Forum: Fifty years since Trewartha: The Past, Present, and Future of Population Geography

Introduction: The Trewartha Challenge

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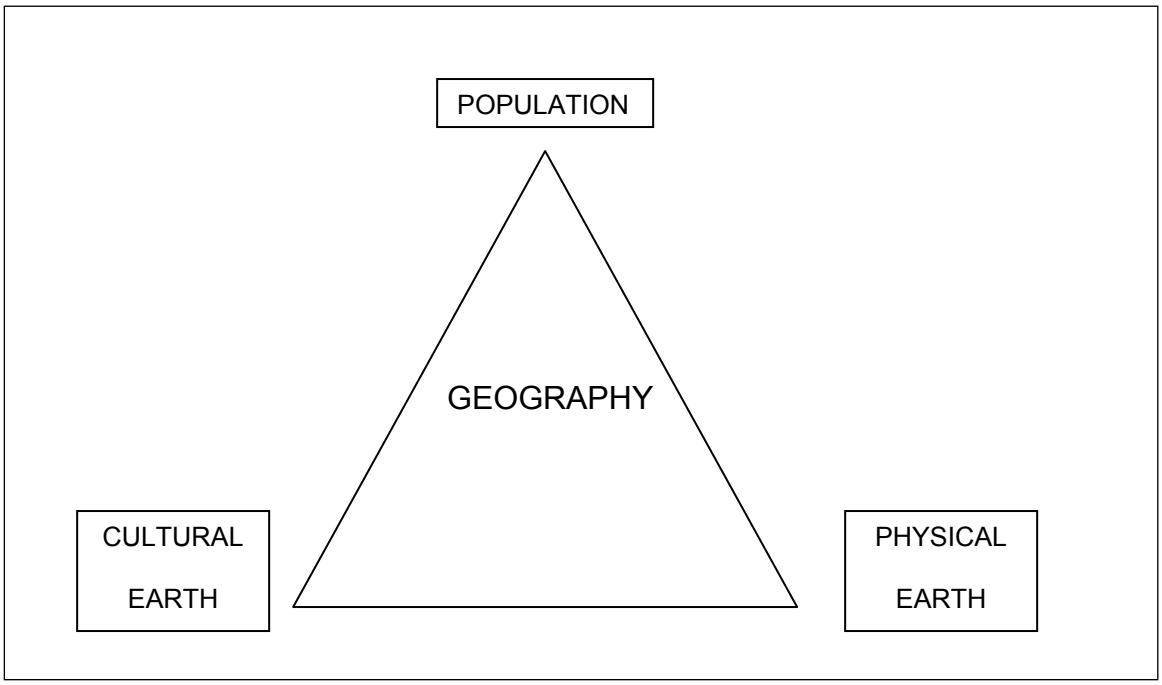
In 1953, Glenn Trewartha of the University of Wisconsin delivered the Presidential address at the Association of American Geographers (AAG) annual meeting in Cleveland, Ohio. The title of his address was "A Case for Population Geography," and in it he argued that the study of population, long neglected by the discipline, deserved a more prominent position in geography's agenda (Trewartha 1953).

According to Trewartha, the neglect of population geography was a consequence of the routine division of geography into physical and cultural geography. This dualism, he felt, ignored the role of "man, the creator and originator of the cultural landscape, as well as the beneficiary of his own production" (1953: 81). Trewartha proposed, instead a three-fold organization of geography into (i) population; (ii) the natural earth; and (iii) the cultural earth. He depicted the three subareas as the corners of a triangle with population at the apex (Figure 1) and argued that the study of population was "the pivotal element in geography, and the one around which all the others are oriented" (Trewartha 1953: 96). Trewartha's 1953 address, therefore, came to be widely regarded as a "call to arms" for geographers interested in population-related issues, and in the years following, population geography emerged as a distinct systematic specialty within the discipline.

This Forum section brings together the remarks of five accomplished population geographers at different points in their careers. It is born out of a Plenary Session of the Population Specialty Group that I organized at the 2003 AAG meetings in New Orleans to mark the 50th anniversary of Trewartha's address. The objective of the Forum is neither to provide a "state of the art" report on population geography, nor to outline a specific research agenda for the future. Rather, it is intended to provide reflections on the growth and maturing of this subfield over the past 50 years, to examine where we are today in the context of Trewartha's call to population geographers and, to provide us with renewed challenges as we move into the next 50 years of population geography.

Figure 1. Trewartha's Conceptulation of the Place of Population in Geography



What Did He Know, And When Did He Know It? Putting Glenn Trewartha's Call for Population Geography into Historical Perspective

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At first glance, it seems improbable that Glenn Trewartha was the geographer who wanted to put population on the map of geographic analysis. As a physical geographer and climatologist, he was not an obvious candidate for that job, as he himself acknowledged. Yet here we are giving serious consideration to the important contributions that he made to the field of population geography, especially his clarion call in his 1953 Presidential Address to the Association of American Geographers. It turns out that he was, in fact, unusually sensitive to the role that humans play in shaping our perception and study of the physical world, and it was that sensitivity that opened his eyes to the importance of population-environmental interactions taking place in the world.

