an image. This seems like a rather partial and cynical account of the verbal scholarly enterprise. Surely most scholars seek to do more than just create images. In sixteenth-century England, scholars who valued artifacts of religious imagery also in practice revered the word of God as a specific text.

More traditional economic considerations supporting images also became entangled in words. The same scholar noted that text can be corrupted and portions lost. According to this scholar, God recognized this problem and provided living law: "and so was it convenient for the law of life rather to be written in the lively minds of men than in the dead skins of beasts."[3] Law and writing suggest words. Persons communicating with each other might pass down through generations words not inscribed in texts, but words communicated in this way probably would be more likely to be corrupted or lost than words conveyed in text. What is to be communicated thus seems to include an important sense of God not reducible to text. Other evidence from the author's text affirms a sense of God evoked by richly detailed and colored, three-dimensional figures.[4] Yet this sense seems rather distant from the (verbal) metaphor "the law of life…written in the lively minds of men."

Battling to affirm images in early sixteenth-century England, this scholar produced a staggering number of words. Between 1528 and 1534, he produced perhaps a million printed words in dialogues, answers, and confutations defending Christian practices asserted to be beyond the

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[1] On breast milk in stories and paintings, see Freedberg (1989) pp.288, 290, 305-6 and Erasmus, "Pilgrimage" (1526) at Thompson (1997) pp. 632-3, 636.

[2] Thomas More, Dialogue Concerning Heresies (1528) in Lawler, Marc'hadour and Marius (1981) pp. 39-40. I have modernized spelling in this and all subsequent quotes to aid readers not fluent in English.

[3] Id. p. 144.

[4] See quote in previous paragraph, *infra*.

sense of scripture.[1] One of his works, written as a dialogue, begins with "a preface of bewilderingly self-conscious fictionality, analysing its own writtenness."[2] At first the author thought it enough to have a messenger relay orally the author's "mind" to his interested friend. But, thinking more, he recognized that his communication with the messenger had been "so diverse and so long," and "suchwise intricate that myself could not without labor call it orderly to mind."[3] Because some parts of the matter "rather need be attentively read and advised than hoverly [lightly] heard and passed over," and to insure against the messenger distorting the discussion, the author decided to put the communication in writing.[4] Thinking further, the author recognized the possibility that adversaries might print and thus widely circulate a corrupt version of his writing. The author decided to publish a text of his words to help ensure that they would be truly known.[5] This scholar thus recognized that written and widely reproduced words play a key role in disciplining interpretation of a message and limiting possible distortions of it.

Given the state of communications technology in early sixteenth-century England, publishing usually meant making public an artifact (book) that had a predominate sense of words. The Book of Martyrs, however, championed a new/recovered fidelity to the word of God with highly successful use of illustrations and physical heft. From the first edition in English in 1563 through the ninth edition in 1684, this work, also known as Foxe's Acts and Monuments, was for its publishers an "unbroken and unqualified success." About ten thousand copies of the book were sold, making it a best-seller for its time.[6] Unlike all other major contemporary martyrologies emphasizing a similar sense of scripture, this work included more than fifty woodcut illustrations. These illustrations were "immediately recognized as one of the book's most effective and distinctive features."[7] The illustrations were enormously influential and became central to the self-understanding of Christianity in England. The book also contained many words. The second edition, printed in 1570, consisted of two large volumes, about 2300 pages, and 2.5 million words.[8] It began with Jesus recognizing a rock upon which to build his church and traced a history of heroic fidelity to God's words from this beginning to the present.[9] The book was not structured as a narrative to be read from beginning to end. Given its heft, the number of persons

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[1] Cummings (1999) pp. 833-4.

[2] Id. p. 837. The preface is Thomas More, A Dialogue Concerning Heresies (1528), preface, pp. 21-4 in Lawler, Marc'hadour and Marius (1981).

[3] Id. p. 21

[4] Id.

[5] Id. p. 22.

[6] Williamson (1965) p. x, xxv-vi; Haller (1963) p. 13-4. Books written by academics today regularly sell less than two thousand copies.

[7] Pettegree (2002) p. 133-4, Williams (2002) p. 198. Haller (1963) p. 13 states that the first English edition (1563) was illustrated "with over fifty woodcuts." The last edition that Foxe himself wrote had about 170 woodcut illustrations, some "very costly to produce." Williamson (1965) pp. xx, xxvi.

[8] Id. p. xxv. The word count is from the description of an electronic version of the text, available at http://www.oup.co.uk/academic/humanities/history/foxe/details/ A mid-Victorian edition, which was the most recently available edition before 1965, consisted of "eight bulky volumes, six thousand pages, and over four million words." Id. p. ix.

[9] The beginning section "To the Reader" explicitly refers to Matthew 16:18 and explains "which prophecy of Christ we see wonderfully to be verified, insomuch that the whole course of the Church unto this day may seem nothing else but a verifying of the said prophecy." Williamson (1965) p. xliv. The recounted history of the Church emphasizes persons who were martyred by Roman Catholic authorities. This understanding of Church and this appropriation of rock naturally tends toward a sense of book as rock.

who have done so has probably been few. But as a large physical object, the book provided an impressive sense of the solid foundation of the Church of England.[1]

Battles over sensuous practices in religious worship affirmed the integration of sense across sensory modes.   Images were not verbally deconstructed – explained into oblivion or by words rendered impotent. Images were ritually removed and spectacularly destroyed. Defenses of images and sensuous aspects of worship generated millions of printed words.[2] Over time, the extent of sensuous stimuli in religious worship was objectively reduced. Yet the effect was not to reduce sense to words: "Extremist purifiers, aiming to free believers from the religious clutter that had endangered their forebears, found spiritual meaning in blank walls and silence…."[3] Finding "spiritual meaning in blank walls and silence" does not imply limited physical capabilities. It describes the making of a different sense.[4] Because the nature of the living human body did not change, persons continued to make sense with all the sense of their bodies.

B. What's in a Name?

Long after the destruction of Christian shrines in England, the sense of worship there endured. Imagine: at a party, a young man sees dancing a young woman whom he has never before met, a young woman so radiant "she doth teach the torches to burn bright." While just moments earlier he had been in no mood for dancing, he immediately decides to take her hand for the next dance, "And, touching hers, make blessed my rude hand." Here are the words they speak when they meet:

Romeo [to Juliet]:	*If I profane with my unworthiest hand*
	This holy shrine, the gentle fine is this:
	My lips, two blushing pilgrims, ready stand
	To smooth that rough touch with a tender kiss.
Juliet:	*Good pilgrim, you do wrong your hand too much,*
	Which mannerly devotion shows in this;
	For saints have hands that pilgrims' hands do touch,
	And palm to palm is holy palmers' kiss.
Romeo:	*Have not saints lips, and holy palmers too?*
Juliet:	*Ay, pilgrim, lips that they must use in prayer.*
Romeo:	*O, then, dear saint, let lips do what hands do;*
	They pray, grant thou, lest faith turn to despair.

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[1] The Second Royal Injunctions of Henry VIII (1538), item 2, recognized the importance of textual heft. The second item of those injunctions required to be place in every church "one book of the whole Bible *of the largest volume*" [italics added]. In Bray (1994) p. 179.

[2] Books were also spectacularly destroyed. Cummings (2002) argues, "the history of iconoclasm and idolatry cannot be separated in mid-sixteenth-century England from a parallel history of bibliolatry and biblioclasm" (p. 199).

[3] Aston (1993) p. 288.

[4] The Hebrew Bible associates an empty space with the place where God appears (Kugel (2003), ch. 4) and describes a sense of starkness as an important part of religious experience (id., ch. 6). In the Christian Gospels, preparing for action and discerning God's will is associated with desolate places (wilderness about Galilee, i.e. a desert, or a mountain top; see, e.g. Mat. 4:1-11, Mark 3:13, 6:46, 9:2, Luke 3:2).

Juliet:	Saints do not move, though grant for prayers' sake.
Romeo:	Then move not, while my prayer's effect I take.[1]

When this was written, it had been about sixty years since religious pilgrims ("palmers") had visited the holy shrines of Our Lady of Walsingham and other saints. There pilgrims touched holy statues, pressed palms together in prayer, and spoke requests to saints who did not move. Sensuous forms of worship there, long repressed, appear here as figures in flirting between earthly persons. The next quatrain plays out further this transformation:

Romeo:	Thus from my lips, by yours, my sin is purged.
Juliet:	Then have my lips the sin that they have took.
Romeo:	Sin from thy lips? O trespass sweetly urged!
	Give me my sin again.
Juliet:	You kiss by the book.

This communication is by the book, and not at all by the book. The senses of image and word are not resolved but enmeshed in the act of kissing.[2]

The common sense that encompasses image and word is the real, material presence of a person. What is the significance of a kiss by the book, a kiss resulting from a dialogue that takes the form of a sonnet? Juliet impatiently reasons that a name is no part of a person, and offers an extravagant trade for this mere word:

What's Montague? it is nor hand, nor foot,
Nor arm, nor face, nor any other part
Belonging to a man. O, be some other name!
What's in a name? that which we call a rose
By any other name would smell as sweet;
So Romeo would, were he not Romeo call'd,
Retain that dear perfection which he owes
Without that title. Romeo, doff thy name,
And for that name which is no part of thee
Take all myself.[3]

Yet Juliet yearns to cry out Romeo, not to call the person but to fill the air with that name:

Bondage is hoarse, and may not speak aloud;
Else would I tear the cave where Echo lies,
And make her airy tongue more hoarse than mine,
With repetition of my Romeo's name.[4]

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[1] This dialogue forms a sonnet, a leading poetic form in Shakespeare's time. All the quotations in this paragraph are from William Shakespeare, Romeo and Juliet, Act 1, Scene 5 (1.5.44, 1.5.51, 1.5.93-106, 1.5.107-110), in the edition of the Pelican Text Revised, Harbage (1969). All quotations from Shakespeare's plays are from that edition, unless otherwise noted.

[2] To generalize slightly, "the word in living conversation is directly, blatantly oriented toward a future answer-kiss…." Cf. Bakhtin, "Discourse in the Novel" (1934-35), in Holquist (1981) p. 280.

[3] Shakespeare, Romeo and Juliet, Act 2, Scene 2 (2.2.40-49).

[4] Id. 2.2.160-163. Viola/Cesario similarly declares that she/he would cry out for his beloved:
Hallo your name to the reverberate hills
And make the babbling gossip of the air
Cry out 'Olivia!'
Shakespeare, *Twelfth Night*, Act I, scene v, l. 258-60.

All these words were written for an actor to speak in a play. Attempting to separate Juliet's name from sounds and images, whether on the stage or in one's brain, would be as vain as to declare her significance.

What is true for Juliet is also true for Mary in history. As recorded in the text of Exodus, Miriam, the Hebrew source for the name Mary, was the name of the prophetess, the sister of Aaron, who led the women of Israel with a timbrel, song, and dance to celebrate the Lord's triumph at the Red Sea.[1] Miriam became a popular name among Jewish women in the time of the Second Temple.[2] In the Christian New Testament, Mary is the most frequent name for a woman and the name of the mother of Jesus.[3] Some early Christians, such as Mary of Egypt, a fifth-century saint, bore the name Mary.[4] Mary is the only woman mentioned by name in the Qur'an. Her name forms the title for surah 19 of the Qur'an. In this surah she is associated with Aaron's sister Miriam.[5] The first documented use in England of Mary as a personal name was at the end of the twelfth century. About 1350, the share of females named Mary in England was less than 1%.[6] Among Christians in England prior to the sixteenth century, Mary was remembered and celebrated, not usually in naming persons, but through invoking this name in prayer and venerating Mary at shrines featuring richly decorated statues of her.[7]

The battle over common sense in England in the sixteenth and seventeenth centuries directly concerned Mary. In 1534, King Henry VIII repudiated Roman Catholic authority, declared himself head of the Church of England, and deployed royal power to change sensuous practices of religious worship. All Christian shrines, including that of Our Lady of Walsingham, were destroyed from 1535 to 1538.[8] A Royal Injunction in 1538 ordered clergy, in one sermon every quarter of the year, to exhort listeners

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[1] Exodus 15:20-1.

[2] Yonge (1884) p. 23 cites the popularity of Miriam among Second Temple Jews. Kugel (1997) p. 351 gives the fragments of a song attributed to Miriam and found among the Dead Sea Scrolls. This is evidence of continuing high regard for Miriam. A woman named Mariamne married Herod the Great in 38 B.G.C. and was executed by him in 29 B.G.C. Jews had reason to admire Mariamne and despise Herod. See Josephus, Antiquities, Book 15, Ch. 7. Mariamne probably added to the popular value of the name Miriam.

[3] The name Mary occurs 51 times in the New Testament, and probably six different women are named Mary. Lockyer (1996) pp. 92-108.

[4] On Mary of Egypt, see Catholic Encyclopedia, available at http://www.newadvent.org/cathen/09763a.htm

[5] In Maryam 19:27-8, the people address Mary thus: "O Mary! Truly an amazing thing Hast thou brought! O sister of Aaron! Thy father was not a man of evil, nor thy Mother a woman unchaste!" (trans. Abdullah Yusef Ali). The phrase "O sister of Aaron" is used as an introductory exclamation subsequent to and in parallel with "O Mary," and it precedes a sentence focusing on Mary's virtuous genealogy. "O sister of Aaron" does not imply mistaken identification of Mary as literally the sister of Aaron. A more faithful and reasoned interpretation is that the honored memory of Miriam, the prophetess and sister of Aaron, is being evoked and associated with Mary. Cf. Pelikan (1996) pp. 72-5.

[6] See Appendix A.

[7] Belief in Mary's virginity, even virginity *in partu,* has not historically separated Mary from ordinary experiences of desire, sex, and childbirth. Christians have long identified Mary with the woman in the Song of Songs, a sacred text that, as Kugel (1999) pp. 276-8 makes clear, is both intensely personal and "the holy of the holies." Popular relics such as "Our Lady's girdle" brought Mary to personal concerns about pregnancy and childbirth. See Duffy (1992) pp. 384-5.

[8] In 1535, royal commissioners confiscated, among other relics, Our Lady's girdle, which women visited for comfort in childbirth, and "the boots of Thomas Becket and Saint Edmund's nail-pairings and 'other reliques in divers places which they [the clergy] use for covetousness in deceaphing the people.'" Finucane (1977) p. 204. As late as March, 1538, Henry VIII paid to have a candle burning and a priest singing before Our Lady of Walsingham (43s, and 100s, respectively). Webb (2000) p. 289, n. 134. By the end of July, 1538, the shrine of Our Lady of Walsingham had

> *not to repose their trust or affiance in any other works devised by men's fantasies beside Scripture; as in wandering to pilgrimages, offering of money, candles, or tapers to images or relics, or kissing or licking the same, saying over a number of beads, not understood or minded on, or in such-like superstition*[1]

Pilgrimages to shrines of Mary, placing lit candles and monetary offerings in front of images of her, saying with the aid of beads a repetitive prayer calling out to Mary, praising Mary, and asking Mary to join with the speaker in prayer (the "Ave Marie" or "Hail Mary") – all these were popular Christian practices in England at the time of this injunction. The popular sense of Mary thus became highly controversial.

Controversy over Mary even spread to the text of the Bible. In 1560, English exiles in Geneva completed a new English translation of the Bible. This translation, known as the Geneva Bible, was the most popular bible in England for three-quarters of a century following its publication.[2] The Geneva Bible came after the Tyndale translation (1525) and the Great Bible (1540), both of which challenged Roman Catholic authority. Tyndale and the Great Bible translated the angel Gabriel's greeting to Mary as "Hail, full of grace," echoing the Vulgate's "Ave, gratia plena." The Geneva Bible, in contrast, translated the greeting as "Hail, thou that art freely beloved."[3] This change emphasized God's choice, rather than Mary's merit. In the Geneva Bible, an annotation included in a column to the left of the column of scripture explained why God chose Mary: "Not for her merits: but only through God's free mercy, who loved us when we were sinners, that whosoever rejoices, should rejoice in the Lord."[4] While Tyndale and the Great Bible translated Elizabeth's praise of Mary as "Blessed art thou among women, and blessed is the fruit of thy womb," the Geneva Bible translated this verse as "Blessed art thou among women, because the fruit of thy womb is blessed." A nearby annotation explained: "He shows the cause why Marie was blessed."[5] These new words of scripture and nearby annotations intensified controversy over the sense of Mary.

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been destroyed, and the statue of Our Lady of Walsingham burnt. All other shrines were destroyed by the end of 1538.

[1] Second Royal Injunctions of Henry VIII (1538), from item 6, in Bray (1994) p. 180.

[2] As Weigle (1964) p. viii states:

> *It became at once the people's book, the household Bible of the English-speaking nations; and it held this place for three quarters of a century. It was Shakespeare's bible; and it was the Bible of the Puritans who settled New England. Between 1560 and 1644 at least 140 editions of the Geneva Bible or New Testament were printed; and it lasted longer in competition with the King James Version than any other English version.*

While the Geneva Bible is regularly called Shakespeare's bible, Shakespeare's highly developed theological sensibility suggests that he was familiar with the Vulgate, the Bishops' Bible of 1568/1572, and the Rheims New Testament as well. He may have assisted in the translation of the King James Bible.

[3] The quoted text is Luke 1:28, given in eight historically important translations in Weigle (1962). Annotations on the pages of the books that embodied these translations are not, however, included.

[4] The Geneva Bible, facsimile edition of 1560, ant. f., placed after "for" in Luke 1:30, "for thou hast found favour with God.," and printed to the immediate left of Luke 1:29-30. See Berry (1969).

[5] Luke 1:42. See Weigle (1962) for translations. The annotation is ant. c, placed before "fruit" in the Geneva Bible, 1560 edition, translation of this passage. See Berry (1969).

The Rheims New Testament of 1582 and a burgeoning polemical literature responded to the Geneva Bible's treatment of Mary. The Rheims New Testament re-affirmed the pre-Geneva translations of key Marian passages, including "Hail, full of grace." In doing so it challenged banning in England the prayer "Ave Marie," which begins in English "Hail Mary, full of grace." The Rheims New Testament included annotations emphasizing the merits of Mary and the importance of the prayer "Ave Marie":

> 28. Hail full of grace.) Holy Church and all true Christian men do much and often use these words brought from heaven by the Archangel, as well to the honor of Christ and our Blessed Lady, as also for that they were the words of the first glad tidings of Christ's Incarnation and our Salvation by the same, and be the very abridgement and sum of the whole Gospel. In so much that the Greek Church used it daily in the Mass.
>
> 28. Full of grace.) Note the excellent prerogatives of our Blessed Lady, and abhor those Heretics which make her no better than other vulgar women, and therefore take from her fullness of grace, they say here, Hail freely beloved, contrary to all significations of the Greek Word, which is at the left...[1]

A related polemic in 1582 declared that banning the prayer "Ave Marie" was tantamount to banning (correctly translated) scripture.[2]

New polemics and new translations responded to the Rheims New Testament. Just one year after its publication, a Cambridge professor produced a 607 page response. This work, which also included marginal notes in Greek and Hebrew, stated:

> The salutation of the Virgin may be said still, either in Latin or English, as well as any part of the holy scripture beside; but not to make a popish orison of an angelic salutation. That we have translated "Hail Mary, freely beloved," or "that are in high favor," we have followed the truth of the Greek word, not so denying thereby, but that virgin Mary, of God's special goodness without her merits, as she confesses, was filled with all gracious gifts of the Holy Spirit, as much as any mortal creature might be....[3]

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[1] These annotations, keyed to the verse number (28, i.e. Luke 1:28), are printed at the end of Luke, Chapter 1. To the left of the first is the marginal note, "Often saying of the Ave Marie." Other notes, of a distinctively Roman Catholic character, and often polemical, are included on the right side of the single column of scriptural text. To the right of the text of Luke 1:28 is a marginal note, "The beginning of the Ave Marie. See the rest v. 42." See Rogers (1979), a facsimile of the Rheims New Testament of 1582. As elsewhere, I have modernized spellings to aid readers not fluent in English.

[2] "…what was ever more common, and is now more general and usual in all Christian countries, than in the Ave Marie, to say, Gratio plena, "full of grace;" insomuch that in the first English bible it hath continued so still, and every child in our country was taught so to say, till the Ave Marie was banished altogether, and not suffered to be said, neither in Latin, nor in English?" Gregory Martin, A Discovery of the Manifold Corruptions of the Holy Scripture (1582), point 4, in W. Fulke (1583), printed in Hartshorne (1843), p. 528. Martin, an Oxford professor who fled to Douay in 1570 and became a Catholic priest, did the Rheims translation of the New Testament. Unlike the first line of the prayer "Ave Marie," the scriptural text of the angel's greeting does not include the name Mary.

[3] Id. Elsewhere, Fulke gives a catalogue of thirty-eight "popish books, either answered [34] or to be answered [4], which have been written in the English tongue from beyond the seas, or secretly dispersed here in England" since 1559. See Gibbings (1848) p. 1. The scholarly vitality of that time is every bit equal to that in some intellectual

Footnote continued on next page.

A 1602 edition of the Geneva Bible translates the greeting as "Hail, thou that art freely beloved," but evidently saw the need to include a new annotation acknowledging the controversy:

> *It might be rendered word for word, full of favor and grace, and he shows straight after, laying out plainly unto us, what that favor is, in that he says, "The Lord is with thee."* [1]

The King James Bible in 1611 put forward a translation similar to that in popular English translations today: "Hail, thou that art highly favored."[2] The King James translation also restored Luke 1:42 to the text in the Rheims translation and in English translations prior to the 1560 Geneva Bible: "Blessed art thou among women, and blessed is the fruit of thy womb." The King James Bible did not include any interpretive annotations.[3] In this way it encompassed different possibilities for making sense of these passages.

While sixteenth-century polemics analyzed these passages as a matter of philology, these passages are deeply entangled in the life of Mary and in the lives of subsequent Christians. The earliest texts of Luke's gospel are written in Greek. Mary was a young, poor, Hebrew woman. She probably neither understood Greek nor spoke Greek. In communicating with the angel Gabriel, or in recounting what happened, Mary would have spoken Hebrew or Aramaic. Christian scripture, which Christians understand to be the inspired word of God, records Gabriel's spoken greeting in Greek translation. Understanding even just what is generally translated as "hail" requires dramatic sense and knowledge of the rest of the story:

> *The word the angel uses is* chaire – *the common Greek form of greeting, certainly. But if the Hebrew source used by Luke had had the ordinary Jewish form of greeting, shalom, "peace", he would very likely have translated it by the corresponding Greek word* eirene. *Instead he used* chaire – *and, we are told further, Mary was troubled "and thought by herself what manner of salutation this should be." ... On the lips of the angel* chaire *is not merely a simple greeting – indeed, it would seem absurd if he introduced his tremendous mission of announcing the birth of the divine Saviour of the world with words corresponding to "Good moring" or "How do you do?" In the narrative of the Annunciation* chaire *retains the full force of its original meaning "Rejoice" – and this is how it is used*

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fields and administrative proceedings in the U.S. today. For example, one of Fulke's works is entitled, "A Rejoinder to John Martiall's reply against the answer of Master Calfhill to the blasphemous treatise of the cross" (1580). This work begins "To the Reader   Of all the treatises sent over within these twenty years from the Papists, there is none in which appeareth less learning and modesty, nor greater arrogance and impudency, than in this one book of Martiall. Who, as he termeth himself a Bachelor of Law, so, more like a wrangling petty-fogger in Law than a sober student in Divinity, doth in a manner nothing else but cavil, quarrel, and scold." Id. p. 125.

[1] Note z, placed following "thou art" and to the right of the scriptural text (Luke 1:28). Geneva Bible, 1560 edition, ant. f, cited earlier *infra,* was eliminated. However, the exclamation in Luke 1:42 continued to be translated, "Blessed art thou among women, because the fruit of thy womb is blessed." The annotation was changed to "Christ is blessed in respect of his humanity." (ant. p, placed following "because"). See Geneva Bible, facsimile of 1602 edition of the New Testament, in Sheppard (1989).

[2] See Weigle (1962). For an array of contemporary translations, see http://www.blueletterbible.org

[3] In 1604, James I ordered "That a [new] translation be made of the whole bible, as consonant as can be to the original Hebrew and Greek; and this to be set out and printed without any marginal notes, and only to be used in all churches of England in time of divine service." This order indicates the significance of marginal notes at that time. The companies performing the translation drew up "The Rules to be observed in the Translation of the Bible." Rule 6 was: "No marginal notes at all to be affixed, but only for the explanation of the Hebrew or Greek Words, which cannot without some circumlocution, so briefly and fitly be express'd in the Text." See id. p. ix. No notes whatsoever were attached to Luke 1:28-45.

in the great messianic prophecies of the Old Testament...[Zeph. 3:14, Joel 2:21, Zech. 9:9].[1]

"Hail" is a non-semantic marker of recognition typically preceding communication. "Rejoice" is a call to celebration. Christians believe that recognizing Jesus is the sure way to God, and that Jesus coming to be with humanity is reason for celebration. The words of the greeting play across this sense of Christian life.

In sixteenth-century English life, Mary had another, rather different, but also highly distinguished referent. Queen Mary I, who reigned from 1553 to 1559, was the first female to be crowned ruler of England in her own right. Mary struggled to turn England back to Catholicism after her father, Henry VIII, had repudiated Roman Catholic authority. She married Philip I of Spain, a Catholic king with little respect for the nascent English Parliament. She repealed Protestant legislation and burned about 300 persons as heretics. This Mary, queen not of heaven but of England, was a polarizing figure, known by her many detractors as "Bloody Mary."

Subsequent political developments contributed to tension between Catholics, who stressed the importance of Mary in Christian life, and Anglicans and other Christian communities, who sought to confine sense to the words of scripture. Elizabeth I, who succeeded Mary I, supported the Church of England and Protestant forces in Scotland and continental Europe. She had Mary, Queen of Scots, beheaded for conspiring with Catholics to overthrow her reign. Elizabeth I's supporters applied words and iconography that had developed in devotion to Mary, the mother Jesus, to Elizabeth. Elizabeth was a virgin queen. Elizabeth was the mother of the people.[2]

High political conflict continued after Elizabeth I's reign ended. When Elizabeth died in 1603, James I became king. On November 5, 1605, Guy Fawkes and four other Catholic radicals were caught attempting to blow up the House of Lords and kill King James. This day thus became marked as "Guy Fawkes Day," celebrations of which often involved burning the Pope in effigy. Tensions continued with Charles I's marriage to a French Catholic princess (1625), the English Civil War and the establishment of a Commonwealth lead by the Puritan Oliver Cromwell (1649-58), the English colonization of largely Catholic Ireland, the Restoration of Charles II (1660), the ascension of the Catholic James II (1685), and William of Orange and Mary II overthrowing James II and becoming co-sovereigns to protect Protestantism in England (1689).

In these circumstances of acute anxiety about the name Mary, parents named a much larger share of their girls Mary. Prior to 1535, the share of females in England named Mary probably did not exceed 3%.[3] The share of females named Mary probably rose slightly before Mary I ascended to the throne in 1553. The share of females named Mary at least doubled during the reign of Mary I, and then fell sharply when Elizabeth I succeeded Mary I in 1558. By the 1580s, while learned polemicists were arguing about the translation of key Marian verses and Elizabeth was reigning over a prospering England, the share of females named Mary rose to the level reached under Mary I's rule. Despite continuing religious tension among Catholics, Anglicans, and other Christian communities, and no resolution of the significance of Mary, the share of females named Mary kept rising. At the end of eighteenth century, 24% of females in England

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[1] Graef (1964) p. 7-8.