We have all played with the old question: "If a tree falls in the forest and no one is there to hear it, is there still a noise?" My slightly oblique answer to this question has typically been that it doesn't matter--the physical world is irrelevant to humans if we are not a part of it in some way or another. An earthquake, for example, is a natural event. It only becomes defined as a hazard or a disaster when humans are affected by it. Trewartha's insight, which is essentially the same, was that "…fundamentally geography is anthropocentric and...numbers, densities, and qualities of the population provide the essential background for all geography. *Population is the point of reference from which all the other elements are observed and from which they all, singly and collectively, derive significance and meaning. It is population which furnishes the focus"*

(Trewartha 1953:83, emphasis in original). Population thus provides the starting place for all of geographic thought because the physical world is largely of interest to us to the extent that humans interact with it. This is most obvious when we talk about human society, but it is no less true when dealing with the natural environment.

It could readily be argued, then, that Trewartha was NOT directly calling for the creation of a subdiscipline within Geography called "population geography." Rather, I think he had a larger vision and was calling for a fundamentally different way for all geographers, and especially physical geographers, to think about the entire discipline:

> Geography is a unitary science. Its single focus is its concern with the areas which comprise the earth's surface and no convenient organizational subdivision should be permitted to destroy this basic unity. I do believe, however, that a rigidity of thinking on the part of geographers which has caused them to classify all earth phenomena as either physical or cultural, results in the human animal, which fits logically into neither category, being considered something of an outsider and a misfit…Thus, the utlizer of the natural resources, and at the same time the creator of the cultural earth, tends to be neglected (Trewartha 1953: 79-80).

In the current parlance, he was asking geographers to think outside the box, to relate everything in the world back to the humans for whom the physical and social world is consequential. It is easy to believe that climate, for example, is important enough to be studied in its own right, regardless of what humans may think about the weather. But the reality is that weather is largely interesting to us because it affects our lives in so many fundamental ways. It influences human communities directly, but it indirectly influences many other aspects of the physical world upon which we are dependent, and so the relationship of humans to the environment is what makes climate an interesting thing to investigate. From that sort of conclusion, it is only a short reach to understand that studying human populations is the first thing that a geographer should do.

Trewartha taught this principle by example. His textbook "Elements of Geography," originally co-authored with Vernor Finch, had a chapter on population as early as 1948. By 1967, after Trewartha became first author on that book, the organization was based on his "trinomial" division of geography into the interrelated parts of physical earth and cultural earth being connected each to population (Trewartha, Robinson, and Hammond 1967). Admittedly, the physical leg was the longest of the three—24 chapters devoted to that topic, one chapter devoted to population, followed by four chapters on cultural elements of geography. Still, the key was the population nexus between the physical and cultural "worlds."

In some ways, Trewartha was taking a gamble by suggesting that geographers get in touch with their "softer side." Harvard had only recently eliminated its Geography Department after a few years of separation of geography from its earlier home in geology (Smith 1987). The President of Harvard had famously suggested that Geography was not an appropriate subject for a university. America was grappling with an earlier brand of political correctness and Trewartha had to know that taking a stand for people and population could be misinterpreted in any of a number of ways. Any discussion of population could lead easily back to contentious issues such as genetic determinism, or to the influx into the United States of suspected communists. The country was still in the clutches of McCarthyism and Joseph McCarthy was, after all, Trewartha's own senator. This was a time when the almost all immigration to the United States was illegal, birth control was illegal unless you were married, abortions were illegal, divorce was very hard to come by, and cohabitation was a clear sign of deviancy. The past was indeed a foreign country (Lowenthal 1985)!

On the other hand, Trewartha may well have been deliberately responding to the challenge that Harvard, in particular, had presented the discipline. According to Smith (1987)

the chair of the Geology Department at Harvard understood the relevance of physical geography but was "profoundly skeptical about the importance of human geography" (p. 168). As President of the AAG, Trewartha was certainly aware of these issues and may have been purposefully framing the field in a way that more succinctly tied together the human to the physical parts of geography. In that effort he had a lot of company and inspiration in trying to push population to the center of geographic scientific inquiry. In the first place, Trewartha was teaching at University of Wisconsin, a campus that has long been in the forefront of population studies. As in most U.S. universities, the expertise tended to reside in Sociology departments, rather than in Geography, and Trewartha noted the tendency—still true today—for European geographers to be more involved in population studies than are American geographers. But in the year that he delivered his AAG address on the importance of population in geography, three of the members of the Board of Directors of the Population of Association of American were men who had received their doctorates at Wisconsin (Harold Dorn, Paul Glick, and Henry Shryock). Indeed, one of the original Board members in 1931, when the Population Association of America (PAA) was founded, held a Wisconsin doctorate (Oliver Edwin Driver) and two other Wisconsin alums (John Black and Clarence Dittmer) were early Board members of the PAA.

Without question, people educated in Madison were learning about, or were at least sympathetic to, population studies. The campus became a demographic powerhouse after the arrival from Princeton in 1956 of Norman Ryder, but there can be little question that he would not have been attracted to Wisconsin had there not been a receptive environment for population studies. In his own backyard, then, Trewartha had a lot of company when it came to interest in population as a field of scientific study. It is probable that he not only knew this, but had interacted with people active in the field of population analysis.