[2] A scholarly literature has developed the concept of a "cult of Elizabeth," described as a replacement for the cult of the Virgin Mary. For a brief review, see Hackett (1995) pp. 6-10. Id. suggests that words and images associated with the Virgin Mary were consciously recognized and flexibly deployed.

[3] See Table 2, infra, and Appendix A.

were named Mary. Among parents who had a least one daughter, about 32% had a daughter named Mary.[1]

What is the significance of this development? Perhaps the turn to the name Mary signifies the importance of Mary, the mother of Jesus, in popular religion, and represents a reaction from below to central authorities' suppression of Marian devotion. Perhaps the rapid growth in the use of the name Mary signifies desacrilization of the name Mary, which earlier in England may have been considered too holy for more than 1% of females to use as their names. About 1580, when the name Mary increased in popularity relatively rapidly, Elizabeth was the most popular name, Elizabeth I was the queen, and Elizabeth I was being celebrated with words and images drawn from veneration of Mary, the mother of Jesus.[2] Perhaps Queen Elizabeth pushed the significance of the name Mary close to that of the name Elizabeth, and hence boosted the popularity of Mary. All these significations may have been significant. Together they represent a complex, multiple, and ambiguous explanation for the rise in the share of females named Mary.

The sense of this change, however, is more impressive than this now-standard style of explanation in the humanities. Personal names are economic; they are regularly used in the human interactions that make up everyday human life. About 1650, persons in England on average spoke and heard the name Mary about fifteen times more frequently than they did about 1500. The significations of the name Mary in 1650 were much more complex, ambiguous, and anxiety-inducing than the significations of the name Mary had been a century and a half earlier. Yet significations of the name Mary are not the full sense of that name. The sense of the name Mary includes the sense of the presence of the persons who respond to the use of that name. Popular incarnation of the name Mary historically followed fractures and tensions in its significance.

Table 2 **Share of Females Named Mary**					
All of England			Warwick County		
Birth Years	Rank	Share	Birth Years	Rank	Share
			1381-1405	21	0.3%
			1465-1509	13	0.9%
			1513-1525	10	2.8%
1538-1549	7	4%	1539-1552	7	6.7%
1550-1559	4	10%	1553-1558	3	12.7%
1560-1579	7	4%	1559-1582	8	4.1%
1580-1589	4	10%	1583-1603	6	8.5%
1590-1599	3	13%			
1600-1629	2	15%	1604-1624	3	12.9%
1630-1649	2	15%	1625-1648	2	17.6%
1650-1659	1	15%	1649-1658	1	22.8%

A person by any other name is still present, or absent. In England on February 5, 1511, John Alexander Webb, a landowner, a supporter of the Catholic Church, and a ranking officer in King Henry VIII's army, celebrated the birth of a daughter named Mary.[3] John, his wife, and many other English persons at that time would have said the "Ave Marie," read books containing legends about Mary and her family, seen images of Mary decorating churches and other special places, attended festivals on days officially designated to honor Mary's life, and made pilgrimages to Marian shrines, especially Our Lady of Walsingham. It would be silly to think that this daughter represented Mary, the mother of Jesus, to John, his wife, and to those others who knew this Mary. Yet statues, dressed in lavish costumes and expensive jewels, evoked among many persons a sense of another Mary. A real person named Mary evokes a sense of Mary, too.

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[1] Appendix B. Daughters born subsequent to a (living) daughter named Mary generally were not eligible to be called Mary in mid-eighteenth-century England. With large family sizes, this factor matters in interpreting the frequency of popular names.

[2] On Elizabeth figured as Mary, see Hackett (1995).

[3] Data from OneGreatFamily.com and Jim Webb's genealogy, available at http://jimwebb.rootsweb.com Mary was born in Wilmcote, Aston Cantlow, three miles northwest of Stratford.

In one line of Mary's family, the name Mary, like images and invocations of Mary, was not perpetuated across the sixteenth century. John's daughter Mary had eight girls. Mary's husband was a member of two religious fraternities,[1] and Mary, the mother of Jesus, was probably an important figure in the activities of these fraternities. Mary's youngest daughter, born about 1540, was also named Mary.[2] Hence she was named Mary about the time of dramatic national action to obliterate images and invocations of Mary. Mary married a man from a nearby town where Mary, the mother of Jesus, figured prominently in the guild that ran the town and in the decoration of its church.[3] Under royal orders, Mary's husband in 1563 effaced at least one large image of Mary in the church.[4] Across 1558 to 1571, Mary had four daughters of her own. None of these daughters, however, was named Mary. Instead, the daughters received traditional English names (Joan, Margaret, Ann), with the third-born daughter apparently named in memory of the first, who probably died young. Mary also had four sons, who also received traditional English names (William, Richard, Edmund) and one more unusual name (Gilbert) that may have come from a wealthy godparent.[5] Mary's first grandchild, a girl, was born in 1583 to Mary's oldest son William, age 17, and his wife of six months, Ann. Their baby girl was named Susanna. This was an unusual name.[6] Three girls in their town received that name in that year, one a year earlier, and two more about seven years earlier. No other instance of the name Susanna is recorded all the way back to 1558 in Stratford-upon-Avon, the place where this couple, Ann Hathaway and her husband William Shakespeare, lived.[7]

Shakespeare and many others living in late sixteenth century England could hardly have avoided the sense of Mary entangled in confusion and tension of word, image, and person.[8] For the population over-all, the changing and troubling sense of Mary led to an increasing share of females named Mary. While the significance of this change defies compelling representation, this change undoubtedly meant more persons understood themselves to be Mary and to know

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[1] Trust (2003) p. 11.

[2] Honan (1998) pp. 14-5, 412. Mary married a man named John sometime between 25 Nov. 1556 and mid-Dec. 1557. Id. p. 13. Mary had her first child christened on Sept. 15, 1558, and continued to have children in two to four year intervals. Her penultimate child was christened on 11 March 1574, and her last child on May 3, 1580. The mean age at first marriage in Alcester, Warwickshire, 1550-99 was 24.5 years and 22.4 years old for men and women respectively (27.2 and 24.0 for a sample covering all of England). Laslett, Costerveen, and Smith (1980) Table 1.2, p. 21. John and Mary were both from relatively wealthy families, and hence had the resources to marry relatively young. Mary's mother died before 1548, and her father died in 1556. These family circumstances would have provided an incentive for Mary to marry about 1557 as a relatively young woman. If Mary was born in 1537 (as indicated in OneGreatFamily and other online genealogies), she would have married about age 20 and had her last child at age 43. Honan (1998) p. 14 indicates that Mary was born "about 1540," while Trust (2003) p. 1 suggests 1539-1543. That her husband John was a householder by 1552 probably indicates that he was born before 1530. Eccles (1961) p. 24.

[3] The Guild of the Holy Cross, Our Lady [Mary], and St. John the Baptist played a central role in the social and political life of the town prior to being dissolved by royal order in 1547. See Bloom (1907) p. 1 and Carpenter (1997) pp. 62-79. The fifteenth-century seal of this guild depicted Mary and John the Baptist. Davidson (1988) p. 3. The Guild Chapel included a wall painting of Mary on the side of the church opposite of a painting of the crucifixion of Jesus. Id. plate 2 and p. 21. In front of the church, up on the chancel arch, was also a large figure of Mary and John the Baptist. In the fourteenth century, the town apparently included an image of Mary that attracted pilgrims. Id. p. 3.

[4] Id. pp. 10-11.

[5] Honan (1998) p. 23.

[6] In 1603, Mary's daughter Joan and her husband named their first-born daughter Mary. Honan (1998) p. 412.
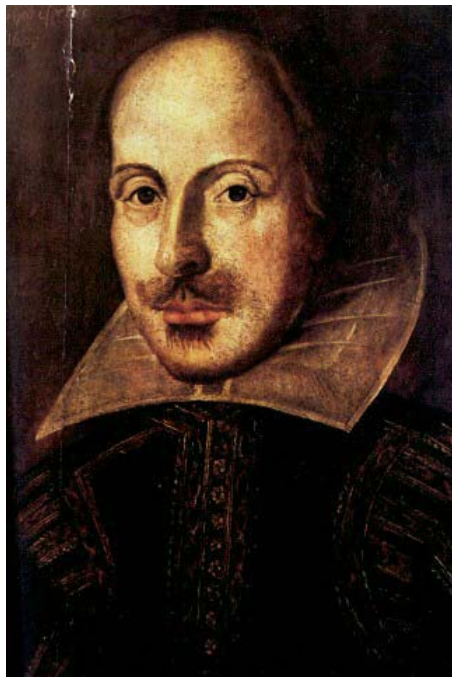
[7] Savage (1905) provides baptismal records, beginning in 1558, for Stratford-upon-Avon.

[8] For discussion of religious and cultural divisions in Stratford-upon-Avon, 1560 to 1640, see Hughes (1997).

Mary. An important part of the genius of Shakespeare was to generalize the problem of Mary in his time. Questions about sense of person that Mary so vigorously evoked became media by which Shakespeare communicated life.

C. Epiphany, or What You Will

In 1966, x-ray imaging of a portrait inscribed "Willm Shakespeare 1609" revealed that it was painted over an image of Mary with the child Jesus and John the Baptist.[1] The images are on a relatively small elm panel.[2] The image of Mary was probably painted early in the sixteenth century, or perhaps in the second half of the fifteenth century. The style seems to be of central Italian origin. The overlaid portrait of Shakespeare has been commonly thought to be an eighteenth-century forgery visually inspired by the engraved portrait of Shakespeare on the title page of the First Folio of 1623. The artifact's well-attested history dates only to 1892, and its reported provenance extends only to 1840.[3] Since portraits claimed to be of Shakespeare, like persons asserted to be Shakespeare, are wearyingly numerous, one might despair of engaging reason or faith. Instead of struggling to make sense of this doubled image, one might be tempted just to play with words: "Reader look, Not on his Picture, but his Book."[4]

The full sense of what Shakespeare communicates requires, however, appreciation for the living human person in a way that goes beyond words or discourse. Shakespeare had a human face. Scientific knowledge developed in the field of law enforcement for identifying human faces indicates that the portrait inscribed "Willm Shakespeare 1609" is an authentic portrait of him.[5] As a living human person, Shakespeare was vulnerable to disease. To an attentive eye informed by the best current medical expertise, images of Shakespeare suggest that he suffered from a disorder of the lacrimal glands, a fine caruncular tumor in the left eye, and a disease indicated on the forehead. These diseases appear in the portrait "Willm Shakespeare 1609."[6] Overall, the evidence suggests that this portrait depicts William Shakespeare towards the end of his life.

This portrait, painted over an image of Mary, evokes a sense of presence that is central to Shakespeare's creative work. Under royal orders, Shakespeare's father whitewashed Christian

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[1] Betram and Cossa (1986) pp. 93-4. This portrait is known as the Flower portrait.
[2] The panel is 23.5 by 17.25 inches, with the top portrait done in oils, and the underlying image also probably done in oils. Id. pp. 84, 94.
[3] Id. pp. 94, 93, 83, 87, 84.
[4] From Ben Jonson's preface to the reader, First Folio (1623) [spelling modernized]. As O'Connell (2000) pp. 119-25 discusses, Jonson's consistently privileged verbal sense over visual sense. Cf. Boyle (1988) esp. p. 643.
[5] Hammerschmidt-Hummel (2000) pp. 52-3. Hammerschmidt-Hummel has done extensive study of images of William Shakespeare. Her work, most of which is in German, seems to be underappreciated in English language scholarship. Her work is the basis for this paragraph.
[6] Id. p. 53-4, 57.

images in the Guild Chapel in Stratford in 1563, including an image of Mary.[1] Shakespeare's father made a "Spiritual Last Will and Testament" in the form written by Charles Borromeo, the Cardinal Archbishop of Milan.[2] Shakespeare's father may have acquired and preserved a small Italian image of Mary and passed it on to his oldest son, William. Towards the end of his life, William may have decided to preserve this outlawed image, or to bring it to life, with his own portrait.[3] Perhaps this is all just imagined. Yet the problem of Mary in sixteenth-century England concerned imagination – the relation of images to words and life. This concern is central to Shakespeare's art.

In his plays, Shakespeare explored extensively the sense of a player, a shadow, a mere picture, or a real, living character. Consider Proteus, a protean male, wooing Silvia in the presence of the disguised Julia, to whom Proteus had offered his hand as a sign of his "true constancy":

> *Proteus*　　　　*Madam, if your heart be so obdurate,*
> *Voochsafe me yet your picture for my love,*
> *The picture that is hanging in your chamber.*
> *To that I'll speak, to that I'll sigh and weep;*
> *For, since the substance of your perfect self*
> *Is else devoted, I am but a shadow,*
> *And to your shadow will I make true love.*
>
> *Julia [aside]*　　*If'twere a substance, you would, sure, deceive it.*
> *And make it but a shadow, as I am.*
>
> *Silvia*　　　　*I am very loath to be your idol, sir.*
> *But, since your falsehood shall become you well*
> *To worship shadows and adore false shapes,*
> *Send to me in the morning, and I'll send it.*[4]

The substance of Silvia's "perfect self" is her love. Proteus declares that, without this love, he becomes a shadow like Silvia's picture. But falsely given love also makes persons into shadows, as the "true-devoted pilgrim" Julia bitingly remarks to the audience.[5] Silvia equates herself with her picture in her loathing to be an idol. Yet recognizing that her picture is a shadow, Silvia finds it appropriate for a shadow to love a shadow.

Shadows in Shakespeare are associated with players. Macbeth, despondent upon news of his wife's death, sighs, "Life's but a walking shadow, a poor player / That struts and frets his hour upon the stage…."[6] Watching a play of some "hempen homespuns," "rude mechanicals," one fairy exclaims, "This is the silliest stuff that ever I heard."[7] Another fairy responds, "The best in

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[1] Many of these images were found in a nearly perfect state when they were uncovered in 1804. Images in the chancel, which was partitioned off in 1563, were not covered over. The chancel became a "passage to [the Rev. Wilson's] house, a playground for his children, a drying ground for his laundress, and a resort for his fowls and pigs." The images in the chancel thus deteriorated and eventually were destroyed. Davidson (1988) pp. 10-1.

[2] Honan (1998) pp. 28-30.

[3] Bertram and Cossa (1986) p. 85 cites circumstantial evidence that the painter of the portrait was Flemish. A Flemish painter, compared to a Dutch painter, would be less likely to overpaint a well-rendered image of Mary, a hundred or more years old, in order to save the cost of a blank wooden panel.

[4] Shakespeare, Two Gentlemen of Verona, 4.2.118-31.

[5] Id. 4.2.126-7, quoted above. Julia refers to herself as a "true-devoted pilgrim" at 2.7.9.

[6] Macbeth, 5.5.24-5.

[7] A Mid-Summer Night's Dream, 5.1.208. The descriptions of the players are Puck's at 3.1.68 and 3.2.9.

this kind are but shadows; and the worst are no worse, if imagination amend them."[1] With this speech, the actors move to the position in the theatre of those present, watching and hearing on the stage shadows, shadows who are yet able to take a place among those in the surrounding crowd.

A player is more than a picture, but even such a shadow can evoke the sense of a person. Giving her picture to Julia, who is disguised as a page, Silvia declares:

> *Go, give your master this. Tell him from me,*
> *One Julia, that his changing thoughts forget,*
> *Would better fit his chamber than this shadow.*[2]

The second sentence might be paraphrased as "Tell him, that fickle man, that he should have Julia in his bedroom, not a picture of me." The actual utterance pushes together the two terms in each of these pairs: "me" (Silvia) and "One Julia" (a unified sense of Julia); Julia and a picture of Julia (that to "fit his chamber"); and the actor playing Silvia and the picture of Silvia ("this shadow"). These three pairs indicate a shifting sense of presence. Just after Silvia exits, Julia measures herself against the picture of Silvia:

> *Here is her picture. Let me see – I think*
> *If I had such a tire, this face of mine*
> *Were full as lovely as is this of hers;*
> *And yet the painter flattered her a little,*
> *Unless I flatter with myself too much.*
> *Her hair is auburn, mine is perfect yellow –*
> *If that be all the difference in his love,*
> *I'll get me such a colored periwig.*
> *Her eyes are grey as glass, and so are mine.*
> *Ay, but her forehead's low, and mine's as high.*
> *What should it be that he respects in her*
> *But I can make respective in myself*
> *If this fond Love were not a blinded god?*[3]

The comparison ends with Julia recognizing that Proteus's love is shaped by more than sight. Despondent, Julia addresses herself like someone reduced to a picture, or a player:

> *Come, shadow, come and take this shadow up,*
> *For 'tis thy rival. O thou senseless form,*
> *Thou shalt be worshipped, kissed, loved, and adored!*
> *And, were there sense in his idolatry,*
> *My substance should be statue in thy stead.*
> *I'll use thee kindly for thy mistress' sake,*
> *That used me so; or else, by Jove I vow*
> *I should have scratched out your unseeing eyes*
> *To make my master out of love with thee.*[4]

Julia's anger echoes the anger of those who exposed and burned adored statues of Mary. Mixed with this anger is confusion of sense. Julia wants her substance to be like that of an image

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[1] Id. 5.1.209-10.
[2] Two Gentlemen of Verona, 4.4.16-18.
[3] Id. 4.4.182-94.
[4] Id. 4.4.195-203.

("statue"). She considers defacing the picture's "unseeing eyes" even though she recognized only a few moments earlier the limits of appearances (Proteus's love is "a blinded god"). Her iconoclastic impulse is diffused by a mundane epiphany of human communication: her sense of Silvia's kindness toward her.

Many persons sense in Shakespeare's plays the real presences of persons.[1] Although Julia doesn't represent anyone, everyone knows or has been Julia. Her intertwining of sense is our sense of her, and our sense of ourselves in experiences of relationships with others. Shakespeare's Hamlet, or Hamlet's Shakespeare, has been called, after Jesus, "the most cited figure in Western consciousness."[2] A vast number of persons recognize him, and remember him. In Shakespeare, there are many others, less often encountered, but no less impressive in an encounter.

Consider the position of Mary and associated symbols and practices of communication in Shakespeare's work.[3] Shakespeare tends to choose names to supplement the development of plot and character.[4] That Hamlet and his father are both named Hamlet helps to characterize the young Hamlet's anxiety about his father and his mother. That Shakespeare own son was named Hamlet is probably no more significant than that Shakespeare's mother, and her mother's mother, were named Mary.[5] Shakespeare did not nurture any character named Mary. One named Marina is a model of virtue, innocence and purity.[6] Another named Mariana confronts evil with steadfast love, great mercy, and a humble but intense desire for the ordinary joys of life.[7] Marina and Mariana have a sense close to Mary, but they do not encompass developments in sixteenth-century England.

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[1] E.g. Bloom (1998). Greenblatt (2001) argues that old Hamlet evoked the sense of a person in purgatory, and that Shakespeare's theatre did so more generally. Recent telecom industry developments have also evoked a sense of persons in purgatory.

[2] Bloom (1998) p. xix.

[3] Greenblatt (2001) p. 253 notes:

> Not all forms of energy in Shakespeare's theater, of course, have been transferred, openly or covertly, from the zone of the real to the zone of the imaginary. ... But the power of Shakespeare's theater is frequently linked to its appropriation of weakened or damaged institutional structures. It is conceivable that Shakespeare, with his recusant family background, his education in Stratford by teachers linked to Campion and the Jesuits, his own possible links to Lancashire recusants, felt a covert loyalty to these structures and a dismay that they were being gutted.

The institutionalized structure of Christians' relation to Mary, the mother of Jesus, surely was weakened or damaged in Shakespeare's time and place. The importance of religious practices to Shakespeare's theatre is only beginning to be adequately appreciated. See id. and Beauregard (2000).

[4] Smith (2002). Id. notes that, compared to his literary contemporaries, Shakespeare's choice of names and use of names is less literal and more spontaneous and whimsical. Shakespeare's use of Mary is consistent with this general pattern.

[5] Shakespeare's son's name is recorded in the parish register as "Hamnet." Other similar records indicate "Hamlet" and "Hamnet" as the first name of the same persons, i.e. Hamnet and Hamlet are not distinguished among first names. See Eccles (1961) pp. 125-6. As Rogers (1993) discusses, Shakespeare's will indicates his great concern for family, which was also a central concern of his play Hamlet.

[6] In *Pericles*. Pericles gave this name to the baby because she was "born at sea." Id. 3.3.12-13. Erasmus mocked popular titles for Mary, the mother of Jesus. See, e.g. "The Shipwreck" (1523) p. 355 in Thompson (1997). One such title was "Star of the Sea." Sources for the name Mary in Hebrew and Chaldaic are associated with the sea, water, and bitterness or sorrow. See Exodus 15:21,23, Numbers 20:13, Ruth 1:20, and Kolatch (1984) p. 378.

[7] In *Measure for Measure*. A minor character in *All Well That End's Well* is also named Mariana. She warns a young woman against the dangers of lustful seduction, immediately after which they encounter the pilgrim Helena going to Saint Jaques le Grand. Pilgrimage in sixteenth century England included women and men traveling far

Two other characters in Shakespeare's oeuvre are named Maria. Maria is recognized today as the Latin form of the name Mary. In late sixteenth-century England, the prayer "Ave Maria" was also called the "Ave Marie," and Marie was the usual form of the name Mary.[1] Thus Maria and Mary were very close in sense as names.[2] One Maria in Shakespeare's plays is witty but not distinctively developed.[3] But the other Maria is a foil to Mary, the mother of Jesus, in a way that provides fundamental insight into sense of presence.

This Maria has a secondary position in *Twelfth Night, or What You Will*.[4] Scholarly discussion has for the most part overlooked her.[5] She does not engage in cross-dressing and shows no signs of bi-sexuality. Productions of the play have often failed to enact her faithfully. She tends to be played as a lusty, spirited maid, naturally superior intellectually, morally, and emotionally to Sir Toby and Sir Andrew, usual male comic characters.   In short, Maria is played as a typical contemporary woman in typical circumstances. Maria thus becomes just another minor character in a celebration of the Life Force:

> *As I attempt to peer into the heart, mind, and even soul of this play at this time in my life, I see, more than anything else, a celebration of the Life Force in all of us. I feel an active and energetic exploration of Love. And I sense the irrepressible energy of a garage rock n' roll band.*[6]

This keen sense of the play as a whole is also an apt, common sense of its characters, modulated to their individual tones. But not Maria.

Maria in *Twelfth Night* is different from a life force that irrepressibly manifests itself. She consistently acts as an instrument to convey information or instructions, assert rules, or to explain or work devices. Maria is a gentlewoman serving the head of the house, Countess Olivia. In her first lines in the play, Maria speaks to Toby, to whom she later becomes married:

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from home and meeting other strangers in new circumstances. Pilgrimage thus naturally provoked suspicion of sexual interests.   See, e.g. Thomas More, A Dialogue Concerning Heresies (1530), p. 100 in Lawler, Marc'hadour and Marius (1981).

[1] The Rhemes New Testament (1582) uses the term "Ave Marie." William Camden, in his Remains Concerning Britain (1605) lists "Marie," but not "Mary" or "Mariana," in his list of usual names for women in England (Dunn (1984) p. 85).

[2] In Shakespeare's *Twelfth Night*, Maria, formally addressing Sir Andrew, states that her name is Mary (1.3.49). Elsewhere in the play "Mary" seems to be a more formal invocation of Maria (1.5.10, 2.3.111).

[3] In *Love's Labour's Lost*.

[4] The phrase "Twelfth Night" is a reference to the feast of the Epiphany, January 6 G.C. This ancient Christian feast, which for formerly pagan Christians replaced an ancient pagan feast, is associated with the nativity of Christ, the baptism of Christ, the Theophany of the Holy Trinity, the presentation of Christ to three wise men traveling from east of Bethlehem, and Christ's first miracle at Cana. Different Christian churches in different places emphasize different events associated with the feast of the Epiphany. *Twelfth Night, or What You Will*, was probably first performed in the Middle Temple, London, on February 2, 1601/2. See Arlidge (2000). February 2 is the feast of Candlemas, which celebrates the purification of Mary and the presentation of Christ in the Temple by Mary and Joseph (Luke 2:22,27; cf. Exodus 12:3-6). In the Middle Temple, it was also a day a wild male revelry. While the revels of 1589/90 ended in violent disorder, the revels of 1597/8 were so cherished that a partial transcript of the courtly farces, romantic parodies, and the ribald jesting was preserved. Id., ch. 5.

[5] Draper (1950) p. 70 explains, "scholars have generally passed her by with brief conventional formality, much as a caller passes a servant at the door." Osborne (1996) p. 140 notes that Maria's "importance is all too frequently overlooked."

[6] Notes from Director Aaron Posner, regarding his production of *Twelfth Night*, which played at the Folger Theatre, Washington, DC, Jan. 3 to Feb. 9, 2003. The Notes are available at http://www.folger.edu/public/theater/twelfthdirector.asp I had the good fortune of attending this production, which consistently sold out and was extended a week.

By my troth, Sir Toby, you must come in earlier o' nights. Your cousin, my lady, takes
great exceptions to your ill hours.

In her first lines in her next entrance, she addresses the clown:

Nay, either tell me where thou hast been, or I will not open my lips so wide as a bristle
may enter in way of thy excuse. My lady will hang thee for thy absence.

Her next spoken entrance is this:

What a caterwauling do you keep here? If my lady have not called up her steward Mal-
volio and bid him turn you out of doors, never trust me.

When Malvolio is under the delusion that Countess Olivia loves him, Maria urges Fabian and
Toby to "pursue him now, lest the device take air and taint." If in tormenting Malvolio they
should make him "mad indeed," then, according to Maria, "The house will be the quieter." Since
Toby is the primary source of raucous revelry, and one that Malvolio had been attempting to
quiet, "quieter" here suggests less conflict between Maria and Malvolio as rival governing au-
thorities in Olivia's house.[1]

While Maria regularly invokes Olivia's authority, she does so in pursuing her own objectives
without respect for conventional authority. Maria, who is unmarried, is having an illicit affair
with Toby,[2] who has a solid social position, but lacks important characteristics of a good hus-
band.[3] When Toby directs Andrew's sexual desire toward Maria, she implies that sex with her
requires a payment.[4] Maria herself devised and proposed the scheme to humiliate Malvolio.
Upon seeing the effects of her scheme, she exults, "I have dogged him like his murderer."[5]
Maria is "truly malicious" in a logical, instrumental way.[6] What she wills fully explains what
she does.[7] She offers no sense of presence, no epiphany of person. She is a lifeless device.

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[1] *Twelfth Night*, 1.3.3-5, 1.5.1-3, 2.3.66-8, 3.4.123-6. Maria also appears rather eager to thwart Orsino's wooing of
Olivia, which, if successful, might threaten her power in the house. Maria treats Viola rudely when Viola, in dis-
guise, first comes to plead Orsino's love (1.5.204-5). Early in Viola and Olivia's dialogue, Maria interjects with an
attempt to eject Viola: "Will you hoist sail, sir? Here lies your way." (1.5.192)

[2] An illicit affair is the subtext for the banter between Maria and the Clown, 1.5.24-8. Toby's statement "Come by
and by to my chamber" (4.2.70-1), which follow lines by Maria, has sometimes been interpreted as indicating this
affair. But Toby's statement is best interpreted to be spoken to the clown. Toby's lines 4.2.65-71 show him anx-
ious, turning and addressing the clown, then back to Maria, and then to the clown again. The First Folio (1623), the
earliest available text, does not include such stage directions, but the Pelican Revised text does.

[3] Besides being a drunk, Toby treats Maria badly. He refers to her as a "wench" and urges Andrew upon her, refer-
ring to her as "my niece's chambermaid." (1.3.39, 47, 2.5.168) In contrast, the *dramatis personae* in the First Folio
describes Maria as a "waiting gentlewoman."

[4] To Andrew's laughable wooing, Maria responds flirtatiously, "Now, sir, thought is free." 1.3.63.

[5] 2.3.121-62, 3.2.68.

[6] Bloom (1998), p. 238, describes Maria as "truly malicious."

[7] In Viola's well-known lines, "We men may say more, swear more, but indeed / Our shows are more than will; for
still we prove / Much in our vows but little in our love" (2.4.128-30), the phrase "Our shows are more than will" has
not received adequate critical attention. This phrase obscures the contrast between Orsino's behavior and Viola's
immediately preceding description of love ("pined in thought...smiling at grief. ...Was this not love indeed?"). It
skews parallels between Maria and Orsino, and Olivia and Viola, with respect to will and love. It's not consistent
with the over-all sense of will in Twelfth Night, or What You Will. Twelfth Night has been transmitted only in the
First Folio (no quarto versions of this play exist). In transcribing a manuscript to print in the First Folio, "n'ore"
(indicating "no more" or "not more") might easily be mistaken for "more". The former provides a much more co-
herent sense of the phrase within its circumstances – from the specific speech, through its context in the play, to
Shakespeare's over-all themes and historical situation. However, the phrase "n'ore" occurs n'ere else in Shake-
speare's work. It's plausibility merits further consideration.

Maria's smallness is repeatedly indicated. Viola, speaking to Olivia, refers to Maria sarcastically as "your giant."[1] Toby, with affectionate irony, refers to her as "Penthesilea," the queen of a legendary tribe of large women. Toby also refers to her as a "beagle" (a small dog), "youngest wren" (a small bird), and "the little villain." Malvolio metaphorically figures her as a small crow in a figure of speech that does not depend on the size of the bird. Maria's physical stature has no significance for the action or relationships in the play. The repeated references to her small stature indicate more generally the smallness of her person.

By the end of the play, Maria is reduced to a blank. Maria is silently present while the tormented Malvolio, locked up in darkness, pitifully cries for help in the penultimate scene of Act 4.[2] With her last words in the play, Maria there notes that the clown might have tormented Malvolio without the curate's disguise that she urged upon him, for "He sees thee not." In the long, ending scene of Act 5, all the named characters appear, except Maria, and perhaps Valentine, one of the Duke's gentlemen. Fabian even deceitfully erases Maria's own willed actions:

> *Most freely I confess myself and Toby*
> *Set this device against Malvolio here,*
> *Upon some stubborn and uncourteous parts*
> *We had conceived against him. Maria writ*
> *The letter, at Sir Toby's great importance,*
> *In recompense of whereof he hath married her.*[3]

While Fabian's deception may indicate only his own perverted idea of masculinity, perpetuating the deception is in Maria's interest, even as it further diminishes her person. Toby's motive for marrying Maria indicates the gift that is her person: "I could marry this wench for this device….And ask no other dowry with her but such another jest."[4] Toby marrying Maria "in recompense" for her device has no place in the mad, vital love and coupling of the final act.

Maria in part represents technology, economics, bureaucracy, and "masculine rationalism."[5] Influential critics in the sixteenth century argued that Mary had become a device that individuals and the institutional church exploited.[6] True love is not a device. England in the second half of the sixteenth century experienced rapid commercial development that depended significantly on personal relationships.[7] Pure friendship is threatened by the pursuit of material profit. Then, as now, one might lament persons seeking to control and manipulate the world to produce goods with their own hands. But many persons, female and male, need to do such work to keep themselves alive. Others

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[1] The references to Maria's size cited here are from 1.5.194, 2.3.163, 2.3.165, 3.2.59, 2.5.11, 3.4.32.

[2] Act 4, scene 1, 4.2.20-128. Act 4, scene 2 is a short, happy scene that begins with Sebastian's blissful wonder at Olivia's love for him, and ends with Olivia leading him to a hasty marriage.

[3] 5.1.350-4.

[4] 2.5.68, 70.

[5] Associating Maria with masculinity can obscure universal aspects of human being and, in particular, deprecate the emotional life of males. The actions of Peter in John 21:3-8 are similar to those of Olivia in 4.3.22-31.

[6] See infra., Section IV.A.

[7] Muldrew (1998).

enjoy contributing to the progress of science and technology, or building organizations and productive capacity. Human flourishing, and mad, vital love, does not come from attempting to purge life of technology, economics, bureaucracy, rationalism, or males. While technology, bureaucracy, and other forms of instrumental rationality do not contribute to sense of presence, they are valuable mechanics of life.

While Maria is absent at the end of the play, she contributes significantly to its development. Maria's device initiates and organizes a main thread of the play – the toppling of Malvolio. Less often recognized is Maria's contribution to Olivia's development. Editors and directors consistently assume, despite a contrary textual indication, that attendants other than Maria are present at Olivia's first meeting with Viola, who then is disguised as Orsino's messenger Cesario. This meeting begins with Olivia, the head of the household, ordering, "Let him approach. Call in my gentlewoman." Maria enters, and then Viola enters. Viola then queries, "The honorable lady of the house, which is she?" Viola's inability to distinguish between Maria and Olivia, whom just earlier the clown had repeatedly and ironically called "good madonna," is an important starting point for Olivia's development.[1] Editors and directors obscure this starting point by placing other female attendants in this meeting.[2] Viola's inability to distinguish between Maria and Olivia contributes to the evolving contrast between Maria and Olivia and between Mary as a device and Mary as a paragon of Christian life.

Olivia undergoes extraordinary humiliation before she realizes love and re-asserts the institutional order of the house. Olivia falls madly in love with Viola, disguised as Orsino's messenger Cesario. Consider the extent of Olivia's abjection:

Viola	*And so adieu, good madam. Never more*
	Will I my master's tears to you deplore.
Olivia	*Yet come again; for thou perhaps mayst move*
	That heart which now abhors to like his love.

Olivia knows she will never like Orsino's love, yet she cannot accept never for her own, more outrageous suit. Olivia has declared to Cesario, "I love thee so that...Nor wit nor reason can my passion hide."[3] After Cesario has emphatically rejected her, "Yet come again" is utter groveling.

Even more humiliating to Olivia are events in the final scene. Olivia has arranged a quick marriage between herself and Sebastian, Viola's twin, whom she mistakes for Cesario. After Olivia decisively rejects Orsino's love, she sees Cesario follow Orsino away from her. Cesario explains where he is going thus:

After him I love
More than I love these eyes, more than my life,
More, by all mores, than e'er I shall love wife.

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[1] 1.5.156-207. *Twelfth Night* is the only text in which Shakespeare uses the word "madonna." From 1.5.38 throught 1.5.31, the Clown refers to Olivia as "good madonna" three times, and "madonna" six times.

[2] Aaron Posner's production of *Twelfth Night* at the Folger Theatre, Washington, DC, Feb. 2003, did this, as did a production of the Shakespeare Theatre's Academy of Classical Acting in Washington, in autumn, 2002. The First Folio (1623) does not indicate anyone else present in addition to Olivia, Viola, and Maria. The Pelican Revised text does not either. King (1971), however, adds "[and attendants, A]" to the stage directions "Enter Lady Olivia with Malvolio" after 1.5.29. The New Folger Library edition (1993) of *Twelfth Night* does likewise. Olivia's line "Give us this place alone" (1.5.218) is taken as the cue for "Maria and Attendants exit" in King (1971), the New Folger Library edition, and the productions I have seen.

[3] The quotations are 3.1.158-61 and 3.1.148-9.

Olivia angrily sputters, "Ay me detested! how I am beguiled!" She pleads pitifully, "Wither, my lord? Cesario, husband, stay."[1] At the beginning of the play, proud Countess Olivia had abjured the company of men and resolved to mourn for seven years in seclusion her brother's death.[2] A mere messenger-boy causes all that pride and pretense to be stripped from her.

The audience might recognize here the work of Mary's god. They might sing with her:

> *He has shown might with his arm,*
> *dispersed the arrogant of mind and heart.*
> *He has thrown down the rulers from their thrones*
> *but lifted up the lowly.*
> *The hungry he has filled with good things;*
> *the rich he has sent away empty.*[3]

Yet, "most wonderful": Sebastian appears with Viola present. "An apple cleft in two is not more twin / Than these two creatures."[4] With this epiphany, Olivia pivots again:

> Will *transformation. Oh be inspired for the flame*
> *in which a Thing disappears and bursts into something else;*
> *the spirit of re-creation which masters this earthly form*
> *loves most the pivoting point where you are no longer*
> *yourself.*[5]

Rather than running to Sebastian or even just crying out to him, Olivia instead focuses on doing justice. She orders that the captain who rescued Viola be freed, that Malvolio be brought before her, and that his letter be read. After hearing Malvolio's testimony, she strongly affirms his position in the household order. She tells him, in the presence of the others:

> *This practice hath most shrewdly passed upon thee;*
> *But when we know the grounds and authors of it,*
> *Thou shalt be both the plaintiff and the judge*
> *Of thine own cause.*[6]

In contrast to Maria, Olivia grows in the course of the play to become an extraordinary presence.[7] By the last scene, she encompasses passion and institutional rule.

The epilogue of *Twelfth Night* replaces the extraordinary presence of Olivia with the ordinary presence of persons beyond the stage. The clown sings:

> *When that I was and a little tiny boy,*
> *   With hey, ho, the wind and the rain,*
> *A foolish thing was but a toy,*
> *   For the rain it raineth every day.*

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[1] The quotations are 5.1.128-30, 5.1.133, and 5.1.137.

[2] 1.2.38-40, 1.1.27-33.

[3] Luke 1:51-3.

[4] 5.1.218, 5.1.216-7.

[5] Rainer Maria Rilke, The Sonnets to Orpheus, Part 2, XII, trans. in Mitchell (1995) p. 485.

[6] 5.1.342-6.

[7] This contrast gains additional definition from the contrast between the anonymous sea captain who greets Viola in Act 1, Scene 1, and Antonio, who is introduced with Sebastian in Act 2, Scene 1. The anonymous sea captain is rather hollow. In circumstances that would heighten sympathy in most persons, three times Viola apparently senses the need to speak of paying him (1.2.18, 52, and 57). Antonio, another sea captain, shows enormous and gratuitous love toward Sebastian: "But come what may, I do adore thee so / That danger shall seem sport, and I will go." (2.1.42-3).

But when I came to man's estate,
  With hey, ho, the wind and the rain,
'Gainst knaves and thieves men shut their gate,
  For the rain it raineth every day.

But when I came, alas, to wive,
  With hey, ho, the wind and the rain,
By swaggering could I never thrive,
  For the rain it raineth every day.

But when I came unto my beds,
  With hey, ho, the wind and the rain,
With toss-pots still had drunken heads,
  For the rain it raineth every day.

A great while ago the world begun,
  With hey, ho, the wind and the rain,
But that's all one, our play is done,
  And we'll strive to please you every day.[1]

All but the last couplet sings universal human history. In the last couplet, nature's grinding on the "hey, ho" spirit is blithely dismissed, "I" is abruptly transformed into "we," and history becomes just trying to please you every day. Shakespeare's epilogues typically recognize the presence of the audience and place them in the conclusion of the play. This epilogue evokes and conjoins a universal pattern of life and a specific, mundane activity. That is the same process by which a living human body makes sense of presence.

The last scene of *The Winter's Tale* also demonstrates that making sense of presence goes beyond will, objects, and symbols. In that scene, Paulina, Leontes, and Perdita stand before the statue of Hermione, the wife that Leontes killed and the mother that Perdita never had the chance to meet.[2] Perdita, who had been "standing like stone," speaks to those present, and then to the statue:

  And give me leave,
And do not say 'tis superstition, that
I kneel and then implore her blessing. Lady,
Dear queen, that ended when I but began,
Give me that hand of yours to kiss.[3]

Perdita sought only to look upon the statue of her mother, yet here she cannot help but act like a pilgrim before the image of Our Lady of Walsingham – outrageous and impossible action in early seventeenth-century England. Perdita's sense of presence defies the mere representation

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[1] 5.1.378-97.

[2] Leontes at first complains about the statue: "Hermione was not so much wrinkled, nothing / So aged as this seems." But then Leontes thinks of living another twenty years with this statue alive, and declares, "No settled senses of the world can match the pleasure of that madness." (5.3.28-9, 71-3)

[3] The Winter's Tale, 5.3.43-6. Most persons typically do not make this type of request before a lucrative commodity or an object of sculptural art. Subsequent quotations are from *id.* 5.3.94-95, 112, 118-9, 121-3, and 125-8 .

before her: "The eye of man hath not heard, the ear of man hath not seen, man's hand is not able to taste, his tongue to conceive, nor his heart to report, what my dream was."[1]

Yet Paulina makes sense of the statue in an even more dramatic way. She offers to animate the statue, under these conditions:

> It is required
> You do awake your faith. Then all stand still

The conditions are fulfilled: all wake up and become still, and then the statue moves. It silently embraces Leontes and "hangs about his neck."[2] Then Paulina, seeking to prompt the statue to speak, says:

> Mark a little while.
> Please you to interpose, fair madam. Kneel
> And pray your mother's blessing. Turn, good lady;
> Our Perdita is found.

"Mark a little while" is addressed to the whole group. "Kneel / And pray your mother's blessing." is addressed to Perdita. What Perdita prays is not written, but in early sixteenth-century England, Christians would have associated "pray your mother's blessing" with saying the prayer "Ave Marie." "Please you to interpose, fair madam," like "Turn, good lady; / Our Perdita is found," seems to be addressed to Hermione. Hermione then speaks, responding like Christians in England had earlier understood Mary to do. She interposes between Perdita and the gods and implores from the gods a blessing for Perdita:

> You gods, look down,
> And from your sacred vials pour your graces
> Upon my daughter's head!

In asking for this blessing, Hermione blesses Perdita with sense of her real presence. Hermione, in turn, explains that what gave her the strength to endure for sixteen years had been the promise of Perdita's presence:

> for thou shalt hear that I,
> Knowing by Paulina that the oracle
> Gave hope thou wast in being, have preserved
> Myself to see the issue.

Sense of presence here is a hope and a blessing, neither of which just will and particular objects can produce.

This insight into sense of presence provides deeper appreciation for Hindu religious practices. Hindus consider religious images to be capable of animation. Hindus sense such images to be alive:

> *For many centuries, most Hindus have taken it for granted that the religious images they place in temples and home shrines for purposes of worship are alive. They believe these physical objects, visually or symbolically representing particular deities, come to be infused with the presence or life or power of those deities. Hindu priest are able to bring images to life through a complex ritual "establishment" that invokes the god or goddess into its material support. Priests and devotees then maintain the enlivened image as a*

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[1] Shakespeare, A Midsummer Night's Dream, Bottom, 4.1.208-11. Cf. Isaiah 64:3, 1 Corinthians 2:9.
[2] While the tenderness of these gestures is obvious, hanging about the neck also has a disturbing sense of being less than fully human, like a silent pendant, a spirit from below, or a predator that seeks to take a person's life rather than to communicate. Cf. 5.3.113 and Hamlet, 1.2.143-5.

divine person through ongoing liturgical activity; they must awaken it in the morning, bathe it, dress it, feed it, entertain it, praise it, and eventually put it to bed at night. They may also petition it, as a divine being, to grant them worldly benefits and liberation from all suffering.[1]

An anthropologist has argued that this sense of Hindu religious images is similar to the sense of images in other circumstances:

Hindu priests and worshipers are not the only ones to enliven images. Bringing with them differing religious assumptions, political agendas, and economic motivations, others may animate the very same objects as icons of sovereignty, as polytheistic "idols," as "devils," as potentially lucrative commodities, as objects of sculptural art, or as symbols for a whole range of new meanings never foreseen by the images' makers or original worshipers.[2]

However, in contrast to Hindus' sense of a living presence in their religious images, these other objects have a sense like that of Maria in *Twelfth Night*. A lucrative commodity represents monetary value, while sense of a living person cannot be limited to particular representations. An object of sculptural art, an icon, or symbol, understood as such, sends a message, while sense of presence is not any particular message.[3] As Shakespeare's plays so powerfully demonstrate, sense of presence is an epiphany that you cannot will.

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[1] Davis (1997) pp. 6-7.

[2] Id. p. 7.

[3] Id. p.13 argues:

One need not believe Hindu theological premises concerning divinities entering and enlivening icons to accept that Indian religious images are, in some important sense, alive. If I convince the reader that these objects may be animated as much by their own histories and by their varied interactions with different human communities of response as by the deities they represent and support, I will have achieved my purpose.

The argument here is that Hindus' sense of God in their religious images is like the sense of a person, a sense that is universally incarnated in the human body and continually iterated in daily, mundane communication. Cultural history and prevailing opinion among a group of persons do not determine that sense. Moreover, icons of sovereignty, lucrative commodities, objects of sculptural art, and symbols do not make sense in that way.

V. Sense in Media Evolution

About 2000 years ago, an eminent Chinese scholar explained a two-player board game thus:

> Lost territory being again recovered is like the might of Cao Zi. When you lay an ambush and devise a feint, and break through an encirclement and run riot, this is like Tian Dan's surprise move. When you exert pressure on the opponent and plunder from each other and so divide territories and take compensation from each other, this is like the behaviour of Su and Zhang. ...
>
> As regards being at ease in playing yi, if you exert yourself fully so that you forget to eat, and are so happy that you forget your sorrows, then we can recommend it and praise it highly, for this is like Confucius' concept of himself.[1]

Spanning simple to complex neurological levels, one sense of exertion and happiness replaces another of hunger and sorrow. One presence is the opponent, a person in close physical proximity, whose disposition, intentions, and actions must be interpreted and anticipated. Another sense is that of another self in vigorous physical action – ambushing, breaking through, running riot, dividing, taking. This sense repeatedly shifts to the sense of disparate, renowned figures in Chinese history. Human beings like you have made all this sense in a game that has, as sensuous artifacts, just a board with a 19x19 grid of lines on it, 180 white stones, and 181 black stones.[2]

Making sense of presence with such means, while it may be desirable for personal development and praiseworthy as a human activity, has not been typical among most persons with the opportunity to use new media. This point might be best understood personally:

> Ask yourself why you don't write letters anymore. Something deeper at work, I think, than "the telephone did it."

What is required to write a letter?

> The letter, written in absorbed solitude, is an act of faith: it assumes the presence of humanity: world and self are generated from within: loneliness is courted, not feared. To write a letter is to be alone with my thoughts in the conjured presence of another person.

How do you decide between writing a letter and making a phone call?

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[1] From Ban Gu (32-92 G.C.) , "Yi Zhi," as translated in Fairbairn (2000) [footnotes omitted, original term "yi" used in place of translation "go"].

[2] This game, known as wei-chi, go, and pa-tok, is still popular today. There are perhaps 100 million players worldwide, with the largest numbers in China, Japan, and Korea. Information in English about the game, and translations of the game to a computer, are available at http://gobase.org/ and http://www.well.com/user/mmcadams/gointro.html

Given the alternative between making a call and writing a letter, I'd have to conclude that I prefer the call because that is what I opt for 9 times out of 10. But I don't prefer it. It is simply what I do. It is what everyone does: the habitual response of the world I find myself in.[1]

Although most persons prefer that it were not so, physical presence is a scarce resource that each person can share only with a small number of others for a limited time.[2]   What persons do indicates an aspect of this economics that remains even with communications technologies that span space and time. For a living body to replace missing senses of physical presence requires work. Persons tend to choose communication services that reduce the amount of work that a person must do to make sense of presence.

Lessening the cost of making sense of presence explains important aspects of media evolution. Persons have predominately favored colorful media – media that creates different patterns across red, green, and blue cones – relative to media that offer only variations in intensity from black to white. Television, which integrates sound with moving images, has dominated radio and text in absorbing persons' discretionary time. The bodily cost of making sense of presence, which naturally includes sense of color and integration of sensory modes, better accounts for this pattern than effectiveness in information transfer or storytelling.

The evolution of photography and telephony indicates that pictures and voice are complementary. Photography and telephony have much different conventional circumstances of use. Nonetheless, they both provide personal communication. Photographs taken relative to minutes of telephone conversation has been remarkable stable in the U.S. over the past century, despite a large reduction in the difference between the real marginal cost of photographs and of telephone conversation minutes. Photography industry revenue has grown much more slowly than that of the telephony industry. These trends suggest that telephony and photography are complementary components of a composite good, sense of presence.

New media and communication services, such as virtual worlds and camera phones, could create more value in making sense of presence. Virtual world development has not sufficiently recognized that the real world offers valuable resources for virtual worlds, not obstacles to immersion. Making sense of presence requires communication across different worlds, a process at the core of the value to persons of participating in virtual worlds.   Current mobile camera phones do not integrate well sight and sound to evoke presence; one cannot easily look, show, and talk at the same time. A mobile communication device that included detachable interface components would offer important new opportunities for integrating sight, sound, and muscular activity. Such new technology would not primarily offer a new good but lessen users' cost of experiencing a well-established good: the sense of presence of another in the absence of physical proximity.

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[1] All the quotations in this paragraph are from Gornick (1994). Gornick is a prolific author and has taught for many years non-fiction writing in graduate-level university courses.
[2] Peters (1999) pp. 270-1.

A. Sensuous Values Have Economic Value

If you understand communication only as information transfer or storytelling, much of communication you cannot understand. For example, PowerPoint presentations. One sees multi-color patterns, textures, icons, and images, overlaid by separated lines of monochromatic text. Sometimes the text enters or leaves with animation, sliding or rotating, and sometimes it dissolves. The text presents words that are often not legible to many persons and frequently meaningless in any case.[1] Usually the presenter reads the displayed text to make it clearer. Sometimes short audio and video clips interrupt the presenter's voice. The over-all effect is commonly called "Death by PowerPoint."[2]

Why are such performances so common? Information transfer is closely associated with simple, monochromatic, standardized codes, such as numbers, words or mathematical symbols. Famous folktales, novels, and silent films demonstrate that compelling narratives can be conveyed with only voice, only text, or only pictures. Suppose that, for all PowerPoint presentations, the codes that persons commonly perceive on each slide were extracted, enlarged if feasible, and placed on a white background, and then the slides were shown seriatim, silently. In more instances than not, the resulting presentations would transfer information more effectively and convey a more coherent, more impressive story. Part of the explanation for adding color and animation to images surely is ignorance of good technique for information transfer and lack of appreciation for the art of storytelling.[3] But bringing persons together in physical proximity for meetings and conferences, and more generally, in cities, contributes to communication in ways not well-explained by information transfer or storytelling.[4] Sensuousness built into a PowerPoint presentation seems in part an attempt to create a sense of presence to substitute for that of the presenter. The results inevitably disappoint, but the attempts are revealing.

1. Color

Persons value a multi-color image more highly than the same image in monochrome. Since the inception of European printmaking late in the fourteenth century, multi-color versions of monochrome prints have been produced for a full range of uses, including elite culture, prayer, politics, and card-playing.[5] Coloring was costly relative to making a monochrome print. To reduce the cost of adding color, stenciling techniques were developed. Even with such innovation, price lists indicate that colored prints were three to five times more expensive than the same print in the original monochrome.[6] Nonetheless, the scope of division of labor in the industry, concern to establish regulation to limit competition among producers, and large variations in the quality of

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[1] How many readers know what TELRIC means? To find out, see FCC (2003b).
[2] Paradi (2003).
[3] See Tufte (2003). For an example of the Gettysburg Address rendered in typical PowerPoint style, see Norvig (1999).
[4] Physical proximity of persons has greatly affected the development of some industries, e.g. the computer industry in "Silicon Valley." The importance of physical presence to industrial structure is associated with tacit knowledge and real uncertainty. See Leamer and Storper (2001) and Storper and Venables (2002). Tacit knowledge differs from information in that it lacks conventional coding. Real uncertainty contrasts with storytelling in that it implies an unknown narrative.
[5] Dackerman (2002).
[6] Id. p. 28, p. 47 n. 59, p. 161 n. 5.

colored prints all indicate that there was mass demand for colored prints. One sixteenth-century customer bought a thousand hand-colored copies of a single woodcut image. A school-teacher's guild distributed hand-colored prints as receipts for payment of dues. According to recent scholarly study, most residents of Antwerp between 1530 and 1575 could afford to buy low-quality colored prints.[1] That mass markets for color prints developed in Europe from the fifteenth to the seventeenth century indicates that many persons valued the addition of color at multiple times the value of the corresponding monochrome print.

More recent developments also indicate that person value color in images across a wide variety of circumstances and uses. In the U.S. from 1965 to 1975, the percent of homes with a color television receiver, among homes that had any television receiver, rose from 5.3% to 70.8%.[2] This shift to color occurred even though throughout the period color receivers cost three to four times as much as monochrome receivers, and all color programming signals were compatible with being displayed in monochrome on existing monochrome receivers.[3] Although important uses of computers, such as word-processing, spreadsheets, and databases, are not naturally associated with color, the shift from monochrome to color displays occurred even more rapidly for personal computers than for television. Dedicated, general-purpose color displays began to appear in standard personal computer configurations in the late 1980s.[4] By late 1997, 87% of U.S. homes with a computer had a color monitor.[5] Wireless handsets and hand-held personal digital assistants (PDAs) are expected to shift rapidly from monochrome to color displays.[6] Color is also currently an important aspect of competitive advantage in the newspaper industry.[7]

Western cultural and scholarly elites have long tended to disparage color as indicating a lesser stage of cultural and intellectual development. A leading European intellectual wrote in 1528:

> *I admit that Apelles was a prince of painting and that his rival artists could find no fault with him except that he did not know when to stop, a criticism which is a sort of compliment in itself. But Apelles used colour. His colours were admittedly restricted in number and the reverse of flamboyant, but they were colours none the less. Dürer, however, apart from his all-round excellence as a painter, could express absolutely anything in monochrome, that is in black lines only… he can draw the things that are impossible to draw: fire, beams of light, thunderbolts, flashes and sheets of lightening, and the so-called clouds on the wall, feelings, attitudes, the mind revealed by the carriage of the body, almost the voice itself. All this he can do just with lines in the right place, and those lines all black! And so alive is it to the eye that if you were to add colour you would*

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[1] Van der Stock (1998), as cited in Dackerman (2002) p. 28.

[2] Sterling and Kittross (1978), App. C, Table 9.

[3] On receiver prices, id. Regarding compatibility, see id. 296-8.

[4] The Apple Macintosh II, introduced in March, 1987, was the first popular personal computer with a dedicated color monitor as its standard display. For the specs of the Mac II and other early Apple computers, see www.apple-history.com

[5] Based on supplementary questions in the U.S. Census Bureau's Current Population Survey for Oct. 1997. See Newburger (1999) and additional Table 1a, available at
http://www.census.gov/population/socdemo/computer/report97/tab01a.txt

[6] In-stat/MDR (2002).