Norman Ryder had been affiliated with the Office of Population Research at Princeton before arriving at Wisconsin and it was at Princeton that demography established its earliest strong presence in American academia. In 1935 Frederick Osborn, one of the founders of the PAA, encouraged the Milbank Memorial Fund to set up a University-based program in research and graduate study in population. His first choice was Harvard, but President Conant (the very same man who took Geography off the map at Harvard) was not interested, so Osborne turned his attention to Princeton University, to the Woodrow Wilson School of Public and International Affairs, which his father, along with Albert Milbank, had helped to establish. In 1936, The Milbank Memorial Fund signed the papers setting up a five-year grant to Princeton to establish the Office of Population Research. Frank Notestein was the first director, but Henry Shryock (PhD from Wisconsin) was one of his first assistants, along with Dudley Kirk (who had gotten his doctorate at Harvard, no matter what Conant may have thought about the subject of his dissertation).

In the mid-1940s it was becoming obvious that the end of the war was going to bring a new era to Europe, so Kirk and Notestein began laying out a plan of research to study Europe's population. At about the same time, the League of Nations economics group moved from Geneva to Princeton and they commissioned a series of studies designed to enhance the quality of postwar planning. These studies, conducted at Princeton and funded by the Carnegie Corporation of New York, included *The Future Population of Europe and the Soviet Union* by Frank Notestein, Irene Taeuber, Dudley Kirk, Ansley Coale, and Louise Kiser (1944); *Economic Demography of Eastern and Southern Europe* by Wilbert Moore (1945); *Europe's Population in the Interwar Years* by Dudley Kirk (1946); and *The Population of the Soviet Union: History and Prospects* by Frank Lorimer (1946). As these projects were unfolding, the US Department of

State asked that the studies be extended to Asia. This produced the two well-known volumes, *The Population of India and Pakistan* by Kingsley Davis (1951); and *The Population of Japan* by Irene Taeuber (1958). These studies firmly established the field of population studies at Princeton, but they were also the kind of area studies that Trewartha was arguing geographers should be conducting and which he did, ultimately, do some of himself, as I note below.

In essence, you could say that the Princeton demographers, who were mostly trained in sociology, had stolen the geographers' thunder. The studies were widely circulated and were very influential. They helped convince John D. Rockefeller III to set up the Population Council, which he did in 1952, literally at the time that Trewartha would have been drafting the remarks for his Presidential Address. The Population Council very quickly became a leading voice in policy-oriented research and has contributed in many indirect ways to the decline in fertility in both developed and developing countries. Frank Notestein (who in 1959 moved from Princeton to Manhattan to become the third President of the Population Council) was also convinced that the success of these area studies was instrumental in encouraging the United Nations to establish a Population Division. Furthermore, even as Trewartha was giving his address, the International Union for the Scientific Study of Population (IUSSP) was working with the United Nations to plan for the World Population Conference that was subsequently held in Rome in 1954.

As it turned out then, Trewartha was not a voice in the wilderness. He was adding his voice to an increasingly loud choir that recognized that population growth and its consequences would be among the major policy issues—not just scientific issues—of the second half of the twentieth century. And, as I have already mentioned, he was preaching from a platform squarely situated in an environment supportive of population studies. Yet, having said all of that, Trewartha did not, in my view, make an especially convincing case as to why physical

geographers should pay attention to humans, as opposed to just letting other people deal with that problem. As a result, his case was heard by people predisposed to accept the message--mainly human geographers, and seems largely to have been ignored by the physical geographers who were, in my view, his most important audience. So we should not be surprised that one of today's best selling books on weather and climate, (Aguado and Burt 2003), written by the Edward Aguado (a Wisconsin PhD) and James Burt (Chair of Geography at University of Wisconsin), does not have a single mention of population in the index. Indeed, Professor Aguado examined for me a series of currently available meteorology and climatology textbooks. He was able to locate only one that mentioned population in reference to its impact on desertification (Oliver and Hidore 2001). Global climate change is an important issue, and global population change is an important issue, but physical geographers have generally not been the ones to knit these two concerns together.

Even if he convinced few of his physical geography colleagues to study population, Trewartha was himself firmly convinced of its importance and in 1957, for example, he found himself on the same program at a Cold Spring Harbor Symposium with several contemporary giants of demography, including Frank Lorimer, Ansley Coale, Norman Ryder, John Hajnal, Louis Henry, and George Stolnitz. He then embarked upon a trilogy dealing with population geography: (1) *A Geography of Population: World Patterns*, for which he was sole author (Trewartha 1969); (2) *The Less Developed Realm: A Geography of its Population*, for which he was author, assisted by Randall B. Sale, a cartographer (Trewartha 1972); and (3) *The More Developed Realm: A Geography of its Population*, for which he served as editor, rather than author (Trewartha 1977).

In the conclusion of his 1953 Presidential Address, Trewartha says that "As the pivotal element in geography, and the one around which all the others are oriented, and the one from which they all derive their meaning, population cannot be neglected without doing serious injury to geographic science in general" (p. 97). To me, that sounds like a call to incorporate population into all aspects of geographic analysis. Yet, by the time he wrote the first book in his geography of population trilogy, Trewartha seemed to have backed away from that broader scope, when he wrote in the Introduction that "the geography of population (or population geography) is concerned chiefly with one aspect of population study—its spatial distributions and arrangements" (Trewartha 1969:2). That describes what many people in geography still see as the field, but I believe that Trewartha's original, more ambitious, idea was actually right on the mark, and it is now up to those of us in the field of population geography to reclaim the higher ground—to put population more squarely in the center of the study of geography.