[7] *USA Today*, which has been an industry leader in the use of color, has rapidly become the U.S. newspaper with the greatest circulation. For U.S. newspaper circulation statistics, see
http://www.mediainfocenter.org/newspaper/data/top_20_daily_news.asp

spoil the effect. It is surely much cleverer to be able to dispense with the meretricious aid of colour that Apelles required and still achieve the same results as he did.[1]

The valuation of color in this analysis is closely related to the world of beautiful letters, in contrast to the world of meretricious reality. According to this authority, evoking with only black marks on white paper the sense of feelings, attitudes, the mind, the voice, and other effects is a great achievement. Not coincidentally, such drawings, compared to colorful paintings or colored sculptures, make sense in a way closer to written words. Persons have always had the opportunity to communicate in various ways, e.g. eating, reading, and having sex. Although most persons have valued seeing color, leading intellectuals have tended to prefer seeing black and white.[2]

The value of color in a wide range of circumstances suggests that it generally reduces the cost of making sense. For representing and signifying in early color prints, color is much less important than the lines in the underlying drawing, and the same drawing was colored in much different ways.[3] Similarly, the color that viewers' sense on television receivers and computer monitors is not tightly controlled by the transmission and display technology.[4] In early color prints, color occasionally attempted to record sense of the world, such as the decoration of carts and figures in an important historical event.[5] However, the most frequent use of color that goes beyond the marks on the underlying drawing is blood red added to the body of a suffering Jesus. Such coloring powerfully evoked a sense of presence of the wounded body.[6] Compared to the underlying monochrome print, a colored print allows the viewer to make sense of the image from a greater distance and with less time and attention.[7] It is as if color frees the viewer from having to do within her body the work of painting a monochrome image in making sense of it.[8]

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[1] Erasmus (1528) "The Right Way of Speaking Latin and Greek," p. 399 in Sowards (1978).

[2] Batchelor (2000) provides compelling evidence of this.

[3] E.g. Dackerman (2002), Cat. 12, 16, 19, and 33.

[4] Perceived color depends on the light with which the display and surrounding area are illuminated. Sensors and feedback channels are thus needed to transmit color with high fidelity. Instead, television displays typically allow users to change colors to suit their own subjective sense of correctness.

[5] Dackerman (2002), cat. 30.

[6] Id. p. 30; cat. 18, 39, 40, 41, 53.

[7] This is apparent from the catalog pictures in *id.*, and even more so in the associated exhibit, which I was fortunate to be able to attend.

[8] The difference between making sense of color and monochrome images is less obvious for non-figurative uses of color, such as for web-page buttons, dividers, and backgrounds. While the value of color may be attenuated in these uses, the same bodily process makes sense of the image in all cases.

2. Graphics, Audio, and Video

Web pages delivered through the Internet typically give considerable weight to graphics. Most popular web pages look more like pages from a magazine than from a book. Among all web pages under the Thailand top-level domain name in March 2000, 75% included some graphic element, and the average number of images per page (including small embedded images) was 10.[1] Images account for perhaps 60-70% of the storage size of personally created web pages.[2] Web pages grew into a mass media after monitors capable of displaying color graphics had been widely adopted. That sequence was not a coincidence. By providing a colorful, graphical means of communication, the Web popularized use of the Internet.

While graphics played a major role in popularizing the Web, text is key to what many users currently do with the Web. A leading authority on Web usability describes the Web's "basic imperative" as "let users go where they want and get their information needs instantly gratified."[3] Text readily supports cheap scanning, searching, and authoring. Simple text-box advertisements linked by relevance to keyword searches have economically dominated large, animated banner ads. Users seeking company financial information prefer textual sources to audio and video records of presentations.[4] Blogs, which in current practice are primarily textual, were probably the most important Internet development in the year 2002.[5] In most applications, text is the most economic means for transferring information. Using the Web for getting information emphasizes text.

The provision of information was a contentious issue early in the evolution of the U.S. commercial radio industry. Radio reporting on the kidnapping of Charles Lindbergh's baby, as well as radio coverage of the 1932 presidential election, helped to attract attention to radio. In 1933, the U.S. newspaper industry responded by securing a private agreement to restrict radio's provision of news. Under the agreement, radio networks were restricted to no more than two, five-minute news broadcasts a day, to be broadcast after delivery of the morning and evening newspapers, news reports were required "to be devoted to a generalization and background of general news situations and [to] eliminate the present practice of the recital of spot news," radio news report were required to encourage listeners to read newspapers for more details, and radio networks agreed not to develop their own newsgathering capabilities.[6] Insufficient industry concentration and lack of industry discipline quickly caused the

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[1] Sanguanpong et al (2000) p. 7. One large, unrestricted sample of web pages in 1995 found that 52% of pages contain an image (Bray (1996) Fig. 3). Another similar study found 70% of pages to contain an image (Woodruff et al. (1996) Table 3).

[2] Koehler (2001) Table 2, where in the sample the average page size was 59 Kb. I found that pages from a Google search on the keyword "John" in July 2003 had 68% and 78% graphics bytes for 25 (working) page samples taken from the first links listed and from the last 25 available (beginning rank 890), respectively. The average page size was about 80Kb. Large, comprehensive collections of web pages typically have average page sizes of 6-9Kb. See studies citied in previous footnote. More research on trends in the mix of graphics and text in personally created web pages would be helpful, particularly given development of low-cost digital photography and image processing.

[3] Nielsen (2003b).

[4] Neilsen (2003a).

[5] For a listing of leading blogs, see, e.g. http://blogstreet.com/biq100.html and http://www.daypop.com/blogrank/

[6] Broadcasting (1934) and Jackaway (1995) p. 28.

agreement to break down.[1] Yet, even if such an agreement had been enforced through government regulation, one should not presume that it would have significantly affected the development of radio communication.

Most radio use is not about getting information. From the beginning of popular U.S. commercial radio in the late 1920s, radio programming has been predominately music. In 1932, 64% of radio programming was music, mainly live music, 20% was drama and verbal entertainment, while only 12% was information-oriented, e.g., education, weather, politics, sports.[2] By 2002, about 80% of radio listening was music. Radio drama has largely disappeared, and talk radio has arisen to account for the largest share of non-music listening.[3] Music, the typical form of communication through radio, includes aspects of storytelling (the lyrics, the pattern of movement in sound) and sense of presence (the person singing or playing, understanding personally the emotion of the sound). Radio could be used to transmit information, but it hasn't been predominately used to communicate in this way.

The gradual disappearance of radio drama in the U.S. roughly coincides with the growth of television. Early radio drama included law enforcement (e.g. *True Detective Mysteries*, 1929-59; *Mr. District Attorney,* 1939-52), comedy (e.g. *Amos and Andy,* 1929-60, *Abbott & Costello*, 1940-49), and children's adventure (e.g. *Little Orphan Annie*, 1931-42; *The Lone Ranger*, 1933-56).[4] The dramatic format that occupied the largest share of broadcast hours was known as the women's serial drama, also called "soap operas" because soap advertisements were common in them. At their peak in 1940, soap operas made up 57% of all daytime radio network programming.[5] The share of households with a television rose above 20% in 1951 and above 50% in 1954.[6] After 1960, there was almost no dramatic programming on radio.[7] Soap operas became, and still remain, a prominent feature of daytime television. Law enforcement, comedy, and children's superhero programming also crossed over to television.

The shift of drama from radio to television highlights the value of video in augmenting audio. Popular programs, such as soap operas, law enforcement, and adventure, have well-established storytelling conventions that did not change from radio to television.[8] Radio programs could effectively tell the same stories as the television programs that replaced them. Moreover, radio listeners made sense of the presence of characters in radio dramas in ways not limited by the medium:

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[1] See Jackaway (1995) for discussion and analysis.

[2] Sterling and Kitross (1978) p. 73, 120, 162.

[3] Based on Arbitron format data, available at http://www.arbitron.com/radio_stations/home.htm

[4] Starting and ending years for many radio dramas are available at
http://www.old-time.com/golden_age/index.html

[5] Sterling and Kitross (1978) App. C., Table 6, p. 523. Id. p. 165 notes that 90% of advertiser sponsored (network) daytime programming was women's serial drama. Willey (1961) p. 114, n. 4, states:

> Consensus is that about twenty million women, representing approximately half of the women at home during the day, listened to two or more serials daily.

Cf. id. p. 100 indicates that 71% and 93% of daytime network programming and sponsored daytime network programming, respectively, were serial drama. Note that local affiliates aired only about 50% of network programs, and only 59% radio stations were affiliated with networks. See Sterling and Kitross (1978) pp. 162-3, and Table 2A, p. 512. Thus even in the daytime music still dominated what most radio stations played.

[6] Id. App. C, Table 9, p. 535.

[7] Id. pp. 336-8. Willey (1961) pp. 97, 102-3.

[8] For discussion of dramatic structure and characterization in daytime radio serials, see id. pp. 105-8.

If one of the episodes involved the birth of a child the program could expect to receive not only notes of congratulations but baby gifts from all over the country. The same phenomenon occurred on the occasion of birthdays and anniversaries mentioned in any script. There were offers to loan money or to extend assistance to destitute characters.[1]

For individual persons, making sense of radio characters involved bodily work, conventionally summarized as imagination. To enhance the sense of radio drama characters, radio networks and advertisers mailed thousands of pictures of radio stars, in costume, to radio drama listeners.[2]

This expenditure was made at the risk of undermining the value of the imaginative creations of listeners: the picture might not show a character as the listener imagined her to look. Without the cost of postage or imagination, the video component of television distributes pictures to all viewers. Thus television helps to produce sense of presence at lower cost.

Table 3 U.S. Communication Trends (hours per week as primary activity in discretionary time)			
	Year		
Time Use	1925	1965	1995
Telephone Use	0	1	2
Film, Radio, Rec.Music	1	1	1
Reading and Writing	6	4	3
Television Use	0	10	16
Other activities	19	20	21

As measured by hours of use as a primary activity, television has been by far the most important medium of non-job-related communication with persons not in physical proximity. Persons across a wide range of countries typically spend about 15 hours per adult per week, about a third of total personal discretionary time, watching television as a primary activity.[3] Almost all the growth in personal discretionary time in the U.S. from 1925 to 1995 was absorbed in watching television. By the year 2003, e-mailing, instant messaging, and web browsing, forms of written communication, probably amounted on average to about four hours per week of discretionary time use.[4] This development has not changed the over-all dominance of television in communication with persons not physical present.

Comparing the U.S.S.R. and the U.S. in the mid-1980s helps to identify the value of television. In the mid-1980s, television programming and broadcasting in the U.S.S.R. was state-owned, state-controlled, and highly centralized. Households had little opportunity to choose between programs: 68% of households received two or fewer program channels. In contrast, television in the U.S. in the mid-1980s was privately owned and commercially driven, and television offered viewers many programming choices: 88% of households received five or more over-the-air television signals, while cable systems, with median capacity of over 30 channels, passed 76% of households.

Despite these and other contrasts between the U.S.S.R. and the U.S., the television set, the way television was watched, and time spent watching television were remarkably similar. In

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[1] Id. p. 109. Id. notes:

Such examples of unusual audience identification could be dismissed as revealing a lunatic fringe were it not for the fact that hundreds of additional examples in an increasing order of sophistication lead without a clear line of demarcation to the great body of listeners who accepted their favorite serials as pure fiction but, in addition, as something more than entertainment.

[2] Sterling and Kitross (1978) p. 225.

[3] References for the information in this and the subsequent two paragraphs can be found in Galbi (2001a) pp. 12-20, unless otherwise noted.

[4] Based on Nielsen/NetRatings data for Aug., 2003, available at http://www.nielsen-netratings.com/news.jsp?section=dat_to Unfortunately this source, which seems to be the best currently available, lacks methodological documentation and terminological clarity.

both the U.S. and the U.S.S.R. the average viewer sat on a couch and watched a rectangular colored screen about two meters away. In the U.S. in 1985 television viewing times for employed men and women were 14.6 and 12.1 hours per week respectively. In Pskov, U.S.S.R. in 1986, television viewing times for employed men and women were 14.5 and 10.7 hours per week respectively. One might debate whether television programming in the U.S.S.R. was better or worse than that in the U.S. Clearly it was much different, as were the societies in general. The common attraction of television is related to very general properties of making sense.

Television provides a low-cost means for experiencing sense of presence. Television uses coherent aural and visual stimuli to present persons. Reading a romance novel, listening to a radio soap opera, or watching television, a person sitting in a chair at home can experience the same sense of presence from the same story. The historical dominance of television suggests that coherent aural and visual stimuli naturally requires less bodily work from persons in making sense of presence than reading or listening to a voice without a corresponding image.

Another cost advantage of television is that it typically presents persons in evolutionarily favorable circumstances for making sense of presence. Being in physical proximity to another person offers an even more extensive external sense of another than television presents.[1] That television, rather than socializing, has dominated use of additional discretionary time indicates the importance of internal resources in making sense. Internal resources are the physical structure of the body, including the brain, and lived experience. Circumstances of reproductive opportunities and bodily danger, i.e. sex and violence, are central to evolutionary selection for fitness and are common experience. Compared to the physical presence of a person, television artfully presents persons in circumstances in which the body makes sense of presence with less work. That person is just looking at me. What is she thinking? What can I say? Being together only supplies some of the resources that make sense of presence. Circumstances favorable to the resources that the brain has acquired over time also matter.

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[1] Persons typically attend films with others, and a considerable share of television watching occurs in the presence of others. Yet persons watching a film or television together are primarily engaged in seeking to understand persons present in the film or television program, rather than each other.

B. Photographs and Telephone Calls are Complements

Both self-produced and professional non-business photographs primarily concern communication with friends and family. According to a U.S. survey in 2000, the five most common occasions for self-produced photographs were "Christmas/Hanukkah" (86%), "travel/vacations" (80%), "birthdays" (79%), "home family events" (61%), and "weddings/showers" (55%).[1] These occasions typically involve gathering together family and friends. The situation most frequently associated with increased household picture-taking is "more children/ grandchildren around." Persons take photographs "to preserve memories" (95%), "to share later with others" (73%), "for pure enjoyment" (45%), and "to give away as gifts" (25%). Photographs produced by professionals for non-business customers typically are portraits of families and individual family members, group photographs of teams, clubs, and organizations, and pictures of persons at socially significant events such as weddings, graduations, and high school formal dances. One might easily imagine what most self-produced and professional non-business photographs look like. But recognizing specific persons is key to the value of these photographs. The persons most interested in looking at particular photographs usually know well the persons pictured.[2]

"Photographers" developed as an occupational category late in the nineteenth century and rapidly encompassed a large number of

To collect photographs is to collect the world. ... To photograph is to appropriate the thing photographed. … Photographs are valued because they give information.
   – Susan Sontag 1977:3-4, 22

Given that the social norm defines both what must and what may be photographed, the field of the photographable cannot extend indefinitely ... one cannot photograph the photographable for ever, and, apart from the photographable there is, as they say, 'nothing to photograph'.
   – Pierre Bourdieu 1965: 24

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[1] PMA (2000) Chart 1b-2, p. 25. Multiple responses were permitted. Subsequent facts in this paragraph are from id., Chart 1b-4, p. 27; Chart 1b-1, p. 24; and Chart 13-3, p. 157.
[2] Being shown photographs not of one's own friends and family commonly evokes tedium.

professionals. In 1890, photographs were just starting to become objects that ordinary persons produced for themselves. Persons who professionally identified themselves as photographers in 1890 predominately did custom, personal photography. The number of professional photographers in 1890 was similar to the number of accountants, artists, and dentists, and ten times larger that than the total number of authors.[1] Across the twentieth century, the numbers of artists and dentists grew at similar rates, photographers grew slightly slower, while authors and accountants grew much faster. All these professions grew much faster than the over-all population.[2] However, from 1890 to 1997, revenue per photography studio fell from eight times average economy-wide worker earnings to two times average earnings.[3] The challenge over time to the occupation of photographer has not been lack of occupational recognition and job opportunities, but declining relative value.

The lure of photographs, their hold on us, is that they offer at one and the same time a connoisseur's relation *to* the world and a promiscuous acceptance *of* the world. … Whatever the moral claims made on behalf of photography, its main effect is to convert the world into a department store or a museum-without-walls in which every subject is depreciated into an article of consumption.
    – Susan Sontag 1977: 81, 100

To pry an object from its shell, to destroy its aura, is the mark of a perception whose "sense of the universal equality of things" has increased to such a degree that it extracts it even from a unique object by means of reproduction. Thus is manifested in the field of perception what in the theoretical sphere is noticeable in the increasing importance of statistics.
    – Walter Benjamin 1936: 223

Table 4 Employment in Occupations (workers, in thousands)		
Category	1890	2000
Photographers	20	148
Accountants	15	1,592
Artists	22	238
Authors	2	138
Dentists	17	168

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[1] According to recent scholarship, the idea of the romantic author, associated with personal creative genius, gained prominence in the second half of the eighteenth century. See, e.g. Woodmansee (1984). But, at least in the U.S., the occupation of "photographer" developed much more rapidly than "author." In the U.S. in 1850, only 82 males reported their occupation as "author," while 938 reported their occupation as "daguerreotypist." While in the twentieth century the number of authors grew much more rapidly than the number of photographers, as late as 1980 the number of photographers was more than twice as great as the number of authors. See Appendix C.

[2] Cf. Nunberg (1996) p. 23-4. U.S. resident population increased by a factor of 3.7: from 76.2 million in 1900 to 281.4 million in 2000.

[3] For photographers' revenue, see professional services sources in Table Notes, under Table 5. Establishment counts are from the same sources. Average earnings in 1890 ($438) are from Historical Statistics (1975) D 779, p. 168, all industries including farm labor. Average earnings in 1997 ($40,249) are from Statistical Abstract: 1999, No. 607, p. 443, domestic industries, annual total compensation for full-time workers.

The conventions of photography have changed little despite major changes in industry structure. In the late nineteenth century, an ordinary household might have about ten professionally produced photographs of friends and family.[1] Such photographs would evoke rich memories, be shared with intimates, and might be offered as special gifts. Self-produced photographs have subsequently grown to outnumber professionally produced photographs by about a factor of twenty.[2] Revenue associated with end-user equipment, supplies, and processing has grown from 20% of professional photographers' revenue in 1890 to 200% of that revenue in 1997. However, about a quarter of households still purchased professional photographs in 1999, and custom, personal photography accounted for about two-thirds of professional photographers' revenues.[3] Moreover, at the beginning of the twenty-first century, most self-produced photographs and non-business professional photographs are still similar in subject matter and use to the photographs that established the occupation of photographer in the nineteenth century.

The industrialization of photography permitted its rapid absorption into rational – that is, bureaucratic – ways of running society. … Needing to have reality confirmed and experience enhanced by photographs is an aesthetic consumerism to which everyone is now addicted. … Photography has become the quintessential art of affluent, wasteful, restless societies – an indispensable tool of the new mass culture...
 – Susan Sontag 1977: 21, 24, 69

Photography is and is not a language; language also is and is not a "photography."
 – W.J.T. Mitchell 1994: 281

The disconcerting ease with which photographs can be taken, the inevitable even when inadvertent authority of the camera's results, suggest a very tenuous relation to knowing. … Like other steadily aggrandizing enterprises, photography has inspired its leading practitioners with a need to explain, again and again, what they are doing and why it is valuable.
 – Susan Sontag 1977: 115

Table 5 Photography Revenue (millions of dollars)			
Year	End-User Supplies	Prof. Services	Ratio
1890	3	20	0.2
1939	74	64	1.2
1967	2,200	750	3.0
1997	15,000	7,500	2.0

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[1] West (2000) p. 2.
[2] See Table Notes, under Table 7.
[3] PMA (2000) Chart 13-3 p. 157; Census of Business, 1997 (see Table Notes, under Table 5).

Non-business telephone calls primarily concern communication with friends and family. While the motivation for telephone calls, and the content of them, has received remarkably little scholarly attention,[1] available evidence indicates that non-instrumental communication with friends and family has long been a central aspect of telephone use. In 1909, an applied scholar found that, in sample of residential telephone calls in Seattle in 1909, 30% of calls consisted of "purely idle gossip," while another 20% were between subscribers' residences and their places of business.[2]

This pattern of use hasn't changed. Telephone company traffic studies in the early 1970s found that 40-50% of residential telephone calls span a two-mile radius, while 20% of residential calls go to a single number, and 50% of residential calls to a set of five numbers.[3] In 1975, persons in Manhattan's Lower East Side lost phone service for twenty-three days due to a fire in a switching station. A study of a sample of those persons found that the ability to make and receive calls from friends and family was missed much more than the ability to make and receive calls related to business, medical, and shopping purposes.[4] While telephony allows communication in the absence of physical proximity, telephony use is predominately conversations among persons who know each other in person.

Most persons have not recognized any relationship between communicating using

This is not a pipe.
—- Michel Foucault 1973: 0

Where the claims of knowledge falter, the claims of creativity take up the slack.
– Susan Sontag 1977: 117-8

the Winter Garden Photograph, however pale, is for me the treasury of rays which emanated from my mother as a child, from her hair, her skin, her dress, her gaze, *on that day*.
– Roland Barthes 1980: 82

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[1] Fischer (1992) pp. 23, 253; de Sola Pool (1977) pp. 2-3. Many contributors to the latter volume make the same point in reference to different subjects and countries. See id. p. 36; 69; 246, 258-9; 263; 281.
[2] Judson (1909) p. 646.
[3] Mayer (1977) pp. 226, 228.
[4] Wurtzel and Turner (1977) p. 252. One industry participant eventually recognized in its product strategy the importance of friends and family in telephone use:

> *Friends & Family is MCI's most successful residential product ever, and arguably one of the most successful new product introductions in the history of the competitive long distance industry. Within eight months after its introduction on March 18,1991,* **Friends & Family had attracted over five million customers***!*

MCI (1991), Annual Report, from "To MCI's Stockholders and Friends."

photographs and communicating by telephone. Social conventions or technological devices have not connected to telephone conversations acquiring photographs, viewing them, and sending them. Persons typically do not consciously choose between using photography or using telephony. The telephony and photography industries historically have had little organizational interaction. The considerable scholarly literature on photography, and the much lesser amount on telephony, join photography and telephony only in highly abstract, impersonal mechanisms and modernization narratives.

Table 6 **Prevalence of Telephones and Cameras** (share of households with)		
Year	Telephones	Cameras
1890	2%	1%
1938	35%	44%
1958	77%	80%
1995	94%	94%

However, many persons' choices across a century indicate that communicating using photographs and communicating by telephone calls are highly complementary. The share of households with a telephone and the share with a camera have increased in parallel from less than 2% for phones and 1% for cameras in 1890 to about 94% each about 1995. The number of end-user photographs and the number of telephone minutes has been roughly co-integrated: the ratio of minutes of residential telephone conversation to the number of self-produced and professional non-business photographs has been relatively stable. The ratio of these communication indicators might have diverged by a factor of ten or more in either direction. That the ratio didn't is an important fact.

There is an aggression implicit in every use of the camera. … Just as the camera is a sublimation of the gun, to photograph someone is a sublimated murder – a soft murder, appropriate to a sad, frightened time.
  – Susan Sontag 1977: 7, 14-5, 24

I have been photographing our toilet, that glossy enameled receptacle of extraordinary beauty.... Here was every sensuous curve of the "human figure divine" but minus the imperfections.
  – Edward Weston 1925, in Columbia World of Quotations 1996: 63843.

Table 7			
Telephone Conversation Minutes			
and Photographs			
(millions of minutes and photos)			
Year	Tel. Mins.	Photos	Tel.Mins/ Photo
1890	1,100	34	31
1939	66,000	850	80
1973	670,000	6,900	97
1995	1,500,000	21,000	71

The stability of this ratio is more remarkable when considered along with relevant price changes. Local telephone service has generally been provided on a flat-rate basis in the U.S. from the end of the nineteenth-century to the present.[1] Thus a rough approximation to the marginal cost of an additional telephone call from 1890 to 1995 is zero. In contrast, the marginal cost of a self-produced photograph was about 17 cents in 1890 and about three times that in 1995.[2] Since average wages increased by about a factor of eighty across the same period, the real marginal cost of a photograph (the cost measured in equivalent time working at average contemporary wages) fell by about a factor of twenty-seven.[3] Typically, when the price of a product goes down, users buy relatively more of that product. Yet despite a twenty-seven-fold reduction in the marginal cost of photographs, and a much smaller reduction in the marginal cost of telephone minutes, the number of photographs did not grow sharply relative to telephone minutes.

Folk wisdom provides some insight into the relationship between pictures and words. The phrases "one look is worth a thousand

When Geldermans told me that Anquetil always moved his water bottle to his back pocket during climbs, so his bike would be lighter, I began paying attention. I noticed that in all the old pictures of Anquetil climbing, his bidon is always in its holder. That's straining at gnats. Geldermans' story strikes to the soul of the rider, and is therefore true.

Those pictures are inaccurate.
– Tim Krabbé 1978: 117

… the act of taking pictures is a semblance of appropriation, a semblance of rape.
– Susan Sontag 1977: 24

the aesthetic of the great mass of photographic works may be legitimately reduced, without being reductive, to the sociology of the groups that produce them, the functions that they assign to them and the meanings that they confer upon them, both explicitly and, more importantly, implicitly.
– Pierre Bourdieu 1965: 98

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[1] In some cities, most importantly New York and Chicago, rates rose with the number of calls made ("metered service"). But even in these locations, users did not face charges for additional minutes on a given local call. Per minute charging for local calls is prevalent outside the U.S. and has been a significant restraint on dial-up Internet access use.

[2] The 1890 figure is based on the per photo cost of Kodak film, developing, and printing given in Kodak (1895) p. 68. The figure for 1995 is my estimate based on personal knowledge.

[3] Wage trend calculated from Historical Statistics (1975) D 603, converted to per hour based on id., D 589, compared to Statistical Abstract: 1996, No. 659.

words" and "one picture is worth ten thousand words," falsely attributed to a famous (unnamed) Japanese philosopher and described as a Chinese proverb, respectively, appeared in two advertisements in a U.S. commercial media journal in the 1920s.[1] In the resulting process of mutation, competition, and natural selection, the phrase "a picture is worth a thousand words" came to inhabit the brains of more than half a billion persons by the beginning of the twenty-first century. Since telephone conversations produce on average about 150 words per minute, the data indicate that a picture is worth about twelve thousand words of telephone conversation. Thus folk wisdom recognizes an important relation and upholds the correct value to an order of magnitude. But careful collection and analysis of data, and inspired interpretation, provides better understanding.[2]

Communicating using photographs and communicating by telephone calls are related in a fundamental sense: the sense of presence. The predominate uses of both photography and telephony involve actively recognizing another despite that person's physical absence. A photograph and a telephone conversation each provide only one mode of external sense of another person. Nonetheless, using a photograph or using a telephone call, bodily work can create a sense of presence. The complementarity of photographs and telephone calls suggests that persons complement voice-only experiences of presence with image-only experiences of presence. Communicating by telephone and with photographs may both increase with increased development of common skills associated with

All the authors concur, Sartre says, in remarking on the poverty of the images which accompany the reading of a novel: if this novel "takes" me properly, no mental image. To reading's *Dearth-Of-Image* corresponds the Photograph's *Totality-of-Image…*
– Roland Barthes 1980: 89

Any collection of photographs is an exercise in Surrealist montage and the Surrealist abbreviation of history.
– Susan Sontag 1977: 68

So I went on, not daring to reduce the world's countless photographs, any more than to extend several of mine to Photography: in short, I found myself at an impasse and, so to speak, "scientifically" alone and disarmed.
– Roland Barthes 1980: 7

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[1] Hepting (1999).