The Past, Present and Future of Population Geography:

Reflections on Glen Trewartha's address fifty years on.

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Past: Re-Reading Trewartha's Case For Population Geography

Re-reading Trewartha's (1953) presidential address fifty years after it was written, I was struck by two very general aspects of his argument. First, there is his conviction that geography is a unitary science. This he expressed forcefully in his claim that it would be 'fundamentally bad' if what he calls the 'physical-cultural division' were to result in two separate kinds of geography. The division he drew attention to is expressed a little differently today but it has greatly intensified to the point where physical and human geography, at least in the UK, have little common ground (Massey, 1999). Geography at the beginning of the 21st century, it seems to me, is characterized more by disunity than unity, and most, but not all, professional geographers seem more concerned with their own specialisms than with what might hold geography together as a discipline. This, according to Clifford (2002) inevitably threatens internal cohesion, resulting in an absence of mutual respect and a geography in which "the whole is somehow less than the sum of the parts" (Clifford, 2002: 432). The nature of geography is too big a topic to tackle here but the comparison between Trewartha's conviction and the prevalent attitude to the physical-human dichotomy at the present time is a reminder of how much geography has changed.

My second observation is more immediately pertinent and relates to the extent to which Trewartha's identification of a disciplinary space for population geography depends upon his conceptualisation of the parent discipline. His plea for a trinitarian approach in which population becomes the dynamic element linking the cultural and physical earth within a unitary geography is grounded in a particular understanding of the nature of the discipline; and one that, arguably, reveals the spatial, as well as the temporal, context in which he was writing. Fifty years on, recognition of the 'situated' nature of academic projects and knowledge (Harraway, 1991) has led historians of geography to pay much closer attention to the spaces and sites in which geographical knowledge is made (Driver, 1995; Livingstone, 2000). For Trewartha, a dominant presence in the intellectual landscape of North American geography was Richard Hartshorne, whose ideas on *The Nature of Geography* (1939) had influenced a generation of Anglo-American geographers. It is unsurprising, then, that Trewartha followed Hartshorne by taking areal differentiation to be the central theme of 'our science'. He also characterized geography as essentially anthropocentric, and was thus able to elevate the 'resource concept' to a central role within physical geography. Since there are no resources without people, he was then able to claim that physical geographers must be 'cognizant of the population element.' This is not an argument that would appear convincing to those physical geographers who currently study, for example, the internal dynamics of glaciers and who have a very different (though rarely articulated) conception of the nature of their sub-discipline.

However, it is Trewartha's attempt to specify the links between population and the cultural earth that exposes the cultural embeddedness of his case for population geography to a greater degree. His appeal to Sauer's understanding of cultural geography is crucial to his argument, for the link he identified between population and the cultural earth depends upon it. It

is Sauer's emphasis on the study of human artefacts rather than 'man himself' which allows Trewartha to construct man/population as 'the creator of the cultural earth' and thus the pivotal element in his 'geographical system'. From a European perspective, this seems a particularly American way of conceptualising human geography at that time.

The recognition that Trewartha was speaking from a position within American Geography of the 1950s is not, of course, a criticism of his argument. He was, after all, trying to convince an audience of American geographers. Nor is the fact (and I take this to be uncontentious) that the details of his case for population geography are no longer convincing, a sign of his failure. In the last fifty years, our understandings of the nature of geography, and especially human geography, have changed radically (Golledge, 2002). The region is no longer seen as the glue holding together the specialist subdivisions of the discipline and, whatever the role of population geography, it cannot be the one identified by Trewartha. Yet Trewartha's plea should not be judged as merely of historical interest, since it must be acknowledged that the challenge to which he was responding is no less of a challenge today. The place of population geography within the discipline we call geography seems as problematic to me now as it did to Trewartha then, only for different reasons. And specifying this place will be just as dependent on *our* conceptualisations of the parent discipline.

Present: The Identity of Population Geography as a Sub-Discipline

My own uncertainties about the identity of population geography arise from my understanding both of how human geography has changed and of the contributions that those who call themselves population geographers have made to knowledge over the past five decades. Let me make it plain that I regard population research as vital to our knowledge of the human condition

and do not underestimate its current vibrancy or its policy relevance (Dorling and Simpson, 1999). Population geographers are active amongst those promoting and pursuing population research and, as such, may be highly regarded as specialists in the investigation of various aspects of population. In this respect, Trewartha's 'call to arms' did not fail to bear fruit for we now have population specialists amongst our geography staffs, courses in population in our geography programmes and, in all probability, an even greater abundance of scholarly publication in this field than he could have anticipated. Despite these evident successes, there are, I think, two problems associated with the current identity of population geography which deserve our attention:

1. The tendency of other human geographers to ignore the substantive subject matter of population geographers in their re-workings of human geography;
2. An imbalance in that substantive subject matter, such that migration assumes an overwhelming dominance as the topic of choice within Anglo-American population geography.