[2] One interpretation of folk wisdom is that one picture can substitute for a thousand words. Another interpretation is that persons prefer packages of sense that combine words and pictures in a thousand-to-one proportion. The former is probably the more common interpretation, but the data in this paper support the latter. The relative importance of the two interpretations in the reproductive success of the folk wisdom is a subtle and complex question not addressed here.

making sense of presence in the absence of physical proximity. In addition, given that the brain's physical structure of memory evolved in circumstances of physical presence, complementary use of photographs and telephone calls may help to accumulate experience, within the constraints of conventional practice, in a form that increases the efficiency of brain processing of memories of other persons.

Despite persons using pictures and telephone calls complementarily, telephony revenue has become much greater than photography revenue. From 1890 to 1939, telephony greatly expanded greatly its base of customers while experiencing little reduction in nominal revenue per telephone.[1] In photography, the preponderance of photo production shifted from professional studios to self-production, which generated much less industry revenue per photo. Overall, telephony revenue grew from slightly less than photography revenue in 1890 to more than eight times photography revenue in 1939. Although personal use of telephony and photography throughout the twentieth century has primarily been for communication with friends and family, the photography industry never re-established a service business model to match that of telephony. Telephony revenue in 1997, like in 1939, was about eight times greater than photography revenue.

Table 8 **Telephone and Photography Industry Revenue** (millions of dollars)			
Year	Telephone	Photo	Ratio
1890	16	23	0.7
1939	1,172	138	8.5
1967	15,183	2,941	5.2
1997	186,030	22,281	8.3

Attempting to overcome a falsely rigorous objectivism by trying to grasp the systems of relationships concealed behind preconceived totalities is quite the opposite of succumbing to the seductions of intuitionism, which, conjuring up the blinding evidence of false familiarity, in the individual case merely transforms everyday banalities about temporality, eroticism and death into false essentialist analyses.
  Pierre Bourdieu 1965: 9

The presence of the original is the prerequisite to the concept of authenticity. … The situation into which the product of mechanical reproduction can be brought may not touch the actual work of art, yet the quality of its presence is always depreciated.
  – Walter Benjamin 1936: 220-1

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[1] Revenue per telephone was $6.00 in 1890 and $4.69 in 1939.

That telephony generates more than eight times the revenue of photography would probably surprise shrewd nineteenth-century innovators and business persons. Samuel F.B. Morse, a prominent early nineteenth-century portrait painter and an inventor of the telegraph, considered the daguerreotype, the first photography device, to be as important as the telegraph. In 1839, the same year in which details of Daguerre's invention were published, Morse built a daguerreotype and began experimenting with its capabilities. In 1840 he opened one of the first commercial photography studios in the U.S.[1]

The telephone had a less auspicious reception. About 1877, within a year after Alexander Graham Bell had publicly demonstrated telephony, the president of Western Union Telegraph Company turned down the opportunity to buy all the rights to Bell's telephone. He is reported to have remarked, "What use could this company make of an electrical toy?"[2] Historically, most persons' use of telephony has been fundamentally similar to their use of photography. But the businesses built to serve these uses diverged in the past. They may converge in the future.

Mad or tame? … mad if this realism is absolute and, so to speak, original, obliging the loving and terrified consciousness to return to the very letter of Time: a strictly revulsive movement which reverses the course of the thing, and which I shall call, in conclusion, the photographic *ecstasty*.
  – Roland Barthes 1980: 119

C. Bringing New Media to Life

Companies providing traditional consumer photography and plain-old telephone service are urgently searching for more auspicious values. Revenue associated with film, photo developing, and printing has historically accounted for about two-thirds of personal photography spending.[3] Digital cameras require neither film nor photo developing, and they make digital display of photographs almost costless. The rapidly increasing popularity of digital cameras threatens to destroy the traditional revenue model for personal photography.[4] Rapidly falling communications equipment costs, new software developments such as Internet telephony, and fierce price-based

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[1] Bruno (2001), Southworth (1871), Davis (1996), Photographer (1896).

[2] Aronson (1977) pp. 15-6.

[3] Wolfman Report for 1993, p. 56. Calculations based on a variety of other data also support this figure. In the Wolfman data, camera sales amount to about 10% of revenue, while other equipment and supplies make up the remainder.

[4] At year-end 2002, about 23 million U.S. households (about 21% of households) owned a digital camera. See PMA (2003) p. 1 and project total households from Statistical Abstract, 2002, Table 50, p. 48. If their film camera were to break, 50% of households indicated that they would replace it with a digital camera. PMA (2003) p. 1.

competition among voice telephony providers similarly threaten to evaporate a large amount of revenue associated with voice telephony.[1] The inertia of habitual activities and patterns of thinking, along with regulatory and political barriers to change, ensures that change will take time. But forward-looking industry participants and policy-makers must think about new media and communication services.

Virtual worlds are an important new media development. While best understood as places, virtual worlds are associated with games and play.[2] Many virtual worlds are also called online games or *MMORPG*s (*M*assively *M*ultiplayer *O*nline *R*ole-*P*laying *G*ames). A seminal development in virtual worlds happened in the fall of 1978 at Essex University, England: an undergraduate began to program what became known as a *MUD* (*V*irtual *O*nline *W*orld). In this first MUD, by means of text and in accordance with the rules of the underlying, shared computer program, multiple players interacted with each other, the environment, and persistent objects in that shared context. Programmers rapidly reproduced and ramified the MUD, leading to the code families TinyMUD, LPMUD, and DikuMUD, and then further differentiating into MOOs, MUCKs, and MUSHs. These textual worlds attracted ardent players and generated considerable revenue for early online services.[3] Textual worlds still exist, and a leading authority on virtual worlds considers them still to be capable of providing the most advanced virtual world experience.[4]

Virtual worlds have been successful in attracting users and generating revenue for their owners. NCsoft's Lineage, a graphical virtual world launched in Korea in September, 1998, generated about $100 million in revenue in 2001, and, as of mid-2003, had 3.2 million monthly active users and 300,000 concurrent users.[5] Other virtual worlds that have attracted more than 100,000 subscribers include Ultima Online, EverQuest, and Dark Age of Camelot.[6] These virtual worlds charge subscribers a fixed fee per month for use. In the U.S., this fee is typically around $10/month. Virtual world software, updates, and extensions are generally sold for a small, additional fee. Virtual world companies do not own, operate, or include within their service the underlying communications infrastructure. They operate as value-added service providers using more generally capability communications infrastructure. With their high operating leverage, committed player bases, and steady revenues, virtual worlds have attracted considerable business interest.

Sensuous richness shapes competition among virtual worlds. The quality of players' experiences in virtual worlds is highly contingent on a player's circumstances, actions, and interactions with other players. Thus comparing and communicating the quality of experience in different virtual worlds is difficult. Quality of graphics, and more generally, sensuous richness, is much more readily apparent. Moreover, sensuous richness reduces the cost of making sense of pres-

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[1] Galbi (1999) documents relevant developments in long-distance voice competition. See Galbi (2002a) p. 1 ft. 4, and related text, regarding wireless voice.

[2] Bartle (2003) emphasizes that virtual worlds are places.

[3] Bartle (2003) pp. 3-35 provides an account of the development of virtual worlds from the perspective of a leading participant. The facts in this paragraph are drawn from that source.

[4] Bartle (1999). Cf. Bartle (2003) pp. 119, 240.

[5] Based on data from NCsoft's website, http://www.ncsoft.co.kr/default_e.htm (accessed Sept. 2003).

[6] Bartle (2003) pp. 28-9. The Sims Online, a follow-up to the highly successful individual-player Sims computer and console series, disappointed industry observers by failing to reach 100,000 subscribers six months after its December, 2002, debut. Star Wars Galaxies and EverQuest II, new virtual worlds expected to be launched commercially late in 2003 and 2004, respectively, have been backed by large development budgets and high industry expectations.

ence in virtual worlds. All the virtual worlds that have attracted more than 100,000 paying subscribers are graphical virtual worlds. For virtual worlds, sensuous richness has been a major determinant of popular appeal and commercial success.[1]

The importance of sensory stimulation in virtual worlds has long been recognized. Consider these points for meditating on hell, written about five hundred years ago:

> First point: *To see in imagination the great fires, and the souls enveloped, as it were, in bodies of fire.*
> Second point: *To hear the wailing, the screaming, cries, and blasphemies against Christ our Lord and all His saints.*
> Third point: *To smell the smoke, the brimstone, the corruption, and rottenness.*
> Fourth point: *To taste bitter things, as tears, sadness, and remorse of conscience.*
> Fifth point: *With the sense of touch to feel how the flames surround and burn souls.*[2]

This technique systematized a common spiritual practice of seeking understanding of otherworldly truths through full experience of the living body.[3] Although these points were generally communicated to early users orally, early users were expected to use this sense to guide their actions through this world: "if I should forget the love of the Eternal Lord, at least the fear of punishment will help me to avoid falling into sin."[4] Stimulating sense in the virtual world was not just a matter of immersion in that world, but also directed to connecting the other world to this world in the living body.

Some designers and scholars of virtual worlds have not understood the importance of the body to virtual worlds. In recent, pioneering economic research on virtual worlds, an economist described the body as an instrument of the mind:

> when our minds experience the Earth, they do so through our bodies. Our bodies must react to the forces imposed on them by the Earth's environment, and when our senses detect an opportunity to meet a goal, we must direct our bodies to act in the Earth's environment to achieve the goal. Our real bodies are, in some sense, our Earth avatars: when we are in Earth, our selves are present in and represented by a body that exists in Earth, and only there.[5]

This research describes use of virtual worlds as the mind's choice of another body:

> When we visit a virtual world, we do so by inhabiting a body that exists there, and only there. The virtual body, like the Earth body, is an avatar. When visiting a virtual world, one treats the avatar in that world like a vehicle of the self, a car that your mind is driving. You "get in," look out the window through your virtual eyes, and then drive around by making your virtual body move. The avatar mediates our self in the virtual world: we inhabit it; we drive it; we receive all of our sensory information about the world from its standpoint.[6]

This understanding of the relationship between the mind and the body is inconsistent with the best current knowledge from neuroscience, physiology, psychology, evolutionary biology and

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[1] Bartle (2003) pp. 70, 119, 289.
[2] Ignatius, c. 1540, The Spiritual Exercises of Saint Ignatius, p. 59 in Mottola (1989).
[3] E.g. the life of St. Francis of Assisi (early 13'th century); Pseudo-Bonaventura (late 13'th century), Meditations on the Life of Christ, in Ragusa and Greene (1961); and Methvin (1899) pp. 55-60.
[4] Ignatius, c. 1540, Spiritual Exercises, p. 59 in Mottola (1989).
[5] Castronova (2003) pp. 4-5.
[6] Id.

other fields.[1] Its prevalence hinders thinking about key opportunities for developing new media and communication services.

A leading authority on virtual worlds has emphasized the importance of the relationship between the other world and this world. This authority poses the question that business persons seeking to retain and expand their set of customers need to answer: "Who are these people and what do they want?"[2] This authority's answer, given for virtual worlds but applicable much more generally to new media and communication services, is this:

> *The celebration of identity is the fundamental, critical, absolutely core point of virtual worlds.*[3]

"Celebration of identity" is a process described as follows:

> *For the great majority of players, virtual worlds encourage them to present different sides of themselves in a safe environment; challenges arise in the virtual world which enable them to reflect (consciously or otherwise) on their responses to those challenges, leading them to develop a greater understanding of themselves; over time, this brings about a gradual merging of the virtual side and the real side, as the player becomes increasingly attuned to their persona.*[4]

This process does not describe escape from the real world or imply separation of the mind from the body, if that means anything and were possible. The value of the other world is in presenting opportunities and challenges leading to greater self-understanding not divided by different worlds.

Pushing this insight further has major implications for industry development. Most players of virtual worlds currently play sitting down in front of a computer or a television screen. But the best current scientific knowledge indicates that persons make sense of presence throughout the body: the body reveals the person. Thus engaging persons in a wider range of muscular activity increases their self-understanding. EyeToy, a device that Sony released in July, 2003, does just this. This device sits on top of a television and integrates with the image on the screen the full-body actions of the person in front of it. For about $50, the device comes with a set of twelve simple games, including "Kung Foo" (the player moves her arms to strike ninjas), "Beat Freak" (provides sound and visual prompts for dancing), and "Keep Ups" (the player keeps an on-screen ball in the air with movements of her head). In September, 2003, about two months after its launch in Europe, an industry analyst called EyeToy a "killer app" and noted that 400,000 EyeToys had already been sold in Europe.[5] One might consider EyeToy to be just a toy. But deeper understanding of persons and what they want suggests that new media and communication services that move persons off their behinds point forward.

Real body awareness is consistent with immersion in a virtual world. Madden NFL Football, one of the most successful games of all time, readily supports multiple players.[6] What is the value of the physical presence of players to each other? One player might sense that the other player is not wearing football gear and not moving in ways characteristic of the players on the field. That might be thought to distract from immersion in the game. In fact, the effect is likely

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[1] See Section I, infra.
[2] Bartle (2003) p. 125.
[3] Id. p. 159.
[4] Id. p. 162.
[5] Gamespot (2003), interview with Nick Parker. Other information about EyeToy is from its impressive website, http://www.eyetoy.com/language.html and various sales and review information on the web.
[6] For more on this game, see http://madden2002.ea.com/

to be the opposite. Physical expressions of the other player – e.g., muscular tension, gesture, vocalization, perhaps even changes in body odor – are likely to improve the value of the game to both players.[1]

Media and communication services create value by connecting different worlds. The predominate uses of photography and telephony has been to communicate virtually among persons who have encountered each other regularly face-to-face. Ring tones for mobile phones link telephony communication to a different world of communication in the physical surroundings of the receiver. Cell-phone covers, faceplates, and screensavers function similarly. These sorts of additions to mobile phones generate billions of dollars of revenue annually.[2] One of the most successful Internet businesses has been online dating – virtual encounters oriented toward real-world ones. Sony's PSP, scheduled to debut in the fourth quarter of 2004, is a hand-held game console that supports local wireless networking with other nearby consoles; Nokia's N-Gage is a mobile phone that includes similar gaming capabilities.[3] Players can thus easily choose different real-world circumstances for play. Play can come from a combination of attributes of the real world, real persons, and digital creations, not just from a virtual world created only in players' consoles or computers.

Game designers should recognize the value of the real world to games. Consider this development:

> *On the opening day of the Austin Game Conference, a two-day confab of online game developers, discussions turned to the new spate of handled devices that combine mobile gaming and cell phone capabilities that will enable people to play full-color, three-dimensional, multiplayer games over cell phone networks.*[4]

A full-color, three-dimensional, multi-player mobile game sounds a lot like Real Life, described recently as "the most accessible and most widely accepted massively multi-player online role-playing game to date."[5] Surely players' fantasies add to the fun of activities such as recreational

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[1] This, of course, is only true if both players are interested in playing the game. South Korea, a leader in the development of virtual worlds, has more than 20,000 Internet cafes. Koreans commonly enter virtual worlds from these cafes. The difference between this circumstance of use and solitary home use may be related to the relative success of virtual worlds in South Korea.

[2] Traditional communications companies have overlooked the value of these goods until recently. For an interesting report, see Guardian Unlimited (2002).

[3] For presentation of announced PSP specs and discussion, see Geek.com (2003). For details on the N-Gage, see http://www.n-gage.com/R1/en/gamedeck/gamedeck_faq.html

[4] Wired News (2003).

[5] Kasavin (2003) provides an insightful review of Real Life. He notes an interesting and distinguishing feature of this world:

> *Real life features a great system whereby newbie players will automatically be guided along through the early levels by one or more "parent" characters who elect to take newbie characters under their wing. This is a great system, as these older, more-experienced characters reap their own benefits from doing a good job of guiding the newbie character along. The system does have some problems, though – sometimes you'll*

golf, cycling, basketball, softball, and other sports.[1] Physical bodies, real objects, and bodily movement really do contribute to fantasy.

Celebration of identity through experiencing the opportunities and challenges that another world presents is intimately related to interpersonal communication. Each human person is a separate virtual world that cannot be fully assimilated to any other. But these separate virtual worlds share considerable common features in their design, e.g. DNA sequences. Because human bodies are similar and there is only one real world, the virtual world of each person also shares with other persons considerable accumulated content in the form of common, past experiences.[2] The evolutionary creation of human beings has given humans a distinctive capacity to understand others like themselves. Celebration of identity for humans necessarily requires making sense of presence of another like oneself.

Real-time text messaging has become an economically significant dimension of interpersonal communication. Virtual worlds support textual communication much more extensively than they support voice communication (or the use of sound more generally). Text messaging is the predominate form of real-time communication among virtual world players. Text messaging is also used more generally. In early 2002, the users of the 47 million active mobile phones in the United Kingdom sent on average 1.6 short text messages for every minute of voice conversation between mobile phones.[3] Textual instant-messaging services based on wireline Internet connections are also popular. In the U.S. in September 2001, about 20% of persons aged 10 and older used instant (text) messaging at home, and on average they spent about as much time using instant messaging as persons spend on average using the telephone.[4] A distinct alphabet and vocabulary has developed for text messaging, one capable of expressive and moving poetry.[5]

Insights into sense of presence provide insights into the value of sensuous modes in interpersonal communication. Text-based forms of communication provide more control over external

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> encounter "griefer" parents who shirk their responsibilities or, even worse, seem content to harass newbie players.

Few economists have taken this feature seriously, as Morse (2001) insightfully points out. Moreover, this feature tends to be associated superficially and unjustly with a particular sex or character type, i.e. "the agony of mothers' choices between working and staying at home."

[1] Fantasy football, baseball, cycling, and other sport games (see, e.g. http://games.espn.go.com/cgi/home/Request.dll?FRONTPAGE and http://www.dailypeloton.com/fgmain.asp) are examples of another sort of connection between worlds.

[2] Doubting that there is only one real world tends to undermine communication with others.

[3] Oftel (2002b), Table 2, shows 4,136 million short messaging service (SMS) messages between mobile phones for April-June, 2002. Over the same period mobile phones terminated 6,032 million minutes of voice calls. Oftel (2002a), Table 2, shows 3,506 million minutes of calls from fixed lines to mobiles. Thus mobile-to-mobile voice conversation minutes were 6,032 minus 3,506 = 2526 minutes. Mobile phone messaging, while currently negligible in the U.S., is common in Europe and Asia, and has been growing particularly rapidly in China.

[4] Jupiter Media Metrix (2001) indicates that instant messaging users spend about 58 min/wk doing instant messaging.

[5] The winner of the second Guardian text message poetry competition was this poem, composed by Emma Passmore:

> I left my picture on th ground wher u walk
> so that somday if th sun was jst right
> & th rain didn't was me awa
> u might c me out of th corner of yr I & pic me
> up

See Keegan (2002). Examples of favorite messages ("Top Msg List"), as well as a translator, are available at www.transl8it.com

sense while requiring more work and more brain resources for making sense of presence. An industry analyst recently described Microsoft's vision of "Presence in Context" thus:

> *every folder, every comment, every appointment is associated with an implicit buddy list. Every context offers immediate access to the community of those people who are some-how associated with it. ... Presence is the killer app: it is the driving wheel for real-time messaging. Bringing presence into every context is going to rework how we work, and how businesses operate.*[1]

Providing sense of presence at low cost (immediate access in every context) seems inconsistent with text messaging, which has a higher cost of making sense of presence than voice and images. Thus if Microsoft's vision truly points to increased value, it probably also points to increased sensuous scope in messaging.

Reduction in mobile voice rates and the development of more sensuously rich messaging ca-pabilities on the Internet are likely to lead to a shift from text messaging to voice and audio-visual messaging in some major applications. Most personal use of real-time text messaging, like use of telephony, concerns social communication among friends and family. Controlling the external sense of presence in not likely to be important in such communication practice, while lowering the cost of making sense of presence is likely to have value. In social interaction among friends and family, technological, operational, and pricing factors probably limit demand for more sensuously rich messaging, not more fundamental aspects of human communication.[2] In contrast, in virtual world, chat room, and discussion forums, persons are typically much more concerned to limit or manipulate others' sense of presence.[3] These applications are likely to continue to favor use of text.

Mobile camera phones, which can reduce the cost of making sense of presence, are rapidly becoming the most prevalent photographic devices. From the launch of J-Phone's "sha-mail" camera phone service in Japan in November, 2000, through to August, 2003, about two-thirds of J-Phone's mobile users have adopted camera-equipped mobile phones.[4] By the end of 2002, 15 million camera phones had been sold to the 73 million mobile phone users in Japan.[5] The share of handsets equipped with cameras among mobile phones bought in Japan in 2003 is likely to be about 90%.[6] Although camera phone diffusion in the rest of the world has been slower than in Japan, global camera phone sales outpaced global sales of stand-alone digital cameras in the first half of 2003.[7] Persons tend to carry mobile phones with them at all times, but tend to carry a stand-alone camera only with specific intentions. The rapid proliferation of mobile camera

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[1] Boyd (2003).

[2] The culture and habits that have arisen with text message will help to sustain it, but probably not for most persons over the long term. Of course, some genres of tense communication among intimates (e.g. "Dear John" letters) are likely to have a stable textual practice.

[3] Bartle (2003) pp. 118-9.

[4] Vodaphone (2002) p. 30 and Okabe and Ito (2003).

[5] Asahi Shimbun (2003). About Nov. 2002, J-Phone had sold 7.3 million camera equipped phones and had one mil-lion picture-messaging ("sha-mail") users. See Belson (2002), Latour (2002) [misinterprets camera sales as user count], and RCR Wireless News (2002). NTT DoCoMo, which has offered picture phones and services since June 2002, announced in mid-January, 2003, that it had sold 5 million camera phones, including a million in the previous month. See TelephonyWorld (2003). KDDI has been offering a picture phone and associated communication ser-vices since April, 2002.

[6] Okabe and Ito (2003).

[7] Strategy Analytics (2003).

phones means that persons much more frequently have with them a device capable of making photographs.

Use of camera phones thus far is similar to historical use of stand-alone cameras and plain-old telephone service. In Japan, mobile camera phones have become well-established. Mobile camera phone users in Japan in July, 2003, on average engaged in about 160 minutes of voice conversation and transmitted three photos per month.[1] These figures imply about 53 minutes of voice conversation for every photo transmitted. This ratio falls within the historical range produced across the past century in the U.S. for telephone minutes and photographs.[2] Mobile camera phones give persons the ability to make and transmit images almost anywhere, in the same

way that a mobile phone gives persons the ability to conduct a voice conversation almost anywhere. The relative use of these new communication opportunities has changed remarkably little.

Without significant change in users' understanding of the good that mobile camera phones support, historical regularities in demand for voice minutes and photographs are likely to be a good guide to anticipating demand for mobile camera phone functions. Monthly voice minutes of use for mobile phone users in the U.S. is about three times higher than monthly voice minutes of use for mobile phone users in Japan.[3] Thus the historical regularity in telephony and photography use suggest that U.S. users, on average and with well-established service under current voice use and current conventional photographic practice, will use their mobile camera phones to transmit about nine photos per month. Service providers that seek to stimulate the use of the photo features of mobile camera phones should recognize that use of voice minutes and transmission of photographs are likely to be complements. Thus more aggressive pricing plans for voice service from mobile camera phones might be an effective means to stimulate use of photo capabilities.

Current mobile camera phones are not well-designed to create value in making sense of presence. Using a mobile phone, persons make sense of presence through mutual, real-time voice

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[1] The voice usage figure, covering inbound and outbound minutes, is a relatively small extrapolation from the fiscal year 2003 figure in NTT DoCoMo (2003a), p. 38 ("DoCoMo in Figures"). Photos transmitted is calculated from data in NTT DoCoMo (2003b) p. 5, apparently miscalculated in Pringle (2003).
[2] See Table 7, infra.
[3] Yankee Group (2003) found that the average U.S. wireless subscriber has 490 minutes of wireless use per month.

interaction. However, camera phones do not effectively implement mutual, real-time photo exchange among conversing users. The physical design of current camera phones forces the user to interrupt the voice conversation in order to take a photo. Camera phones' development has generally been oriented toward higher resolution photos (more megapixels) stored on-camera or forwarded to websites. Although making sense of presence is a fundamental source of value in communication, the development of camera phones has not recognized that images and voice are complements in making sense of presence.

Better designed mobile camera phones could reduce the cost of making sense of presence. Seeking to understand another includes seeking to understand the other's circumstances. Persons in physical proximity, by virtue of having a common form of bodily being, have common knowledge of their physical circumstances. Camera phones that allow users to share what they see help to support the circumstantial component of sense of presence.   The resolution of the images shared, or the capability to share video, is likely to matter less to sharing sense of circumstances than a simple, integrated, interactive means of exchanging visual sense of circumstances. For example, a mobile camera phone might put real-time image exchange capability in the user's hand while maintaining real-time voice conversation with a fashionable headset.[1] Sense of presence is a well-established good. Reducing the cost of making sense of presence creates value in communication.

Mobile camera phones more effectively designed to reduce the cost of making sense of presence might lead to relatively more photo use. The complementarity of sound and images in making sense of presence does not imply a specific ratio of voice and photo use. That is a function of conventional practice. In a survey of Japanese camera phone users in December, 2002, 42.4% of users took photos of "things that they happened upon that were interesting."[2] Such stimuli are impulses for interaction and sources of spontaneity that sustain conversations.   In contrast, persons typically use stand-alone cameras as planned activity within narrow boundaries of practice and subject-matter.[3]   Mobile camera phones designed to reduce the cost of making sense of presence might lead to more use of both voice and photos, but relatively more use of photos.

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[1] Such a camera phone undoubtedly presents significant design and marketing challenges. But the evidence suggests that the return from meeting these challenges would be high.
[2] Okabe and Ito (2003).
[3] Bourdieu (1965).

VI. The Good for Communications Growth

Understood as a description of sensory function, common sense tends to be regarded as base, ignoble, and uncreative. Imagine a theatre that stimulated all ordinary human senses. Here's what might come to mind: "THREE WEEKS IN A HELICOPTER. AN ALL-SUPER-SINGING, SYNTHETIC-TALKING, COLOURED, STEREOSCOPIC FEELY. WITH SYCHRONIZED SCENT-ORGAN ACCOMPANIMENT."[1] Persons in this theatre must remain seated with their hands fixed to knobs. That is a constraint on making sense. A recent exhibit at the Corcoran Gallery crossed this sensory boundary with eighteen, full-color, slightly larger than life-sized sculptural tableaux adapted from famous nineteenth-century paintings. Visitors could touch ob-

jects on the table in Renoir's "Luncheon of the Boating Party," walk into the boudoir of Manet's Olympia, and sit on the bed in van Gogh's "The Bedroom."[2] To some, this is as much of a horror as persons playing "computer games" rather than reading books.[3] Greater sensuousness tends to be associated with superficiality and shallowness, with mere representations.   Deep, bright, thinking persons, so it is thought, are far beyond this sort of sense.

Yet good book sense is not separate from sensuousness. Chinese culture has for millennia greatly revered writing characters and artifacts containing written characters. A leading work of the Chinese New Wave is a space filled with artfully written characters.[4] Huge scrolls filled with characters arc softly down from the ceiling and cross the room. Panels of impressive characters decorate the walls. All these characters closely adhere to traditional forms, styles, and aesthetic standards. On the floor, beautifully crafted books in a simple, regular array form a gently waving ocean of characters. The books are hand-printed from typefaces carved into pear wood, and they are bound with string binding and set in exquisitely crafted walnut boxes. The space evokes a sense of the rich tradition, beauty, and authority of Chinese literary culture. However, of the thousand distinct characters that fill the books, scrolls, and panels, not one is intelligible as conventional written Chinese language. It's

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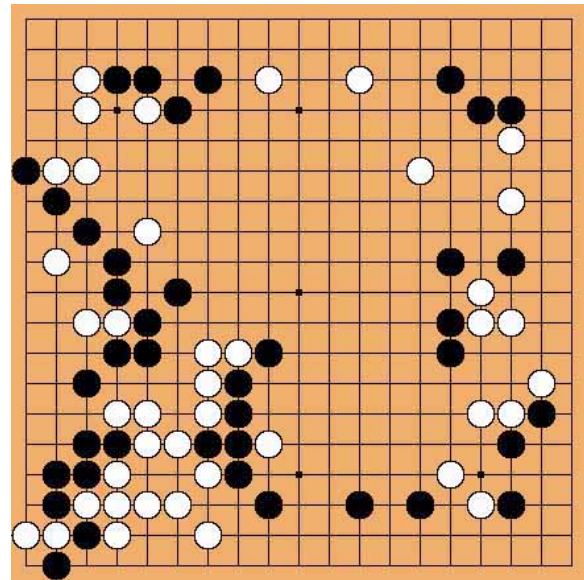
[1] Huxley (1932) p. 167.

[2] "Beyond the Frame: Impressionism Revisited, The Sculptures of J. Seward Johnson, Jr." at the Corcoran Gallery of Art, Washington, DC, Sept. 13 to Jan. 5, 2004. Seward Johnson's work is probably the best known sculptural work in the U.S. Some images from the exhibition are available at www.corcoran.com As Grau (2003) discusses, immersive art has a rich history. See also Section IV, *infra*.

[3] Gopnik (2003) savaged the exhibition: "the most mind-numbing, head-spinning, belly-flipping experience you're likely to come across. … This is the worst museum exhibition I've ever seen."

[4] This paragraph describes Xu Bing's work originally titled "Xi shi jian –shiji mo juan" (An Analyzed Reflection of the World – The Final Volume of the Century), which came to be called "Tianshu" (Book from the Sky or Book from Heaven). Some images of this work are available at http://www.xubing.com/BookFromSky/main.html See also Erickson (2001).

all nonsense, but not. The enormous cultural and material resources put into the work make powerful literary sense that jars deeply and painfully against the nonsense.[1]

Making sense is more about the distribution of production costs than about the possible characteristics of experience. When media development gave persons the choice of reading or watching television, persons spent much more time watching television. But the development of radio and television did not greatly change the value of advertising in selling goods, nor the genres of programming possible.[2] While graphical virtual worlds have been much more popular than textual worlds, participants in textual virtual worlds can experience all that graphical virtual worlds offer.[3] You don't just think about your friend. You reach out and touch her through the telephone.[4] You don't just remember your child's face. You keep a picture of him on your desk. The economics is elementary: external sensory stimuli substitute for costly bodily effort in creating the same component of sense.

Leading thinkers have recognized trade-offs of this sort. A recent winner of the Nobel Prize in economics stated:

> it is necessary to constantly remind ourselves that human activity is diffused and dominated by unconscious, autonomic, neuropsychological systems that enable people to function effectively without always calling upon the brain's scarcest resource – attentional and reasoning circuitry. This is an important economizing property of how the brain works.[5]

A leading virtual world designer described a similar trade-off from a different perspective:

> there are a lot of limitations in terms of what we can do with character simulation. So, to me that seemed like a really good use of abstraction because there are certain things we cannot simulate on a computer, but on the other hand that people are very good at simulating in their heads. So we just take that part of the simulation and offload it from the computer into the player's head.[6]

Communication services are goods positioned in the space of trade-offs between making sense with existing bodily resources and the external provision of resources for sense.

In the communications industry, this trade-off is more economically important for making sense of presence than to information transfer or storytelling. Information goods tend to be understood as externally defined and abstracted from sense. The value of communication services

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[1] In 1990, an important critic in an influential Chinese arts journal made these comments about the work:

> I have always felt that when people do something they must have a clear goal, for themselves, for others, for the people, for all mankind – to have no purpose at all is absurd and dissolute. If I am asked to evaluate the Book from the Sky, I can only say that it gathers together the formalistic, abstract, subjective, irrational, anti-art, anti-traditional…qualities of the Chinese New Wave of Fine Arts, and pushes the New Wave towards a ridiculous impasse.

As translated in Erickson (2001) p. 41. In discussing the work, Erickson, id. p. 33, notes:

> Since its sensational debut in Beijing in 1988, it has incited continuous intellectual debate, first within China and now throughout the international arena. The work's tantalizing elusive meaning fuels the debate, provoking both scholars and students of art to pull out all their methodological tools as they seek to plumb its depths. We can turn to the giants – Barthes, Derrida, Foucault – but nothing quite does the trick.

[2] On media development in relation to the economics of attention, see Galbi (2001a).
[3] Bartle (1999), Bartle (2003) pp. 119, 240.
[4] "Reach Out and Touch Someone" was a highly successful marketing slogan for AT&T long-distance telephone service. AT&T has recently re-introduced a variant of this theme in advertising for AT&T wireless service.
[5] Smith (2003) p. 468.
[6] Will Wright, Sept. 5, 2001, in Pearce (2002) p. 12. Will Wright designed the Sims series of worlds.

in information transfer depends on access to information and efficiency in information transfer. Since most demand for information is for textual information, information transfer offers relatively little scope for comparative advantage in sensuousness.[1] In storytelling, high-production-cost, streaming audio-visual stories dominate other feasible sensuous forms.[2] At the other end of the technological spectrum, the extraordinary advantages of paper and ink as a storytelling medium – low-cost, highly portable, widely accessible, and durable – make it difficult for a sensory alternatives to create a competitive advantage.[3]

Providing means for persons to make sense of presence in the absence of physical proximity is a business in which sensory innovation has enduring opportunities to create value. Making sense of presence in social interaction among friends and family has long driven demand for telephony and photography.[4] Making sense of presence also drives demand for use of e-mail, instant messaging, mobile short messaging services (SMS), and camera phones. Making sense of presence is a good not constrained by conventional distinctions between content and communication.[5] Communication services have enormous opportunities for innovation, differentiation, and commercial competition in organizing sensory modes to support production of this highly valued good.

Not understanding this good could be disastrous for major, well-established organizations. Eastman Kodak, a leader in the photography industry for more than a century, has had declining revenue for the last four years. Since its 1997 valuation high point, its stock has fallen 70% and its workforce shrunk by 30,000 jobs.[6] In attempting to adapt to digital imaging, Kodak still understands its consumer business to be about "consumers who take, share, album and print their life experiences in pictures."[7] This description says nothing about the relationship of photography to text, telephony, and camera phones. Yet with photography, as with other communication services, persons seek to make sense of others like themselves in the absence of physical proximity. The future of the consumer photography business is likely to depend on how new communication services use images to lower the cost of making

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[1] For a web usability expert's perspective on text, see Nielsen (2003a) and Nielsen (2003b).
[2] See Section V.A, *infra*.
[3] Audio books have done this, but they are a relative small business.
[4] See Section V.B., *infra*.
[5] Are blogs communication or content? Are personally developed characters and places in virtual worlds communication or content? Are most "content" authors not interested in communicating? For interesting, industry-relevant discussion, see Crosbie (2002) and Shirky (2003), including comments. Galbi (2001a) p. 39 warns of the danger of this distinction to the communications industry.
[6] Bandler (2003).
[7] From blurb on slide titled "Future – Vision" (slide 12) in Carp (2003). Carp is the Chairman and CEO of Kodak.

sense of presence.

Compared to traditional, plain-old telephone service, new, rapidly developing, low-cost software gives many persons much more cost effective means to make sense of presence. In six months, a small software firm developed a peer-to-peer communication application that provides high quality, scalable telephony service integrated with text messaging and presence indicators. Persons who have no more than dial-up Internet access can run the software, called Skype, and communicate at no additional cost, by voice telephony and text messaging, with any other Skype user around the globe. The software can be downloaded for free on the Internet. As of October, 2003, only two months after the program became publicly available, over a million copies of the software had been downloaded.[1] Undoubtedly, in different places around the globe and irrespective of regulation in any particular country, many other groups will develop similar software.[2] Integrating images into software of this type can happen much more cheaply and much more quickly than the developers of PICTUREPHONE® could have ever imagined. Such software, in many competing variants with different forms of sensory integration, will teach many persons that plain-old telephone service is an inferior product for making sense of presence.

To avoid disaster, the telecommunications industry needs to shift from providing telephony to providing means for making sense of presence. In the U.S. in 2001, the telecommunications industry employed about 1.2 million persons and collected $235 billion in revenue from end-users.[3] If those jobs and that revenue depend on providing traditional telephony service, they are at great risk. U.S. telecom industry leader Ivan Seidenberg reportedly recognizes the problem:

> *What's behind Seidenberg's sudden series of audacious moves?... [one major reason is] Seidenberg's conviction that telecom as we know it is history. In its place will emerge what he calls a "broadband industry" that will use the new, superfast Net links and high-capacity networks to deliver video and voice communications with all the extras, like software for security.*[4]

Building and maintaining a highly reliable, universally accessible communications network takes dedicated workers, much capital, good organization, and effective regulation. For the value of that network to be recognized, it must be associated with an enduring good. That good is not telephony, video calling, information services, or pre-produced video on demand. That good is sense of presence. The communications industry can continually provide better means for producing it.

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[1] Based on information at www.skype.com

[2] There are many competing approaches to implementing voice communication on the Internet. See discussion at http://www.voxilla.com/modules.php and http://www.voxilla.com/Article18-nested-order0-threshold0.phtml

[3] From July, 2001 to July, 2003, 172,000 jobs have been lost in the telecommunications industry. These employment figures are based on the U.S. BLS Current Employment Survey data category "Information"/"Telecommunications," minus subcategory "Cable and other program distribution." Data available at http://www.bls.gov/ces/home.htm Revenue figure from FCC (2003) Table 1, p. 9

[4] Business Week (2003). Seidenberg is the Chief Executive Officer of Verizon. Verizon anticipates about $12 to $12.5 billion in capital expenditure in 2003. See Babbio (2003), slide 15.

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1. (p. 2) By photograph by Douglas Galbi. (*)
2. (p. 5) Data pipe photograph by Douglas Galbi of calligraphy by Douglas Galbi. (*)
3. (p. 6) Get up photograph of dance choreographed by Lodi McClellan, A Concert of Student Works, MIT Dance Workship, May 5-6, 1989.
4. (p. 7) Victorine photograph by Douglas Galbi. (*)
5. (p. 8) Chauvet-Pont-d'Arc cave painting, Slide no. 34 (photo Jean Clottes). With the support of the French Ministry of Culture and Communication, Régional Direction for Cultural Affairs – Rhône-Alpes, Régional Department of Archaeology.
6. (p. 9) Exhibition photograph by Douglas Galbi, after A Thought to Consider, J. Seward Johnson, Jr., after In the Winter Garden, Eduoard Manet.
7. (p. 12) Runaway model photograph by Douglas Galbi of sculpture by Douglas Galbi. (*)
8. (p. 15) Souls photograph by Douglas Galbi. (*)
9. (p. 17) Raggedy Ann photograph by Douglas Galbi of doll made by Joan Galbi, after Raggedy Ann of Johnny Gruelle, see www.raggedyann-museum.org/intro.html
10. (p. 21) Hamzanama folio, Arthur M. Sackler Museum, Harvard University Art Museums, Francis H. Burr Memorial Fund, 1941.292.2; photo, Allan Macintyre, © President and Fellows of Harvard College. Catalog no. 61 in Seyller (2002).
11. (p. 27) Hamza's son Rustam, questioning a slave-girl who has betrayed his love affair with the lady Mihr Afruz, Hamzanama folio, detail, Victoria & Albert Museum, London, IS.1519-1883; displayed in web presentation on www.vam.ac.uk in conjunction with the "Adventures of Hamza" exhibition. Catalog no. R160 in Seyller (2002).
12. (p. 28) Detail from image 9.
13. (p. 31) Hamzanama folio, The Conqueror at the Gate of a City, Mir Sayyid 'ali, 1567-1581/2, Seattle Art Museum, Gift of Dr. and Mrs. Richard E. Fuller, 68.160, photo © Paul Macapia. Catalog no. 38 in Seyller (2002).
14. (p. 32) Hamzanama folio, Zumurrud Shah falls into a pit and is beaten by suspicious gardeners, Victoria & Albert Museum, London, IS.1516-1883; diplayed in web presentation on www.vam.ac.uk in conjunction with the "Adventures of Hamza" exhibition. Catalog no. 28 in Seyller (2002).
15. (p. 37) Same as image 9.
16. (p. 41) Hamzanama folio, Lifting an elephant single-handed, Farrukh-Nizhad so astonishes two brothers that they convert to Islam, MAK-Austrian Museum of Applied Arts / Contemporary Art, Vienna, B.I. 8770/26. Catalog no. 52 in Seyller (2002).
17. (p. 45) Byzantine *hodigitria*, courtesy of Yuri Koszarycz, www.mcauley.acu.edu.au/~yuri/index.html
18. (p. 46) Hamzanama folio, Zumurrud Shah flees with his army to Antali by flying through the air on urns sent by sorcerers, MAK-Austrian Museum of Applied Arts / Contemporary Art, Vienna, B.I. 8770/28. Catalog no. 57 in Seyller (2002).
19. (p. 52) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.2r, detail.
20. (p. 58) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.24v, detail.
21. (p. 63) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.2r, detail.

22. (p. 68)Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.24v, detail.
23. (p. 71) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.4r.
24. (p. 73) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.4r, detail.
25. (p. 77) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.20v, detail.
26. (p. 78) Morgan Bible of Louis IX, The Pierpont Morgan Library, New York, Ms M.638, f.4r, detail.
27. (p. 87) River in the woods photograph by Douglas Galbi. (*)
28. (p. 88) Belly dancer charcoal drawing by Joan Galbi arranged and photographed by Douglas Galbi. (*)
29. (p. 96) Salus Populi Romani *hodigitria*, photograph courtesy of Johann G. Roten, www.udayton.edu/mary
30. (p. 101) Flower portrait of William Shakespeare, permission from the Royal Shakespeare Theatre pending.
31. (p. 107) Friends photograph by Douglas Galbi.
32. (p. 109) Dad dreaming photograph by Douglas Galbi. (*)
33. (p. 113) Square word calligraphy red-line tracing book demonstration, Xu Bing, courtesy of Xu Bing, www.xubing.com
34. (p. 118) Detail from McCloud, Scott, *Understanding Comics* (New York: Paradox Press, 1999) p. 139, with permission from Scott McCloud, www.scottmccloud.com
35. (p. 134) Photographer photograph by Douglas Galbi. (*)
36. (p. 137) A Way from Home photograph of dance choreographed and danced by Douglas Galbi in A Concert of Student Works, MIT Dance Workship, May 3-4, 1991.
37. (p. 139) Go board after Third Ghost Move of the Vomiting Blood Game, courtesy of the Sensei's Library, http://senseis.xmp.net/?BloodVomitingGame
38. (p. 141) Francisco's granddaughter photograph by Douglas Galbi. (*)
39. (p. 157) Ready to ride photograph by Douglas Galbi.
40. (p. 160) Two halves photograph by Douglas Galbi. (*)
41. (p. 164) Duane photograph by Douglas Galbi (*)
42. (p. 166) New York / New Russia photograph by unknown volunteer photographer.
43. (p. 174) Will you give me a ride? photograph by Douglas Galbi.
44. (p. 187) Oscar Wilde photograph at issue in *Burrow-Giles Lithographic Co. v. Sarony* (1884), courtesy of Steven D. Jamar, www.law.howard.edu/faculty/pages/jamar/
45. (p. 189) One of Bleistein's circus posters at issue in *Bleistein v. Donaldson Lithographing Co.* (1903), courtesy of Steven D. Jamar, www.law.howard.edu/faculty/pages/jamar/

This work is intended to advance public discussion of communications policy, to promote the progress of science and the useful arts, and to provide joy to any persons around the world who might encounter it.   It is a non-commercial, freely available work.

I am grateful to the persons who helped me to get permissions to use images in this work. They could have refused to do so in many ways.[1] To get these permissions, I spent $259 of my own personal money. Undoubtedly the persons in charge of providing permissions could have sought to charge me much more than they actually did. I am grateful that they did not seek to charge more. I am also grateful that I have the financial means to pay the prices that they set.

Public resources for visual communication and lawful use of images are increasingly important public concerns. Legal and moral rights with respect to expressive works developed primarily from concerns about copying texts in circumstances of widespread free use of words orally. Laws like copyright law gradually extended to encompass most media. However, in describing a text, a scholar can still use the same, free public language that the text uses. Free, public resources for visual communication are much less developed, and copyright law with respect to images is complex and arcane.[2] New communications technologies give persons much better opportunities to communicate visually. My work indicates that communications growth depends on innovations in communication, including innovations in topics, circumstances, artifacts, and use of sensory modes. Public resources for visual communication and widely respected law governing use of images contribute greatly to promoting such innovation.[3]

With respect to the images for which "(*)" follows the credit text above, I grant to everyone permission to use these images under the Creative Commons Attribution-NonCommercial-ShareAlike License. To view a copy of this license, visit http://creativecommons.org/licenses/by-nc-sa/1.0/ or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA. This work contains images of unique artistic masterpieces of great importance in world history. Many persons have invested large amounts of time and resources in creating them, preserving them, and making them available to the public. I encourage everyone to respect the rightful claims that others have with respect to images used in this work.

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[1] One person in charge of issuing permission to use a photograph posted on an art foundation's website asked to see a copy of my paper as part of the process to determine whether to grant me permission to use the image posted on the foundation's website. That seems to me to be the sort of requirement that tends to suppress free discussion and multiple viewpoints. Another reaction that I encountered was simply to ignore my e-mails and telephone calls. The difficulty and cost of gaining permissions varies greatly from person to person and from institution to institution. Getting permissions has been a challenge in doing this work.

[2] For discussion of U.S. law concerning these issues, see e.g. Butler (1998) and Dougherty (2001).

[3] More appreciation for the importance of public digital resources is beginning to develop. See, e.g. the Public Knowledge Project, at http://www.pkp.ubc.ca/resources/index.html, Public Knowledge, at http://www.publicknowledge.org/, RLG, at http://www.rlg.org/rlg.html, and European Science Foundation (2003).

Table Notes
Sources, Definitions, and Calculations

Table 2

Ranks for England are for names from forty dispersed English parishes. See Smith-Bannister (1997), Appendix C, pp. 196-203. This source does not provide the popularity percent. It is estimated as the average across the corresponding rank for the Warwick sample (1538-1659) and the North/Cumbria sample (see Table A3; est. birth years included here, 1538-1659).

The figures for Warwick for 1381-1405 and 1465-1509 are from persons entered into the Guild of the Holy Cross, the Blessed Mary, and St. John the Baptist for the years 1406-1430 and 1490-1534, respectively.[1] This guild was located in Stratford-upon-Avon. It provided social, educational, and spiritual services to its members, and owned a school, a chapel and other real estate in Stratford. Early in the fifteenth century, it had perhaps 250 members, while the population of Stratford-upon-Avon may have been around 1000.[2] Thus membership in the guild amounted to perhaps half the adult population of Stratford. In the early fifteenth century, the cost for a living person to enroll in the guild was 20s, while a soul could be enrolled for 6s 8d. Payments in installments, or with goods and services, or at a discount, were occasionally made.[3] By earlier in the sixteenth century, a (living) husband and wife could enroll for 6s 8d, while a (dead) soul could be enrolled for 20d (1s 8d).[4] Wage rates for building craftsmen and laborers in southern England, 1412-1532, were 6d and 4d per day respectively.[5] Thus a laborer could join the guild for about a month's worth of work. Given that this was a once-in-a-lifetime fee and that persons attached high value to having a good funeral, which the guild arranged, the entrance fee was probably not considered high to most persons in Stratford in the early sixteenth century. These facts provide evidence that the names of guild entrants were representative of the names of all persons in Stratford.

The figures for Warwick for years 1513 and later are from the parish registers for Stratford-upon-Avon and Solihull in the county of Warwick.[6] Solihull is about 15 miles north of Stratford. All years are for baptism records, except for 1513-1525. Names for those years are from marriages in Solihull, 1538-1550. Frequencies for Mary do not differ significantly between Stratford-upon-Avon and Solihull. Sample sizes are provided in Table A2. The name database is available at http://www.galbithink.org/names/engb1800.htm

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[1] Bloom (1907) provides a transcript of entrants from 1406 to 1534.

[2] Attendance at the guild's annual feast in 1409, 1411, and 1413 was 133, 108, and 160 persons, respectively. Rosser (1994) p. 439, which also estimates total membership as 250. On Stratford's population, see Dyer (1997) pp. 44-5. Note that the population would have fallen after the great plague of the mid-fourteenth century. Wrigley and Schofield (1981) p. 528 estimates that in 1541 48% of the English population was 25 years old or older.

[3] E.g. Bloom (1907) p. 12, "William Reve, & Agnes, his wife…40s…payable by installment." John Prynce, "Master Cook of the Hospice of Sir Richard, Earl of Warrewyke, entered in 1416 thus: "And made his fine, giving nothing save that he will be always glad (assiduous) to give advice & aid if he be forewarned, annually during his life, and that he will come & labour at the Common (Feast)." Id. p. 26. Johane, wife of John Phippus, entered in 1415 for 13s 4d.

[4] Persons were also enrolled individually for 6s 8d, while some husband-wife combinations were enrolled for twice that, i.e.13s 4d.

[5] Phelps Brown and Hopkins (1981) p. 11. Dyer (1997) p. 53 provides a similar estimate for Stratford.

[6] See Galbi (2003), compiled from Savage (1905) and Savage (1904).

Table 3

Data for activities other than telephone conversations are from Galbi (2001a) pp. 11-20 and are reported to the nearest hour. The figure for 1925 is for circa 1925.

Unfortunately, time budget studies have not typically separated telephone conversations from voice conversations among persons in physical proximity. In the context of reporting time use, the amount of telephone time is small and tends not to be accurately reported (see Brandon (1981) Figures 5.B.13 and 5.B.14, and Sorokin and Berger (1939) pp. 52) .

To get per person telephone use time during discretionary (non-work) time, total minutes of telephone conversation time (see sources and estimates for Table 7) has been multiplied by two to get minutes of telephone use for the population [ver. 1.0 of this paper incorrectly used conversation time]. Telephony use time has been divided by the total US residential population ages 10 and older, scaled to minutes per week, and multiplied by .5 to separate home use from business use. The figure has been rounded to the nearest half-hour. Thus zero for 1925 indicates less than a quarter hour of discretionary telephone use per person per week.

Table 4

Year 1890: The figures for photographers, artists, and dentists are the figures given for "photographers," "artists and teachers of art," and "dentists," respectively, in Census (1900) Table III, pp. xlix, xxxiv. Figures for accountants and authors are the figures for "accountants and auditors" and "authors" given in Historical Statistics (1975) D 235, 244 (p. 140) for 1900, deflated by the per decade growth rate indicated by the figures for 1880 and 1900 for these categories in the IMPUMS OCC1950 coding frequency count, available at
http://www.ipums.org/usa/pwork/occ1950b.html

Year 2000: Figures from Statistical Abstract: 2001, No. 593, p. 380. Category descriptions are:

Table 4 Heading	Statistical Abstract Category
Accountants	Accountants and auditors
Artists	Painters, sculptors, craft-artists, and artist printmakers
Authors	Authors

Table 5

End-user supplies includes camera, film, photofinishing services, etc. sold to produce custom photographs to be viewed by individuals. It does not include photography equipment and supplies used in industrial production and health services, such as photoduplicating, x-ray photographs, and dental film. Professional services are the receipts of professional photographers, including both portrait and commercial studio categories.

Year 1890: Statistics are from the Census (1890), Table 4, p. 104. End-user supplies are the sum of "value of products…" in categories "photographic apparatus" ($624,432) and "photographic materials" ($2,121,387), both inflated by 20% to account for retailing margins. Professional ser-

vices are "value of products, including custom work and repairing" in the category "photography," which was considered a "manufacture" through the Census of 1900. Subsequently, professional photography was considered a service establishment, and included only in the first business census covering services in 1939. In 1890, 3,105 establishments were reported with value of products, $15,488,324. In 1900, 7,553 establishments were reported with value of products, $23,238,719. The large increase in the number of establishments reporting in 1900 relative to 1890, and the small share of establishments relative to the number of photographers reported in the population census of 1890, indicates underreporting of establishments in 1890. The number of establishments in 1890 was estimated as 5,618, which is establishments per photographer in 1900 (0.28) times the number of photographers in 1890 (20,040). The value of products of the additional imputed establishments was estimated based on the revenue per establishment for the increase in establishments and revenue from 1890 to 1900.

Year 1939: Professional services are "receipts" in category "photographic studios" in Census (1939), Service Establishments, v. 3, Table 1A, p. 16.

End-user supplies for 1939 are estimated from Kodak's 1939 US sales ($104,470,778; see Kodak Annual Report, 1939, p. 5), multiplied by an estimate of Kodak's non-industrial/health sales (.5; see *id.*), and divided by Kodak's market share in film about this time (0.85; see Kadiyali (1998) p. 91-2), and marked up by a distribution margin roughly estimated at 20%. The resulting estimate is $74 million.

A second estimate of end-user supplies for 1939 can be built from census service and retail categories. The Census (1939) Service Establishments, v. 3, Table 1A, p. 16, lists, under "business services," receipts of photofinishing labs ($16.1 million). Retail photofinishing services include some mark-up, estimated at 20%, over this total. The Census (1939), Retail Trade, Table 18, pp. 163-9, provides retail sales of cameras, projectors, photo equipment and supplies in six kinds of businesses:

1939 Census of Business Retail Sales of End-User Photo Supplies	
Retail Store Class	Sales of Photo Supplies
Photographic supply-camera stores	20,144
Jewelry stores	1,858
Opticians	998
Sporting goods stores	899
Radio stores	373
Radio-musical instrument stores	104

Combining photofinishing, marked up, and the above retail sales gives an end-user supplies estimate of $43 million.

A third estimate can be constructed from the Census (1939), Distribution of Manufacturers' Sales, Table 1, p. 197. In the category "optical instruments and lenses," $2.1 million in sales were distributed to non-industrial entities. In the category "photographic apparatus and materials

and projection equipment (except lenses),” distributed sales were $141.2 million. Subtracting from those sales $12.1 million exported and $26.5 million that went directly to industrial users, adding sales to non-industrial entities from “optical instruments and lenses,” and marking up by 20% gives $125 million.