Population geography and human geography

I have argued elsewhere that the apparent reluctance of population geographers to engage in wider debates within human geography threatens the standing of population geography as an integral and important part of any geographical whole (Findlay and Graham, 1991; Graham, 2000). It is not hard to find text books in human geography that ignore population. Certainly, those who are at the forefront of (re)shaping human geography tend to be silent on the place of population geography. Dear's (1988) early bid to outline the dimensions of a postmodern human geography makes no mention of the subdiscipline, and Gregory's (1994) mapping of the intellectual landscapes of human geography is silent on issues of population. Indeed, students

reading Hubbard *et al*. (2002) on contemporary human geography could be forgiven for concluding that population geography has nothing of note to contribute to the new geographies at the cutting edge of research today. Here we find echoes of Trewartha's evidence that population matters are being overlooked. In our case, however, we cannot blame the relative absence of population geographers for this oversight. It is rather their relative silence in important debates that is complicit in according them a marginal status. Many population geographers, it seems to me, would find more that appears familiar and relevant to their research concerns in Trewartha's proposals for the content of population geography than they would in, for example, Derek Gregory's (1994) *Geographical Imaginations*. Whether this is the result of a methodological conservatism on the part of population geographers (Graham and Boyle, 2001) or, as Findlay (2004) argues, a product of the particular limitations and problems of applying social theory to advancing understanding of population issues, the threat of relegation remains. In a climate of competition for students and resources, convincing other human geographers that we have something worth saying may be as important as convincing funding authorities that our research is worthy of their support.

Migration and the research agenda

I am equally concerned about the second problem of identity which manifests itself in what I have called an 'imbalance' in the substantive subject matter of Anglo-American population geography at the present time. In conference sessions organised by population geographers in both the UK and North America, and in the pages of the *International Journal of Population Geography*, papers on migration greatly outnumber those on other topics (namely fertility and mortality) traditionally associated with the study of the demographic qualities and quantities of populations. Here I find something of a paradox, for it seems to me that this could

well be a consequence of the more secure identity of migration researchers as *geographers,* despite, if I am right, the marginalization of population geography within the disciplinary space of geography. Migration is, by definition, a spatial act, even if it is also much more than this (Halfacree and Boyle, 1993). The spatialities of fertility and mortality are, in comparison, far less obvious. This cannot be the only reason for the dominance of migration research within our sub-specialism, however, as others, most notably medical or health geographers, have recognized the importance of geography in their investigations of the spatial dynamics of epidemic diseases (for example, Smallman-Raynor and Cliff, 1999) and, more generally, of inequalities in morbidity and mortality (for example, Curtis and Taket, 1996; Cummins and Milligan, 2000). Moreover, the geography of population geography itself, at a world scale, is becoming increasingly differentiated, with population geographers in the Third World being much more likely to attend to matters of fertility and mortality (as well as migration) in their research (Boyle, 2003). These observations are not intended as a call to 'defend our turf' but only to open up the question of what the future research agenda of Anglo-American population geography *should* be.

Future: A case for population geography in the 21st century?

Let me reiterate that the substantive concerns of population geographers make an important contribution to knowledge, as well as being relevant to the 'big issues' of public policy. Population research thus has a crucial role to play within and beyond the academy. The relationships between population and resources, the movements of refugees and asylum seekers, the consequences of international migration and transnationalism, the implications of low fertility and ageing populations, and the gross inequalities in the risks of illness and death are among the 'big issues' of the day. I have no doubt that those who currently identify themselves

as population geographers will continue to pursue research in at least some of these areas, but so will others who do not. This blurring of disciplinary (and sub-disciplinary) boundaries is commonly welcomed. My own experience of working with non-geographers and with geographers who do not identify with our sub-specialism confirms the excitement that can be induced by the articulation of different ways of seeing the world. The resultant feeling of 'pushing back the boundaries', of opening up new research frontiers, is exhilarating but at the same time it appears to be re-mapping the spaces of knowledge in ways that de-stabalise current disciplinary categories. Is these circumstances we must ask, 'Will there be a disciplinary space for population geography in the future?'.

Even raising this question is to risk responses of irritation or worse, including accusations of parochialism. Thrift's (2002) recent up-beat assessment of the future of Geography provoked "one long audible groan, and then some words – "here we go, again!"" from Gregson (2003: 5), and questions about the future identity of population geography may seem equally unengaging. Yet such questions of identity and disciplinarity are important, I believe, especially if we take seriously Gregson's claim that we increasingly live in a post-disciplinary world. To abandon the 'old disciplinary game' institutionalised in the nineteenth century, in which population geography found a disciplinary niche within geography, is to raise the possibility that there may be no future for population 'geography' to secure. Whether this possibility should be embraced or rejected is as much a political as an intellectual decision, for the distinction between a material world (of money, jobs, facilities, buildings) and a world of ideas is not as clear-cut as Gregson implies. In any fundamental reconfiguration of the academy –and I remain to be convinced that this is likely or even being entertained by those with the power to put it into effect – I suspect that the current research agendas of population geographers would be further marginalised.

Moreover, my reading of the contemporary structure of universities in the UK, though not perhaps in the USA, suggests that the 'old' disciplinary categories are becoming, in some respects, more rather than less entrenched. Traditional academic tribes continue to hold their own disciplinary spaces within the academy (Johnston, 1996; Becher and Trowler, 2001). Securing a clear identity for population geography and its disciplinary niche within geography, then, may be the best strategy not only for material self-preservation but also for ensuring the future development of ideas central to geographical thinking about population issues. The wisdom of this strategy, however, depends on our ability to convince others, within and beyond geography, that we have a distinctively geographical contribution to make to population research.