The first estimate, $74 million, which is close to the average of the other two, is used in the table.

Year 1967: Professional services are from Census (1967), Table 2, “Photographic Studios” (SIC 722) [which includes portrait and commercial], all establishments. End-user supplies are total “retail sales of photographic merchandise and photofinishing” for 1967 from Wolfman Report for 1968.

Year 1997: Professional services are from Census (1997), “Photographic services” [NAICS code 54192], all taxable firms, receipts. The last Wolfman Report was published in 1994, and covered the 1993. End-user supplies for 1997 are extrapolated from Wolfman Report’s retail sales for 1983 and 1993.

Table 6

Year 1890: Historical Statistics (1975), Series R 2, indicates 3.7 telephones per 1000 population in 1890. There were roughly 80,000 cameras in the US in 1890, or 1.3 cameras per 1000 population (see below Table 7, notes concerning amateur photo count in 1890). The ratio of population to households in 1890 was about 5 (Historical Statistics (1975) Series A 257). These figures imply that about 2% and 1% of households had telephones and cameras, respectively.

Telephone Household Percentage, 1938, 1958, and 1995: These figures are from the Statistical Abstract: 1999, No. 1440, p. 885, interpolated where necessary.

Camera Household Percentage for 1938: Taft (1938) p. 404 estimates 15 million amateur photographers. One amateur photographer is assumed to be per household. Household figure from Historical Statistics (1975) Series A 242.

Camera Household Percentage for 1958: Wolfman Report for 1960, p. 17.

Camera Household Percentage for 1995: PMA (2000) Chart1a-1, p. 14. The prevalence of one-time-use cameras has reduced camera ownership in 1999 to 87% of households.

Table 7

Professional photos are added to amateur photos to get total photos. Since the issue of interest is photo use, the number of professional photos is considered to be the number of photos persons purchased from professional photographers, not the number taken. Identification card photos are considered product inputs, not end-use photos, and hence are not considered. Photos replicated in magazines, newspapers, and posters are not counted because persons do not make explicit and separable choices to acquire these photos. The number of amateur photos has grown much faster

than the number of professional photos, and hence in the estimate of total photos the number of professional photos matters most for the photo counts in earlier years.

Professional Photographs

In a knowledgeable article describing the development of photography, Tribune (1853) reported the estimate that "there cannot be less than 3,000,000 daguerreotypes taken annually in the United States." The Census of 1850 reported 938 daguerreotypists, while the Census of 1860 reported 3,154 daguerreotypists and photographers. Interpolating these figures implies 1350 photographers in 1853. Bear (1873) describes an industrious daguerreotypist working by himself who sold 10 daguerreotypes a day, at $1.50 per daguerreotype, for several months in 1846. This operation was highly profitable, but the daguerreotypist moved regularly from placed to place. This suggests that his business was not a steady-state operation. Photographer (1896) describes a large establishment with an intricate division of labor that produced 400-500 daguerreotypes a day at $3 to $8 per daguerreotype in 1841. Werge (1890), pp. 196-202, describes a "factory" portrait operation c. 1854 that made portraits for 25 cents per photo. The estimate of 3,000,000 daguerreotypes annually in 1853 implies about 2200 daguerreotypes per photographer in that year. The cost of photography and its technical difficulty surely fell from 1853 to 1890, but the demand benefits of offering a new service also declined. Scaling the 1853 daguerreotype estimate by number of photographers indicates about 44 million photos in 1890.

Most professional photographs are personal portraits. West (2000), p. 2, makes an informed estimate that, in 1890, a typical family probably owned about 10 photographs. In 1965 and 1983, about one out of every three households purchased professional portraits (Wolfman Report for 1968, p. 36; Report for 1983-84, p. 84). In 1999, about 26% of households purchased professional photographic services (PMA(2000) Chart 13-3, p. 157). The number of professional photographs purchased per year can be estimated as the number of households, times the share of household purchasing, times the number of photos purchased per households purchasing. Combining Census data on households with rough guesses for shares purchasing and photos purchased gives the following estimates of professional photos:

Estimate of Total Professional Photographs Purchased				
Year	Households	Share Purchasing	Photos Purchased	Total Photos
1890	12,690	0.33	5	20,939
1939	34,408	0.33	15	170,322
1973	68,179	0.33	25	562,479
1995	98,984	0.33	25	816,616

These figures are used, except that, in light of the alternative estimate of 44 million professional photos in 1890, a middle estimate of 30 million is used for 1890.

Amateur Photographs

Year 1890: Ford (1989) p. 62 states, "By September of 1889, over 5,000 Kodak cameras had been sold in the USA, and the company was daily printing 6-7,000 negatives." Taking the work week as 5.5 days, 6,500 negatives per day implies 1.86 million photos per year. Jenkins (1975), p. 18, notes Kodak sales (U.S.) as $0.45 million in 1889 [cited to U.S. v Eastman Kodak. pp.

2565-69] and value of US photography materials and apparatus [rom 1890 Census of Manufactures] at $2.75 million. This implies a 0.16 Kodak share of the photography industry. Kodak camera and apparatus sales in 1892 [$207,212, from United States v. Eastman Kodak (1915), 226 F. 62, 67] amount to 0.33 of total US "value of products" of photographic apparatus manufacturers [$624,342, from Census (1890)]. Since Kodak focused played a lead role in promoting amateur photography, its share of amateur photos was probably larger than its share of other aspects of the photography industry. Taking 0.5 as the share of Kodak photos in total amateur photos in 1890 implies 4 million amateur photos in 1890.

United States v. Eastman Kodak (1915) [226 F. 62, 67] states that sales of "Kodak and apparatus" amounted to $207,212 and $74,594 in 1892 and 1894, respectively, while sale of [Kodak] film amounted to $102,404 and $81,319 in 1892 and 1894, respectively. The decrease was attributed to competition from the recently introduced Bullseye camera. In 1890 Kodak was selling the original Kodak, renamed Kodak No. 1, and the Kodak No. 2, which was introduced in 1889. Kodak's 1895 price list [Kodak (1895) p. 68] indicates the prices for "reloading, developing, and printing" for the Kodak No. 1 and No. 2 were both $10, while the numbers of exposures included were 100 and 60, respectively. The film itself sold for $2.50. Assuming an average exposure number of 80 [equal numbers of Kodak No. 1 and No. 2 in use] and an average sale price for film and any associated developing and printing of $5 implies 1.64 million Kodak photos. Taking Kodak's photo share to be 0.5 implies about 3 million total amateur photos in 1890.

A figure of about 4 million amateur photos in 1890 is reasonable in light of other evidence. Figures in West (2000) p. 24, Ford (1989) pp. 62-3, and Kodak (2003) suggest that Kodak sold about 20,000 cameras by the end of 1890. Taking Kodak's share of camera sales in 1890, estimated as 0.25, as also a rough estimate of Kodak's share of total camera's sold by that time implies total cameras extant were 80,000. These figures seem consistent with Kodak's emergence as a camera seller in 1888, following on from a successful business selling dry plates and film. The 1890 Census found 20,040 persons who identified themselves as photographers. Assuming one camera per photographer, professional or amateur, implies about 60,000 amateur cameras. George Eastman estimated that there were about 50,000 amateur photographers in the U.S. about 1889 (Brayer (1996) p. 68). Along with the total photo figure, the figure for total photographers implies about 80 photos per photographer per year. This is about the average number of photos included in an early Kodak film cartridge (see previous paragraph).

Year 1939: The Wolfman Report for 1960, p. 11, gives 2.2 billion and 1.8 billion for amateur pictures made in 1959 and 1953, respectively. The Eastman Kodak Annual Report for 1954, p. 20, indicates that sales in 1954 were 4.1 times greater than sales in 1939, holding prices constant (1939 dollars). The sales category "amateur photographic" fell from 33% of Kodak sales in 1939 (Annual Report, 1939, p. 5) to 29% of Kodak sales in 1954 (Annual Report, 1954, p. 19). These figures are consistent with 3.5 and 4.35 times growth from 1939 to 1953 in amateur and non-amateur Kodak sales. Scaling 1.8 billion amateur photos in 1953 down by a factor of 3.5 gives 514 million amateur photos in 1939.

Taft (1938) p. 404 states, "there are at the present time at least fifteen million amateur photographers who are actually engaged in their hobby in this country." A footnote adds:

> *The New York Times (May 16, 1937, section 4, p. 9) estimated that even during the recent depression there were one and one-half million cameras owned by New York's metropolitan population of seven million and that one million three hundred thousand photographs were being taken weekly.*

Scaling the number of photos taken by New York's population relative to total US population and a year's duration implies 1.3 billion photos per year. A weakness of this figure is that persons in a large city probably take on average more persons than persons who live in areas with lower population density. The data also imply that about 45 photographs were being taken per camera per year in New York. Multiplying this figure by 15 million amateur photographers implies 676 million amateur photographs per year. This figure is taken as the best estimate of amateur photos in 1939, and is used in the calculation of total photographs.

Years 1973 and 1995: The amateur photo count for 1973 is from the Wolfman Report for 1993, the last report. The amateur photo count for 1995 was extrapolated from the Wolfman Report counts for 1983 and 1993.

Telephone Conversation Minutes

Year 1973: FCC (1999) Table 21-1 provides total telephone minutes of use data yearly from 1980. The figures are called "dial equipment minutes-of-use" (DEMs) and are used in FCC analysis of cost support for telephony company rates. Because of the way DEMs are measured, about two DEMs are measured for each minute of telephone conversation between two persons. The minute estimates in Table 7 are conversation minutes.

The growth rate of telephone minutes increased sharply toward the end of the 1990s. This change is associated with dial-up access to the Internet. The year 1995 was chosen as the final date of comparison because that is the most recent year in which the average telephone minute volumes probably was not significantly affected by Internet use. Wireless telephony minutes were not significant relative to wireline minutes in 1995.

Historical Statistics (1975), series R 9-12, and FCC SOCC 1979, Table 9, p. 18, together provide total telephone calls yearly from 1880 to 1979. Average call duration is needed to estimate call minutes from these statistics. Average call duration depends significantly on whether uncompleted calls (busy signals and no answers) are included in call totals. Mayer (1973) p. 228 describes his sample as having almost 30% of calls lasting less than thirty seconds (see also id. Fig.3, p. 229). In contrast, Garfinkel and Linhart (1980) Fig. 5, p. 18, seems to include almost no calls less than thirty seconds. The presence or absence of short calls, plausible associated with uncompleted calls, can significantly affect average call duration. Average call duration also depends on the mix between business and residential users. Compared to a residential user, a business user tends to make more calls, but of shorter duration (Garfinkel and Linhart (1980) p. 18).

What is included in available call volume time series is not clear. FCC SOCC 1979 Table 9, p. 18, ft. 3 indicates that local and toll figures are partially estimated and include both "completed and uncompleted calls." In an earlier version of the table, FCC SOCC 1968 Table 9, p. 21, ft. 3 states, "Local calls after 1950 include only completed calls. Toll calls include both completed and uncompleted calls for all years." The call volume data in FCC SOCC 1979 and FCC SOCC 1968 appear to be based on the same data used in the call volume data in Historical Statistics (1975) Series R 9-12. The notes to those series indicate that local calls include completed and uncompleted calls, and does not mention any change in figure definition in 1950. Finally, Census (1912), p. 30, suggests that the call volume statistics generally excluded uncompleted calls,. It notes that while some uncompleted calls may have been included, "the number is relatively small and does not seriously affect the comparative value of the statistics."

Studies made presenting traffic data collected about 1973 provide the best additional evidence for estimating total telephone minutes. Data from the studies give estimates of residential household telephone minutes. In each estimate, residential household minutes are scaled by the number of households with phones in 1973 (90% of households, as indicated from Historical Statistics (1975) R 3 and FCC (1999) Table 17.1, where total households is 61,361, interpolated from Statistical Abstract: 1999, No. 1419 p. 873). Bell company filings to the FCC in 1973 indicate that business lines were 38.3% of residential lines. Total minutes of calling on a business line is assumed to equal to minutes of calling on a residential line. Thus total telephone minutes are estimated as residential minutes times 1.383. The table below summarizes estimates based on these studies.

Telephone Traffic Studies and Minutes Estimates, c. 1973					
Source No.	Source Name	Residential Calls/Month	Ave Res. Call Duration	Total Res. Min	Total Res. & Business Min.
1	Brandon (1981)	106	5.8	451	624
2	Garfinkel & Linhart (1980)	125	4.5	414	572
3	Mayer (1977)-1	128	4.3	404	558
4	Mayer (1977)-2	149	5.1	562	777
	Average	127	4.9	457	633

Notes for no. 1: Data from Brandon (1981), Table 8.B.1, 8.B.3, Figure 10.A.3, and Figure 10.A.12. Averages for blacks and whites are weighted by respective 1973 population shares (0.11/0.89). Calculating average local-suburban call duration and comparing to Table 8.B.2 indicates that the call total contains about 10% zero-length (uncompleted) calls.

Notes for no. 2: Data from Garfinkel and Linhart (1980) Fig. 3, p. 17; and Fig. 5, p. 18. These data are for local calls. In 1973, toll calls were 6.7% of local calls by call numbers (FCC (1999) Table 9). The figure for local calls per month is inflated by this factor to get total residential calls/month.

Notes for no. 3: Data from Mayer (1977) p. 227-9. The local call figure has been inflated as for estimate no. 2 above.

Notes for no. 4: Data from Mayer (1977) p. Figs. 5a, 5b. Average figures have been constructed using Census data on income classes. Calls per household per day have been estimated from calls per user per day by multiplying by the average number of persons 10 years old and older per household in 1977 (2.55).

Total calls can also be estimated two other ways. FCC SOCC 1984, Table 8, p. 13, indicates 213 billion calls in 1973. Multiplying this figure by 5 minutes per call gives 1065 billion minutes. This figure is significantly higher than all the estimates in the table above.

Alternatively, the yearly average growth rate of DEMs from 1980 to 1995 (3.8%, calculated from DEMs given in FCC (1999) Table 17-1) can be used to back-project total conversation minutes (one-half total DEMs) for 1973. Doing so gives 668 billion minutes. This figure, which is close to the average total minute figure from the table above, is taken as the best estimate for total telephone conversation minutes in 1973.

Year 1995: The minute figure for 1995 is calculated as one-half of total DEMs for 1995.

Year 1939: Using Bell company ratios of phones to main lines for 1939 and 1973, total phones for 1939 and 1973 are used to estimate total main lines for 1939 and 1973 of 14.7 million and

70.4 million, respectively. These figures imply a main line growth rate of 3.6% per year. Mayer (1977) p.232 notes "the steady growth in telephone usage – at the rate of abut 2 percent per household for some years…." Assuming minute grew 2% per main line per year from 1939 to 1973 implies 5.6% increase in total minutes per year across this period. Back-projecting from 668 billion minutes in 1973 gives 58 billion minutes in 1939.

Alternatively, Willey and Rice (1933) p. 144 report AT&T data indicating that the average time spent in each telephone conversation over "long lines" was about 5 minutes for 1924 to 1929, with little variation per year. *Id.* also cites another AT&T source from 1930 indicating "the average time spent in transcontinental conversations is about six minutes." Average call length generally increases with call distance. Brandon (1977) Table 8.B.2 and Fig. 10.A.11 indicate that local-suburban call duration is about 25% shorter than toll call duration. Reducing the AT&T long-lines duration figure by this amount implies average call duration of 3.7 minutes per call in 1939 (toll calls were only 3% of total calls in 1939, and hence difference between toll and local call duration have a negligible effect on average call duration).

From above, the best estimate of average call duration in 1973 is 5 minutes per call. An increase in average call duration from 3.7 to 5 minutes per call from 1939 to 1973 is consistent with the increase in share of residential lines from 62% to 72% across that period. Business lines tend to have higher call volume but shorter call duration (Garfinkel and Linhart (1980) p. 18).

An average call duration of 7.5 minutes reported in 1909 (see Judson (1909) p. 646) seems, in light of the above data, to be not at all representative. Judson, Chief Engineer of the Independent Telephone Co. in Seattle, was concerned about the large amount of "unprofitable traffic generated by "idle gossip" under flat-rate calling plans. That he was concerned about traffic volume indicates the potential for selection bias: high average calling duration is correlated with his motivation to report his statistics. Moreover, early in the twentieth century non-Bell telephone companies pursued residential subscribers much more aggressively than Bell companies. Thus Judson's sample probably included a much higher fraction of residential subscribers than was representative for the industry as a whole. The median call duration in Judson's sample was between three and six minutes, while the median in a call sample from 1973 was 4.05 minutes (Garfinkel and Linhart (1980) Fig. 5). Judson's sample had 8% of calls longer than 8 minutes, and 16% longer than 15 minutes. The 1973 sample, by contrast, had only about 3% of calls longer than 10 minutes. Thus Judson's high average duration seems to have been created by a small fraction of his subscribers who were making long-duration calls.

The best estimates of total minutes (668 million) and average call duration (5 minutes per call) for 1973 imply that total reported calls in 1973 should be scaled down by a factor of 0.62. Applying this same scaling factor to total calls in 1939 and taking average call duration to be 3.7 minutes implies 78 billion minutes in 1939. Averaging this estimate with the above estimate of 58 billion gives the final estimate of 68 billion minutes in 1939.

Year 1890: The estimate for 1890 involves the most uncertainty. In 1890, service quality was undoubtedly significantly worse than in 1939. Until its patents expired in 1894, Bell Telephone effectively had a monopoly on telephone service. In the late nineteenth century, Bell Telephone primarily sold its service to businesses, and thus most telephone users in 1890, perhaps 90% (Mueller (1997) p. 4), were business users. Awkwardness associated with lack of familiarity with telephone service, worse quality service, a much higher share of business users, most of whom were probably men, all suggest a significantly lower average call duration. A plausible

estimate is 2 minutes per call. That figure implies 1,057 million minutes of telephone calls in 1890.

Table 8

Photo industry revenue: See sources and calculations for Table 5.

Telephone industry revenue: Figures for 1890, 1939, and 1967 are the sum of operating revenue for Bell and Independent companies, from Historical Statistics (1975), Series R-20 and R-35. For 1967, the sum is 9.5% higher than operating revenue of telephone carriers filing annual reports to the FCC, as given in FCC SOCC 1984, Table 8, p. 13. Although the latter figure may better account for inter-company duplications in operating revenue among the Bell companies (see id., Table 5, notes), the former figure has been used for comparability with earlier figures. The 1997 figure is end-user revenue reported in FCC (1998), Table 1.

Table A1

Data from sources referenced in Galbi (2001b) Table 5, except "1350, Yorkshire", which is from Gwynek (n.d.). Years given in the table are estimated average date of birth for the corresponding sample.

Table A2

See notes for Table 2 above. This table adds the sample sizes for the Warwick sample in Table 2. Smith-Bannister (1997) does not provide sample sizes for the England rank data.

Table A3

Data from Galbi (2001c), available online. Names are from marriage records; average age at marriage estimated at 25.

Table A4

See Galbi (2001b), Table 3 and Appendix D.

Tables C1 and C2

The first U.S. census that included detailed occupational data was in 1850. Occupation categories and counts 1850 to 1980 were taken from corresponding census report on detailed occupations. Data for 1990 are from Census (1990), Table 1. Data for 2000 are from Hecker (2001), Table 2.   For discussion of revisions of the Standard Occupational Classification System, see Bureau of Labor Statistics (1999).

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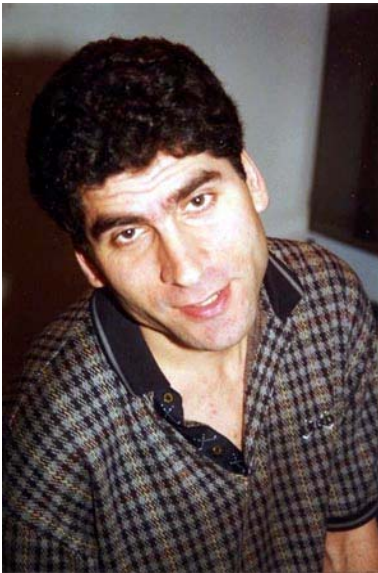
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Appendix A
Historical Popularity of the Name *Mary*

The scholarly literature on names contains some mistakes regarding the historical popularity of the name *Mary*. One authority asserts:

> Mary *is the most popular and enduring of all female Christian names, being the name of the Virgin Mary, mother of Jesus Christ, who has been the subject of a cult from earliest times. Consequently, the name was extremely common among early Christians, several saints among them, and by the Middle Ages was well established in every country in Europe at every level of society. It has been enduringly popular ever since, it popularity having been almost completely undisturbed by the vagaries of fashion that affect other names.* [1]

Another authority states that use of the name *Mary* in England increased slowly from the end of the twelfth century through the next three centuries, but "suffered an eclipse after the Reformation and was seldom used during Elizabeth's reign."[2] These statements contradict the best currently available evidence about the popularity of *Mary* in England.

Mary was not a popular name in England prior to the Reformation. During the Anglo-Saxon period in England (c. 600 to 1066), the name *Mary* was not used. A royal use of the name *Mary* is recorded in Scotland at the end of the eleventh century, and the first recorded use of *Mary* in England dates from the end of the twelfth century.[3] From 1200 to 1350, the share of females named *Mary* was less than 1%. About 1350, *Mary* ranked about twenty-fifth in popularity.[4] The popularity of the most popular name at that time, *Alice,* was about 22%. The popularity of *Mary* rose over the next two centuries, but the name's popularity was probably less than 3% prior to the English Reformation (1535).[5]

The situation in Europe varied considerably. In Paris in 1292-1300, the share of females named *Mary* was 6.7%.[6] *Maria* and *Marina* were the two most popular names in Galicia (on the northwest coast of Spain) during the eighth to the thirteenth centuries.[7] By the fifteenth century, *Maria* and *Marina* accounted

Table A1 **Various English Name Samples** (% females named Mary)		
Birth Year, Location	Percent	Sample Size
1200, Essex	0.9%	1407
1210, South England	0.0%	173
1270, Rutland	0.0%	206
1300, Lincoln	0.6%	1213
1350, Hereford	0.7%	576
1350, Yorkshire	0.2%	1794
1560, Canterbury	7.3%	661
1560 Gloucester	3.2%	3745
1620, Yorkshire	16.7%	342
1670, Yorkshire	20.6%	228
1720, Yorkshire	25.7%	413
1770, Yorkshire	22.8%	381
1625, England	17.0%	n.a.
1675, England	20.5%	n.a.
1725, England	20.0%	n.a.
1775, England	24.0%	n.a.

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[1] Hanks and Hodges (1990) p. 228.
[2] Withycombe (1977) p. 211.
[3] Id.
[4] For the 1350 Hereford and Yorkshire samples in Table A1 *infra*, Mary ranked 21 and 28, respectively.
[5] See Tables A1-A3, *infra*.
[6] Michaëlsson (1927) Table 3, p. 62.
[7] Boullón and Tato (1999) p. 40.

for 8% and 6%, respectively, of female names in Galicia.[1] In the area now northwestern Ukraine, *Maria* accounted for 10.2% of female give names in 1484.[2] In Hungary, Italy, southern France, and other parts of Spain, use of forms of *Mary* may have been rare up to the end of the sixteenth century.[3]

The popularity of *Mary* increased in England after the start of the Reformation. The name *Mary* was more popular at the end of Elizabeth's rein (1603) than at the beginning of the sixteenth century. *Mary* increased in popularity during Queen Mary I's reign (1553-1558), fell during the early part of Elizabeth I's rule, but then rose again in the later part of it. The popularity of *Mary* continued to increase through to the end of the eighteenth century.   At the end of the eighteenth century, the popularity of Mary in England was about 24%.[4]

Table A2 **Trends in Location-Consistent Samples** (% females named Mary)						
England			Warwick County, England			
Birth Years	Rank	Share	Birth Years	Rank	Share	Sample Size
			1381-1405	21	0.3%	585
			1465-1509	13	0.9%	802
			1513-1525	10	2.8%	109
1538-1549	7	4%	1539-1552	7	6.7%	224
1550-1559	4	10%	1553-1558	3	12.7%	63
1560-1579	7	4%	1559-1582	8	4.1%	991
1580-1589	4	10%	1583-1603	6	8.5%	1011
1590-1599	3	13%				
1600-1629	2	15%	1604-1624	3	12.9%	1173
1630-1649	2	15%	1625-1648	2	17.6%	1429
1650-1659	1	15%	1649-1658	1	22.8%	241

After the Reformation, the popularity of *Mary* also increased greatly in predominately Catholic European countries. From the sixteenth to the seventeenth century in Hungary, the popularity of the name *Mária* increased from less than 1.6% to 6.2%.[5] In Vixen, France, the number of females with a given name including the name *Marie* rose from 15.8% (years 1590-99) to 68.4% (years 1740-49).[6] The increase in use of the name *Marie* roughly coincided with increasing use of two first names, one of which was most often *Marie*. Beginning in the sixteenth century in Italy, and spreading to other southern European countries in the eighteenth and early nineteenth centuries, some men also began including the name *Mary* in a multi-name given name.[7]

The popularity of *Mary* in England fell after the Industrial Revolution. Part of this fall went with a strong general trend toward name personalization,

Table A3 **Northumberland and Cumbria Counties in Northern England** (% females named Mary)			
Est. Birth Years	Rank	Share	Sample Size
1509-1530	10	1.8%	271
1540-1570	10	2.1%	3581
1571-1600	8	4.2%	5654
1601-1630	6	7.5%	5076
1631-1660	5	10.8%	4657
1661-1690	3	14.4%	4717
1691-1720	1	17.1%	3957
1721-1750	2	17.3%	3357
1751-1780	1	18.2%	4098
1781-1810	1	19.6%	3569

[1] Id. p. 25.
[2] Mitterauer (1993) p. 289.
[3] Wilson (1998) pp. 188, 192.
[4] Tables A1 and A4. As Table A3 indicates, the popularity in Northumberland and Cumbria was about 20%.
[5] Kálmán (1978) p. 50.
[6] Dupâquier (1980).
[7] Wilson (1998) p. 192.

Table A4 England and Wales Census Data (% females named Mary)	
Birth Year	Share
1800	23.9%
1810	22.2%
1820	20.4%
1830	19.6%
1840	18.7%
1850	18.0%
1860	16.3%
1870	13.3%
1880	10.6%
1900	5.1%
1925	6.7%
1944	4.2%
1954	3.6%
1964	1.8%
1974	1.2%
1984	0.7%
1994	0.6%

which reduced sharply the popularity of the most popular names.[1] By 1994, the most popular female name, *Rebecca*, accounted for just 3.7% of female names. *Mary*, however, also fell in relative popularity. *Mary* was the most popular female name in England from 1800 to 1880, and was also the most popular female name again in 1925. But by 1994, the popularity rank of *Mary* had fallen to 38 and its popularity to 0.6%. In mundane activities of normal life, the name *Mary* was probably spoken about forty times less often at the end of the twentieth century than at the end of the eighteenth.[2]

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[1] Galbi (2001b).

[2] That is an economic measure of a reduction in shared symbolic experience associated with the name *Mary*. See Galbi (2001b).