By way of a conclusion, I offer a final thought. One of the research groups I work with includes psychologists – who, as it happens, have a much clearer conception of their disciplinary distinctiveness than do most geographers. In psychology, categorisation is seen as a basic cognitive process that humans use to understand the world, and to survive in it. If this is so, then it is no less the case in academia with its institutionalised divisions into science, social science and arts. It is hardly novel to point out that geography sits uncomfortably within this classification but nor is it implausible to suppose that this uneasy positioning has threatened geography's survival in the past, especially in the North America. My argument is that population geography sits equally uneasily within recent re-shapings of human geography and that this may also be seen as a threat to its survival. One result is an uncertainty about the future research agenda of our sub-discipline. Migration has noticeably assumed greater prominence as a focus of research over the last decade or so, and many other aspects of population have been comparatively neglected. This, I contend, has more to do with the ways in which the categories of disciplinary and sub-disciplinary identities are configured than with any inability to recognise

and address the substantive issues of population research. Commitment to thinking geographically about fertility, for example, seems to have waned in the face of changing constructions of human geography.

In a broader context, the 'threat' to population geography comes from the abandonment of traditional disciplinary categories. Whether we suppose this likely or unlikely, whether we welcome it or not, psychologists would tell us that some alternative classification must take its place. Would an academy organised around 'issues' (as Gregson, 2003, appears to favour) be more conducive to the research interests currently embraced by population geographers? It would surely have transitory qualities but, more than that, it would create institutions in which students were educated by 'issue' rather than socialised into a discipline. Thus there would be no reason for anyone to call themselves a 'geographer'. Moving beyond disciplines is moving beyond geography, but it cannot be to abandon categorisation in the organisation of research practice or pedagogy. New configurations of the academy would place population issues within a different map of knowledge bundles. The future of population geography is, therefore, inextricably linked to the future of geography as a division of knowledge, and equally challenged by any post-disciplinary reconfiguration of the academy that might emerge. Thus the dimensions of Trewartha's challenge may have changed but we still face the task of making a case for population geography in the 21st century.

On the Boundaries of a Sub-field:

The Unhappy Marriage of Social Theory and Population Geography[1]

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For over a decade, population geographers have been calling for scholars within the sub-field to engage more deeply with developments in social theory (White and Jackson 1995, McKendrick 1999, Lawson 2000, Halfacree and Boyle 1993, Findlay and Graham 1991, Graham 1995). At the heart of the appeals are several implicit parallels with the arguments guiding Glenn Trewartha's presidential address to the Association of American Geographers in 1953. Specifically, there is shared concern about the neglect and marginalization of population geography in the discipline as a whole (1953, p. 97), and a common critique of population geography as primarily descriptive (1953, p.74). In addition, there is agreement that population issues should be central to the discipline's research agenda. But this is where the commonalities end.

Contemporary retheorisations of population geography differ from Trewartha's case in more ways than they resemble it. Specifically, they diverge in their conceptualisations of the boundaries of the sub-field, their views of the goals and meanings of theory, their analytical

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[1] The sub-title of this commentary is a variation on the title of Hartmann's (1996) piece**.** This paper was first presented at the 2002 Association of American Geographers conference in New Orleans. Many thanks to Kavita Pandit for organizing the session in which the paper was presented and for the invitation to participate in this exchange. I'm also grateful to Paul Boyle, Amy Freeman, Jennifer Hyndman, Shirlena Huang, Vicky Lawson, and Alison Mountz for feedback on a related article; their comments have contributed to this commentary as well. Funding was provided by NSF-9911510, and that support is sincerely appreciated. Any errors remain my own.

placement of social construction and social reproduction, their understandings of the politics of positionality, and their perspectives on the implications of methodological debates. Such differences underlie what I will argue are on-going, often unexplored tensions within the sub-field and within geography more generally. Each of these tensions is reflected in scholarship that lies at the margins of population geography, margins that can be fruitful arenas through which to more strongly connect population geography to the broader concerns of the discipline. Specifically, critical and feminist migration studies, as a rapidly growing and increasingly well recognized branch of the subfield (Boyle, 2002), has already made substantial strides in pushing the themes of population geography into explicit engagement with a wide range of vibrant contemporary theoretical debates.[2]

Many critical migration scholars locate their research outside of population geography, and some population geographers certainly see critical and feminist migration studies as falling beyond the scope of the subfield. However, the substantive foci of the emerging literature overlap with those at the heart of traditions within population geography. Since the publication of White and Jackson's (1995) widely referenced call for a retheorization of population geography, 'new' migration scholars have examined the multi-valent politics of population processes, engaged a wide range of theoretical frameworks, and explored the potential of multiple methodological approaches (for reviews see Boyle, 2002; Ogden, 2000). Inasmuch as

[2] The research I discuss here exemplifies the growing conceptual repertoire of critical geography as it applies to studies of migration, immigration, and spatial mobility, and does not aim to provide an exhaustive overview. For feminist migration literature in particular, such reviews can found elsewhere (Willis and Yeoh, 2000; Kofman et al, 1999; Chant, 1992; Momsen, 1999; Boyle and Halfacree, 1999).

this body of work can be understood to be population geography, the subfield has both responded to Trewartha's call and moved beyond it.[3]

Sub-Disciplinary Fortifications

The boundaries of population geography have been contested particularly vigorously over the last fifteen years, with some scholars advocating for a broader variety of topics and more inclusive set of approaches (e.g., Graham and Boyle, 2001), and others suggesting that a more focused, limited scope would best serve the subdiscipline (e.g., Findlay 2004). Such tensions mirror those that have animated the discipline more broadly in that they revolve around questions of how deeply to delve into debates about gender and difference, the politics of methodology, and critiques of liberal humanist universalizations. Population geographers, much like demographers, have tended overall to continue to display an orientation that is largely empiricist and crudely positivist (White and Jackson, 1995). Meanwhile, migration scholars with a stronger concern for critical social theory have turned to other subfields as inspiration and outlets for their research. Critical, explicitly theoretical migration research in particular has flourished in feminist, cultural, and urban geography, and increasingly in political geography as well.