Appendix B
Adjusting Name Popularity Statistics for Family Size

For comparing and interpreting the popularity of highly popular names, family size can be important. Consider, for example, the popularity of the name Mary. Calculating the share of females named Mary among all females ignores that some females might not have been at risk, i.e. eligible, to be called Mary.   In particular, giving living sisters the same name could cause confusion in identifying them. If parents as a rule do not repeat names among living siblings, then the number of females who were eligible to be named Mary depends on the family size distribution and the distribution of the name Mary relative to birth order. In a naming equilibrium, both dynastic and popularity considerations favor Mary having a higher probability of being represented among older daughters. When Mary is a highly popular name, large average family size can significantly affect the share of females eligible to be named Mary.

A rough adjustment for family size can be calculated using these parameters:

f = the share (fraction of females) named Mary
s = the probability of a female child surviving to adulthood
z = share of births to unmarried women
b = average female births per married woman
n = the share of females named Mary who are the first-born daughter (the share of females named Mary who are the second-born daughter will be assumed to be $1-n$).

A simple calculation gives the proportion of women, with at least one daughter, who have a daughter name Mary. In a steady-state name-share equilibrium, the share of women named Mary is f. Now consider the share of women who were not eligible to be named Mary. Assume that all females born to unmarried women have no sisters. Let N be the number of women. A woman has on average *(1-z)s(b-1)* sisters. Then the *nfN* first-born women named Mary have *nfN(1-z)s(b-1)* sisters who were ineligible to be called Mary. The *(1-n)fN* second-born females named Mary have *(1-n)fN(1-z)s(b-2)* sisters who were ineligible to be called Mary. The total number of adult females who were ineligible to be named Mary is thus $i = fN(1-z)s(n(b-1)+(1-n)(b-2))$. The share of women named Mary, among those women who were eligible to be named Mary, is *v=f/(1-i)*. In a population naming equilibrium with no repeated names for living daughters, this statistic *v* estimates the proportion of women, with at least one daughter, who have a daughter named Mary.

The parameterization and result for mid-eighteenth century England are:

f = 0.24 [see Appendix A, *infra.*]
s = 0.58 [Livi-Bacci (2000) Table 5.1, p. 94-5]
b = 3.3 [calc. from id.]
z = 0.03 [Laslett, Costerveen, and Smith (1980) p. 14]
n = 0.5 [conjecture]

These figures imply v = 0.32.

Appendix C
Copyright and Creativity: Photographers and Authors

Voluminous discourse about authorship emerged in the eighteenth century as part of efforts to support writing as an occupation. Writers struggled to establish their personal genius, autonomous civic conscience, and economic viability while at the same time distancing themselves from the vulgar demands of public opinion and ordinary commerce.[1] This work, known in late twentieth century legal and literary scholarship as romantic authorship, was rather attractive to writers. By 1794, sixty works discussing authorship, written in German in the previous twenty years, were reviewed in a book entitled *Toward a Clarification of the Property and Property Rights of Writers and Publishers and of the Mutual Rights and Obligations. With Four Appendices. Including a Critical Inventory of All Separate Publications and of Essays in Periodical and Other Works in German Which Concern Matters of the Book as Such and Especially Reprinting.*[2] According to a leading contemporary scholar, in the eighteenth century:

> *writers set about redefining the nature of writing. Their reflections on this subject are what, by and large, gave the concept of authorship its modern form.*[3]

The resulting romantic concept of authorship still strongly shapes many authors' self-understanding of the work they do.[4]

Writing about authorship, not surprisingly, also encompassed writing laws. In England in 1710, the Statute of Anne established for authors and their assignees an exclusive, fourteen-year right to print books and other writings.[5] The statute's stated purpose was to promote the occupation of author – to prevent the economic harm that unauthorized printing was causing to authors and their families, and to encourage writing of useful books. In the U.S. in the 1780s, twelve out of the thirteen colonies passed copyright laws literally directed to securing author's rights.[6] The U.S. Constitution, written in 1787, included a clause empowering congress "[t]o promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries."[7] The first U.S. Congress, meeting in 1790, promptly wrote and passed a federal copyright act.[8] In France, the opportunity to receive

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[1] Over the past two decades scholars have done much work on the history of authorship and copyright. See, e.g. Woodmansee (1984), Boyle (1988), Ginsburg (1990), Jaszi (1991), Hesse (1991), Saunders (1992), Rose (1993), Woodmansee and Jaszi (1994), and Rice (1997). This literature has largely failed to explore over time how many persons actually made their living as authors.

[2] The title is from Ernst Martin Gräff's book, cited in Woodmansee (1984) p. 440. As a follow-up to relatively important work on footnotes, scholars not interested in pressing contemporary problems in communications policy might consider the history of titles, the style of which has changed significantly over time. For some preliminary research, see Darnton (1990) pp. 98-103.

[3] Woodmansee (1984) p. 426.

[4] Cf. Hepzibah's thoughts and actions in Hawthorne (1851) pp. 31-49, 241.

[5] 8 Anne c. 19. Facsimile and transcription available at http://www.copyrighthistory.com/anne.html

[6] Patterson (1968) pp. 181-92.

[7] Art I., § 8, cl. 8. On Aug. 18, 1787, James Madison and Charles Pinckney each submitted to the Constitutional Convention a list of additional, enumerated federal powers. Madison's list included, "To secure to literary authors their copyright for limited time." Pinckney's list included, "To secure to authors exclusive rights for a limited time." See Patterson (1968) pp. 192-3. The distinction between "literary authors" and "authors" is significant. In 1810, the French government established a separate regime of prepublication review for publications of twenty or fewer pages. More generally, early French literary law fostered the professionalization of writing and the transformation of the republic of letters into a republic of books. See Hesse (1991) pp. 245-6.

[8] 1 Stat. 124.

an exclusive right to print a work was extended to authors in a new royal regulation issued in 1777.[1] Four years after the French Revolution swept away royal power, the French National Convention in 1794 passed a law protecting "property in the production of genius." The law granted to authors, heirs, and assignees exclusive publication rights for the lifetime of the author plus ten years.[2] All these laws were passed before industrial revolutions dramatically changed the nature of work.

Despite great changes in typical daily work since the eighteenth century, creativity is not usually associated with ordinary daily work. If labor (workers) and capital (machines) are considered to be substitutable inputs in a production process, human work is understood to be like that of machines. Machines might then be described as dead labor; that is, the essential value extracted from workers and re-embodied so that it can continue to work and never complain. In high-income societies today, the distribution of jobs has shifted greatly toward services; relationships among women, men, and children are much different; and information and communication technologies are much more powerful. Yet the eighteenth-century understanding of creativity remains. Creativity is some mysterious blessing from somewhere upon some persons, at some times. Creativity occurs in a realm separate from the work that keeps the lights on, the water running, the lawn neat and green, and puts food in the bowl for the cat and on the table for the children. Promoting creativity depends on a narrow legal field of reproductive rights historically centered on copyright.

The occupational history of photographers and authors in the U.S. suggests a much different understanding of creativity.[3] In 1850, only 82 males claimed the occupation of author in the first occupational census of the U.S.[4] In 1900, self-professed photographers were about ten times as numerous as self-professed authors. Being a photographer was associated with manufacturing and depended only on mastering technical skills and making a living. Being an author, in contrast, was an elite status associated with science and literature. Across the twentieth century, the number of writers and authors grew much more rapidly than the number of photographers.[5] The relative success of writers and authors in creating jobs seems to have depended not on differences in copyright or possibilities for self-production, but on greater occupational innovation. Creativity in organizing daily work is an important form of creativity.

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[1] Hesse (1991) p. 12.

[2] Id. pp. 118-21. As id. emphasizes, the law also abolished existing royal privileges for printing works and gave all citizens the right to print works formerly under royal privilege.

[3] The scholarly literature on communications tends to divide by sensory mode or media. This division obscures important aspects of communication. See main text, *infra*. Hawthorne (1851) recognizes commonalities in the occupations of writer and photographer (daguerreotypists) by having Holgrave both write stories and make daguerreotypes.

[4] In 1853, perhaps 420 new books, not reprinted or translated from foreign books, were published in the U.S. Tebbel (1972) v. II, p. 23, cf. id. v. I, p. 222. Reconciling this figure with the census figure for authors requires more scholarly work. Woodmansee (1984) p. 443, ft. 17 cites a "contemporary catalog of German writers" that estimated the number of writers in Germany in 1800 as 10,650. Id p. 431 also notes, "The professional writer emerged considerably later in Germany than in England and France." Reprinting of foreign works was prevalent in the U.S. in nineteenth century. See McGill (2003). About 1850, about 40% of new titles printed in the U.S. were reprintings of foreign works. See Tebbel (1972) v. II, p. 23; id. v. I, pp 221-2; cf. McGill (2003) p. 279, n. 2. Reprinting, however, cannot account for the huge difference in estimates of the number of authors in the U.S. and Germany. Rather than focusing on a few prominent authors, the history of authorship might focus more comprehensively on the number, background, and scope of activities of real persons involved in writing books.

[5] The number of authors (and closely related occupations) grew much faster than the overall population. Cf. Nunberg (1996) pp. 23-4.

I. Bureaucratic Facts

	Table C1		
	Classification and Number of Photographers and Related Jobs		
Year	Classifications in Hierarchy	Occupation	Number
1850	none -- flat list	Daguerreotypists	938
1860	none -- flat list	Daguerreotypists	2,650
	none -- flat list	Photographers	504
1870	Manufactures, Mechanical and Mining Industries	Daguerreotypists and photographers	7,558
1880	Manufacturing, mechanical, and mining industries	Photographers	9,990
1890	Manufacturing and mechanical industries	Photographers	20,040
1900	Manufacturing and mechanical pursuits / miscellaneous industries	Photographers	26,941
1910	Professional service	Photographers	31,775
1920	Professional service	Photographers	34,259
1930	Professional service	Photographers	39,529
1940	Professional and Semiprofessional Workers / Semiprofessional Workers / Other semiprofessional workers	Photographers	37,641
1950	Professional, Technical	Photographers	54,734
1960	Professional, Technical, and Kindred Workers	Photographers	45,393
1970	Professional, Technical, and Kindred Workers / Writers, Artists and Entertainers	Photographers	65,960
1980	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Photographers	94,762
1990	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Photographers	143,520
2000	Arts, Design, Entertainment, Sports, and Media Occupations /Media and Communication Equipment Workers /	Photographers	131,000
	Arts, Design, Entertainment, Sports, and Media Occupations /Media and Communication Equipment Workers /	Television, video, and motion picture camera operators and editors	43,000

Early commercial practice of photography rapidly and enduringly established "photographers" as an occupational category in government statistics. In 1850, the first U.S. occupational census included "daguerreotypists" as an occupational category. "Daguerreotypists" describes persons using the first widely known photographic process. This process was primarily used in the commercial provision of personal portraits. Other photographic processes developed rapidly. The evolution of nomenclature from "daguerreotypists" to the more general term "photographers" in censuses from 1860 to 1880 reflects this development. All subsequent censuses through to the 2000 census include the occupational category "photographers." The 2000 census also included a new category, "Television, video, and motion picture camera operators and editors." The introduction of this new category is an unusual development. The reduction in the technical complexity of making photographs, the development of new image-making technology,

and the emergence of new fields, such as product design, advertising, and public relations, has not led to any other new occupational categories classified closely with photographers. What photographers do has been commonly and distinctively understood since the nineteenth century, and it has changed little since then.

The position of photographers in the job classification schema has, however, changed significantly from 1850 to 2000. Through the 1900 census, photographers were classified under manufacturing and mechanical industries. In 1910, photographers moved into the class "professional service." In 1940, a sub-heading "semiprofessional workers" was established, and photographers were placed under it. In 1950, that subheading was eliminated, and the higher level heading was changed from "Professional and semiprofessional workers" to "Professional, technical." These classification changes suggest struggles over the boundary of "professional." By 1980, photographers were being placed under a subheading "writers, artists, entertainers, and athletes." In 2000 "photographers" came under the subheading "media and communication *equipment* workers" [italics added]. Thus in the 2000 occupational classification, and in 1900 and earlier ones, photographers have been associated with machine workers.

Over the past hundred and fifty years, authors have become much less distinguished in occupational category and classification. Authors had their own occupational category in 1850 and 1860, while from 1870 to 1900, authors were variously categorized with lecturers, literary persons, and scientists. These elite groups have high barriers to entry. By 1980, authors had been placed within a higher-level category, "Writers, Artists, Entertainers, and Athletes." "Technical writers," a category with a large number of workers, was also introduced in 1980 as a category with the same classification as "authors." The 2000 census included this category, but changed the category "authors" to "writers and authors." These changes indicate innovation and diversification in jobs associated with authors.

Table C2			
Classification and Number of Authors and Related Jobs			
Year	Classifications in Hierarchy	Occupation	Number
1850	none -- flat list	Authors	82
	none -- flat list	Editors	1,372
	none -- flat list	Reporters	138
1860	none -- flat list	Authors	216
	none -- flat list	Editors	2,994
	none -- flat list	Reporters	411
1870	Professional and personal services	Authors and lecturers	458
	Professional and personal services	Journalists	5,286
1880	Professional and personal services	Authors, lecturers, and literary persons	1,131
	Professional and personal services	Journalists	12,308
1890	Professional service	Authors and literary and scientific persons	6,714
	Professional service	Journalists	21,849
1900	Professional service / Literary and scientific persons	Authors and scientists	5,817
	Professional service	Journalists	30,038
1910	Professional service / Authors, editors, and reporters	Authors	4,368
	Professional service / Authors, editors, and reporters	Editors and reporters	34,382

Year	Category	Occupation	Count
1920	Professional service / Authors, editors, and reporters	Authors	6,668
	Professional service / Authors, editors, and reporters	Editors and reporters	34,197
1930	Professional service / Authors, editors, and reporters	Authors	12,449
	Professional service / Authors, editors, and reporters	Editors and reporters	51,844
1940	Professional and Semiprofessional Workers / Professional Workers / Authors, editors, and reporters	Authors	14,126
	Professional and Semiprofessional Workers / Professional Workers	Editors and reporters	63,493
1950	Professional, Technical	Authors	16,184
	Professional, Technical	Editors and reporters	91,472
1960	Professional, Technical, and Kindred Workers	Authors	20,734
	Professional, Technical, and Kindred Workers	Editors and reporters	63,279
1970	Professional, Technical, and Kindred Workers / Writers, Artists and Entertainers	Authors	26,004
	Professional, Technical, and Kindred Workers / Writers, Artists and Entertainers	Editors and reporters	152,984
1980	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Authors	45,748
	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Editors and reporters	210,831
	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Technical writers	49,596
1990	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Authors	106,730
	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Editors and reporters	266,543
	Managerial and professional specialty occupations / Professional speciality occupations / Writers, Artists, Entertainers, and Athletes	Technical writers	74,292
2000	Arts, Design, Entertainment, Sports, and Media Occupations / Media and Communications Workers / Writers and Editors	Writers and authors	126,000
	Arts, Design, Entertainment, Sports, and Media Occupations / Media and Communications Workers	News analysts, reporters and correspondents	78,000
	Arts, Design, Entertainment, Sports, and Media Occupations / Media and Communications Workers / Writers and Editors	Technical writers	57,000
	Arts, Design, Entertainment, Sports, and Media Occupations / Media and Communications Workers / Writers and Editors	Editors	122,000

In occupational categorization, reporters and editors have been consistently distinguished from authors and writers, but not from each other. In 1850 and 1860, reporters and editors were separate categories, but from 1870 to 1990 they were grouped in a single category as "journalists" or "editors and reporters." In 2000, reporters and editors were again placed in two different categories. Originality provides one criterion for attempting to distinguish among authors, writers, reporters, and editors, while authority provides another, different, one. Nonetheless, editors

sometimes effectively act as writers, and reporters as authors. Moreover, some authors attempt to act as their own editors, but might be regarded as not succeeding in doing so. In any case, authors, writers, reporters, and editors have been consistently grouped together in the next higher level of occupational classification.

II. Law and Economics

While photographers have always been separated from authors in occupational classification, photographers have been recognized as authors under copyright law. In the early 1860s, photographically reproduced photographic portraits of famous persons became an important item of commerce.[1] The U.S. Congress passed a copyright statute for photographers in 1865.[2] In *Burrow-Giles Lithographic Co. v. Sarony* (1884), the U.S. Supreme Court confirmed that Congress acted within the constitutional scope of federal authority in granting copyrights to photographers, understood as authors:

> *the constitution is broad enough to cover an act authorizing copyright of photographs, so far as they are representatives of original intellectual conceptions of the author. ... These findings, we think, show this photograph* ["Oscar Wilde, No. 18"] *to be an original work of art, the product of plaintiff's intellectual invention of which plaintiff is the author, and of a class of inventions for which the constitution intended that congress should secure to him the exclusive right to use, publish, and sell...*[3]

The plaintiff in this case was Napoleon Sarony, who had been commercially and culturally prominent as a photographer for at least two decades.[4] Sarony specialized in celebrity photographs. From his studio on Broadway, he made photographs of most of the stars of New York theatre, including Sarah Barnhart, whom he paid $1500 for the opportunity.[5] Sarony himself did not generally operate the camera; he directed his efforts toward arranging the subject and evoking from her or him the expression that he sought. He was an author of photographs in this way, and also as the owner of the studio that produced photographs.[6]

   Burrow-Giles did not decide that all photographers were authors. In 1884, when *Burrow-Giles* was decided, persons describing their occupation as photographer were about ten times more numerous than persons describing their occupation as author. The situation and activities of most photographers were much different from those of Napoleon Sarony. Most photographers produced, on a commercial basis, conventional photographic portraits of ordinary persons that evoked among family and friends a sense of presence of the photographed persons. *Burrow-Giles* noted:

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[1] These objects were known as "cartes de visite." See Leggat (1999) and Stratford Hall Plantation (2002).

[2] Copyright Act, ch. 126, 13 Stat. 540-41 (1865).

[3] 111 U.S. 53, 59, 60.

[4] In the last third of the nineteenth century, Sarony was the best-known portrait photographer in the U.S. In 1897, a photographic journal lauded him as "the father of artistic photography in America." Sarony, "an inveterate joiner and a gadabout in New York City's literary and artistic circles," often wore a tasseled red fez. The reception room of his studio featured a stuffed crocodile hanging from the ceiling. Bassham (1978) pp. 4-6, 13, 16-7.

[5] Id. Sarony paid Lillie Langtry, called in her time "the world's most beautiful woman," $5000 for the exclusive right to make and sell portraits of her. For one such portrait, see id. p. 73. I'm not impressed. I think that many persons have known women more beautiful than this image.

[6] Bassham (1978) pp. 14-5.

it is said that…a photograph is the mere mechanical reproduction of the physical features or outlines of some object, animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible reproduction in shape of a picture. ... This may be true in regard to the ordinary production of a photograph, and that in such a case copyright is no protection. On the question as thus stated we decide nothing.[1]

The court did not include in its officially published opinion a copy of Sarony's photograph. Including a copy probably would have advanced significantly appreciation for the opinion's legal distinction, at the cost of raising practical challenges and additional, important legal questions.[2] Deciding little in a way that limited communication of the decision was a pragmatic judicial strategy. The status of author, then and now, had little practical importance to most photographers' businesses and most persons' interest in photographs.

Questions of authorship can, however, implicate fundamental human concerns. In *Bleistein v. Donaldson Lithographing Co.* (1903), a newly elevated Supreme Court justice included these sentences in the Court's decision:

Others are free to copy the original. They are not free to copy the copy. The copy is the personal reaction of an individual upon nature. Personality always contains something unique. It expresses its singularity even in handwriting, and a very modest grade of art has in it something irreducible, which is one man's alone. That something he may copyright unless there is a restriction in the words of the act.[3]

These sentences, forceful and impressive, proclaim the significance of an author in every persons' every act. Most persons, regardless of profession, would probably desire the elite status of author, under copyright or more generally. However, how all the effects of persons remain separate from nature and originals, so that a copy of a copy does not contain something personal and

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[1] 111 U.S. 53, 58-9.

[2] Id. at 55 mentions "the picture in suit, Exhibit A," but the official report of the case does not reproduce that picture. Photolithography was just becoming practical late in the nineteenth century, and photographs were not commonly reproduced in magazines until the twentieth century. If the photograph could have been printed in court reporters, doing so would have required advancing doctrines of use context as a limit on copyright. Legal disputes concerning the printing of judicial opinions have been important in shaping U.S. copyright law. See, e.g. Wheaton v. Peters, 33 U.S. 591 (1834). For a pioneering and endearingly unsophisticated discussion of U.S. judges' use of non-verbal material in printed opinions, see Dellinger (1997).

[3] 188 U.S. 239, 249-50 (Feb. 2, 1903). Justice Oliver Wendell Holmes, who took his judicial oath for the Supreme Court on Dec. 8, 1902, delivered the opinion of the court. It was the second Supreme Court opinion that he wrote.

unique, "which is one man's alone," is unclear.[1] Moreover, it is clearly incorrect that copyright exists "unless there is a restriction in the words of the act." In the U.S., legal recognition of copyright depends on statutory provision of it.

The above sentences from *Bleistein* are probably best understood as invoking general appreciation for human creativity in a case that concerned posters advertising a circus. The original defendant described the circus advertisements as "tawdry pictures"[2] His counsel objected that "one, the Ballet, …is an immoral picture," and cited a case that invalidated copyright to a song because it used the word "hottest" in a way judged to be "indelicate and vulgar."[3] Abstracting from the vulgarities of particular images, the Court's decision argued that every person is special, a unique individual. The effects of every person are necessarily rare, valuable, and worthy of protection. In effect, every person essentially has the elite status of author.

That every person is an author, even just in ordinary work and family life, has been subjected to withering critical attack since at least the late nineteenth century. In a personal letter in 1909, a prominent U.S. public intellectual wrote:

> *[Henry James], like his brother and the parsons, attaches a kind of transcendental value to personality; whereas my bet is that we have not the kind of cosmic importance that the parsons and philosophers teach. I doubt if a shudder would go through the spheres if the whole ant heap were kerosened. Of course, for man, man is the most important theme.... Man of course has*

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[1] The phrase "the personal reaction of an individual upon nature" might mean a person's reaction to nature, where that reaction might be fixed only in some realm separate from nature. Alternatively, "the personal reaction of an individual upon nature" might mean a person acting upon nature so as to augment it in a way uniquely attributable to that particular person. Neither interpretation seems consistent with the modern scientific view that human beings are part of created nature and continually transform the natural world. For discussion of related issues and interesting French case law, see Edelman (1994).

[2] 188 U.S. 241.

[3] Id. at 240, 247-48, citing Broder v. Zeno Mauvais Music Co. (1898), 88 F. 74. Broder v. Zeno concerned rights to a song that included the phrase "She's the hottest thing you ever seen." The Circuit Court judge's opinion noted: "I am of the opinion that the word 'hottest,' as used in the chorus of song 'Dora Dean,' has an indelicate and vulgar meaning, and that for that reason the song cannot be protected by copyright." Id. at 79. Considerations of immorality became relevant to copyright from early nineteenth-century English common law. See Wilkinson (1978). Neither the opinion nor the dissent in *Broder* makes reference to this issue, but it may well have been a significant judicial concern at that time. Concerns about indelicate, vulgar, or immoral material led in U.S. case law to a definition of obscene. However, obscenity is probably no longer valid legal grounds for defense against copyright infringement. See Mitchell Brothers Film Group v. Cinema Adult Theatre, 604 F.2d 852 (5'th Circ., 1979) and Nimmer on Copyright § 2.17.   Nonetheless, the importance of morality to law and policy remains. For example, indecency in radio and television programming is a major concern of at least one current FCC commissioner. Indecent programming includes obscene programming as well as other types of programming that offend some persons. Copps (2003), p. 7, notes, "Compelling arguments have been made that excessive violence is every bit as indecent, profane and obscene as anything else that's broadcast."

the significance of fact, but so has a grain of sand. I think the attitude of being a little god, even if the great one has vanished, is the sin against the Holy Ghost.[1]

This forceful and impressive language figures human beings as ants and grains of sand, inter-changeable and uncountable. Personality is merely vanity – man who wants to believe that she is the most important theme. As for belief that persons have a unique creative power that is an ir-reducible part of their being, that is mocked with cutting irony as a "sin against the Holy Ghost" in a world in which clear thought and unsentimental rationality has dispelled God. A dominant tendency in the twentieth century has been to assert that human persons are more like ants than like little gods.[2] That everyone under copyright law is an author, a little god, solely by law and without the need for any distinctive acts, can be understood as legal consolation for this intellec-tual development.[3]

The business history of writers and photographers offers a different perspective on authors and values. Photographers' business model was much different from that of writer-authors. Photographers saw directly their end-customers and transacted directly with them Writers, in contrast, had to make sense of many different readers. Writers confronted the risk that editors and printers would mangle the writer's work, and that publishers would capture almost all the monetary value of books, journals, magazines, and newspapers. In addition, photographers pre-dominately generated revenue from products custom-produced to evoke a specific sense of pres-ence. Writers generally produced a single product that readers customized in interpretation.

In occupational self-profession in the nineteenth century, photographers were not only much more numerous than writer-authors, photographers also undoubtedly earned much more from their work. A person with little education and low social status could make a large amount of money as a photographer.[4] In contrast, being an author has long been regarded as an unprofit-able profession; the "Calamities of Authors," like the death of God, long proclaimed.[5] A New York journal declared in 1823:

no encouragement whatsoever is given to the unfortunate author. The votary of the Muses, the instructor and improver of mankind, is permitted to saunter around the streets with his elbows peeping out of a more than thread-bare coat.[6]

Without relying on their status as authors under copyright law, in the nineteenth century photog-raphers created a much more profitable business model than writer-authors.

III. Making a Living Creatively

Creating new patterns of valued activity is an important aspect of creativity in work. In the U.S. in 1860, self-professed daguerreotypists and photographers were fifteen times as numerous as authors, and the former had much better earning opportunities than the latter. In 2000, photogra-

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[1] Personal letter from Oliver Wendell Holmes to Lewis Einstein, Aug. 19, 1909, printed in part in Posner (1992) pp. xxv-vi.

[2] For some outstanding and highly influential scholarly work on ants and other insects, see Wilson (1971), Hölldo-bler and Wilson (1994), and Eisner (2003).

[3] Distinctive acts necessary for legal recognition as an author of work under copyright, such as affixing a copyright notice in publication, were greatly lessened in 1978 and then eliminated in 1989.

[4] E.g. Bear (1873) Chap. 7. See also the description of production and pricing in Plumbe's National Gallery c. 1840 in Photographer (1896),

[5] Rice (1997) p. 94.

[6] Id., quoting the New York *Minerva*.

phers and "writers and authors" were about equally numerous, [1] and photographers' straight-time gross annual pay was only 58% that of writers and authors.[2] Growth in self-production of photographs contributed to the decline in the fortune of photographers. But many persons have long been able to self-produce writing.[3] Promoting progress in science and useful arts depends not just on copyright law and the economics of self-production, but also on recognizing and encouraging workers' creativity across a wide range of ordinary jobs.

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[1] Including "technical writers" with "writers and authors" would tip the balance away from photographers by about 50%. See Tables C1 and C2, above.
[2] Bureau of Labor Statistics (2002) Table 1.
[3] Tools such as word processors, the Internet, and blogs have further increased opportunities for self-production of writing. The effect of these technologies will depend greatly on the adaptability of organizations and jobs.