Despite recent efforts and on-going entreaties to develop stronger theoretical work in both demography and population geography, there nonetheless continues to exist what Greenhalgh (1996: 27) refers to as "a remarkable persistence of the ahistorical, Eurocentric, and apolitical presumptions of modernization theory" within population studies as a whole. Graham

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[3] In making this argument, I do not privilege critical or 'new' migration studies in relation to the future of population studies, nor do I suggest that this is the only or the most important body of literature making these advances. Rather, I am using this work to illustrate that there already exists a body of research on population issues that has developed an extensive dialogue with critical social theory. For a more detailed discussion of this growing feminist migration literature, see Silvey (forthcoming).

(2000: 258) suggests that there are at least two main reasons, besides "a general reluctance to abandon a dominant empiricism," for the conceptual and methodological conservatism of population geography. First, she points out, those population scholars who are involved with public policy may see theory as difficult to translate into the context of their work, and they may see critical theoretical approaches as having little utility for their purposes.[4] Second, and of greater interest to Graham, is the matter of "what is to count as theory, since the term is used in a variety of ways" (Graham, 2000: 258). She (ibid.) advocates an expansive and inclusive notion of theory, which she defines as:

> any set of ideas, or conceptualisation, which goes beyond the particularities of individual cases and offers some more general framework, or account of the nature of certain circumstances, relationships or events. In addition, a theory must have explanatory force, which is to say it must contribute to making these circumstances, relationships or events intelligible. No doubt the natural scientist, and some social scientists, would demand a more rigorous definition which specifies the kind of statements (e.g. law-like statements) of which a theory is composed.

Such an approach to population theory is aimed at explanatory abstraction (i.e., specification and elaboration of various social theories) in the spirit of Sayer's structurationism (1992). It intentionally avoids finer specification in order to cultivate a fine balance between the historical strengths of population geography and the need to engage more deeply and critically with advances in social theory.

Critical and feminist migration researchers as a whole are similarly concerned with walking this fine line between objectivist and interpretivist approaches, and their work has made substantial progress in connecting political-economic analysis to the contributions associated with the cultural turn in geography (Nagar et al., 2002). Specifically, critical scholarship has assessed

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[4] But see Li (2003) for an example of the ways that critical theoretical work can fruitfully inform policy, in this case community-based resource management policy.

the inter-connections between gender differentiated migration processes, global neoliberal political-economic change, the construction of citizenship and (trans)nationalism (e.g., Kofman and England, 1997; Wright et al., 2000; Yeoh and Willis, 1999), the reification of socio-spatial boundaries defining race and ethnicity (e.g., Fincher, 1997; Li, 1997; Nagar, 1998; Nagel, 2001), the regulation and meanings of sexuality and sex work (e.g., Binnie, 1997; Fortier, 2003; Law, 2000; Tyner and Houston, 2000), the production of belonging, exclusion, and identity in particular places (e.g., Lawson, 2000; Dwyer, 1999; Secor, 2002; Yeoh and Huang, 2000), and the socio-spatialities of diasporic communities (Dwyer, 2000; Elmhirst, 2000; Huang et al, 2000; Tyner and Kuhlke, 2000). It has thus interrogated both the ways that gender and other axes of social differentiation influence migration patterns, as well as the role that migration plays in shaping social hierarchies, spaces of difference, and geographies of inequality in places and across scales.

Such a broad "critical interpretive approach" (Lock and Scheper-Hughes, 1990) stands in contrast to the logics at the center of population geography inasmuch as it serves to challenge the foundations and categorizations on which most conventional studies of fertility, mortality, and migration have been based. But it is also possible, and I argue ultimately more productive, to understand this emerging body of research as contributing to a reconstructed population geography. Indeed, rather than counterposing this feminist work with more conventional population studies and emphasizing the multiple divergences and layers of theory underpinning the ostensibly contrasting strands of research, the synergies as adopted in feminist migration research can be viewed as already having begun to break new ground for population geography. Indeed, some feminist and critical theoretical migration analysis is deliberately oriented towards the enrichment and expansion of population studies (e.g., Tyner, 2004; Willis and Yeoh, 2000; Lawson, 1998, 2000; Teo and Yeoh 1999; Wright et al., 2000; Yeoh et al., 1999). Yet "attempts

to open up the discussion of 'new' population geographies…have been met [by population geographers more generally] with a complacency" (Graham and Boyle, 2001) and dismissiveness. Deeper engagement with feminist and critical perspectives *is already* complementing population geography's historical strengths. The problem is that the subfield tends to exclude from its purview the work that reflects these advances.[5]

Critical migration research investigates the ways in which migration differs along the multiply inflected lines of gender, the semiotic processes that uphold these differences, the material implications and refractions of such distinctions, and the ways in which spatial mobility is intertwined with the production of difference. Some may see the work in this vein as too deliberately political, but proponents argue that such a critique, despite its pretense to value-neutrality, is itself ideologically positioned (e.g., Harvey, 2001). Following from this, critical theorists of population have identified and problematized the underlying premises, institutional power relationships, geopolitical complicities, and productive silences that have served to define demography (Sharpless, 1997) and, by association, population geography.

In querying the political histories of population science, critical theorists share a number of goals with feminist migration scholars. Specifically, feminists have been centrally concerned with analyzing the multiply gendered power relations that have informed taken-for-granted concepts within geography (Pratt and Hanson, 1994; Women and Geography Study Group, 1997; Seager and Domosh, 2001). Historically, most population scholarship defined its basic concepts as empirically identifiable categories through which to understand and predict trends in demographic

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[5] As Graham (2000: 267) puts it, "perhaps it is time to renegotiate our subdisciplinary identity, not in the sense of erecting barriers to protect our academic turf, but rather to ensure that the research agenda of population studies reflects a sound theoretical understanding of [gender, difference, power,] space and place."

processes (White and Jackson, 1995). The subfield thus provided careful definitions of concepts and generated a wealth of information about patterns of fundamental population processes, as well as a rich tradition of spatial analysis (Rogers, 1995). But it did not address questions about the social theoretical implications or political processes tied to spatial mobility.[6]

By contrast, the primary objectives of critical and feminist migration research have been to disentangle the politics of difference as they shape both the dynamics and meanings of population processes in practice, as well as the knowledge that is produced about these processes. Hyndman and Walton-Roberts (2000: 246) point out that such an analysis "is important precisely because such assumptions define research questions, shape government policies, and generate common frames of reference." Willis and Yeoh (2000) have recently collected a number of contributions to critical migration studies (focused in this case on gender and migration) and have published them as an edited volume. If population geography would more actively include such work within its boundaries, we would already be further along in meeting Trewartha's (1953: 71) plea that we "develop a working concept of population geography which may be applied broadly in teaching and research."

An Already Reinvigorated Population Geography?

The 'new' migration scholarship in geography focuses not only on mobility trends and patterns, but also on the differences that shape individual and group identities and the political consequences of these differences (Nagel, 2002). At its core, this emerging work questions how socio-spatial relations are reinforced or transformed when certain groups of people migrate for

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[6] Theorizations of the politics of mobility direct attention to studies of immigration and citizenship. On the changing spatiality of power in the EU, see Leitner (1997), and on the politics of scale in relation to citizenship, see Staeheli (1999).

particular purposes. It aims to unravel the constellations of power that underwrite particular migration flows and labor market niches (e.g., Tyner 1994; 1997; Pratt, 1997; Wright, 1999). It provides a complex reading of power that refuses dualistic, structure/agency polarizations, and it illustrates the embeddedness of migrants in the cultural struggles linked to broader political-economic pressures (see especially Gidwani and Sivaramakrishnan, 2003). It points to the importance of going beyond straightforward analyses of migrant narratives as transparent texts, and in its most mature incarnations, it argues for the exploration of ethnographic subjects' embeddedness in regional modernities and always contested cultural hegemonies (ibid.). And, it demonstrates—rather than simply arguing for—the theoretical grist provided by allying micro-scale analyses of everyday practices with historical, demographic, and political-economic interpretations of broader-scale dynamics.

If population geography more overtly includes critical migration scholarship, it can confidently claim to have answered Trewartha's (1953: 96) admonition that geographers move beyond their tendency to "treat human beings in terms of numbers almost exclusively" (p. 96) and his suggestion to pursue not only census data analysis but also "first hand observation or…archival investigation" (97). Further, through expanding its rubric to include critical scholarship on demographic topics, population geography can be recognized as a subfield that has already begun the process of productively and creatively interrogating the discursive categories into which Trewartha subdivided those qualities of human population he deemed worthy of investigation (i.e., " a.) body size, form and color, b.) race and nativity, c.) sex balance, d.) age composition…[etc.]" (1953: 89). Inviting critical migration studies into the conversations of population geographers, and indeed *recognizing* its already vigorous presence on the margins of the subfield, is not a trivial matter of defining academic turf. Rather, it is a way for the subfield to strengthen and deepen its

understandings of population, which as Trewartha (p. 83) would have it, is "the dynamic and pivotal element….from which all the other elements are observed and from which they all, singly and collectively, derive significance and meaning." Critical migration scholars have already initiated a rich dialogue linking social theory to population studies. Population geographers need only to engage.

On Being Part of Population Geography's Future: Population-Environment Relations and Inter-science Initiatives

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Introduction

We have been asked, or challenged, to dwell on population geography's future, and to offer suggestions on how a healthy, vigorous geographical approach to population studies might be forged. Do we work within disciplinary boundaries, between two cognate areas, between two inter-related domains that conventionally have been categorized within different disciplines, or do we look beyond disciplines to a "post-disciplinary" state of mind and method? Thinking "inside the box" has its drawbacks, yet unrealistic "star-gazing" can be found wanting too. If population geography's survival is at risk, a defensive strategy to "circle the wagons" might stave off destruction, but too much caution can condemn the sub-discipline to obscurity or subservience. On the other hand, too much unfettered enthusiasm for futuristic holism might falter in the face of modest accomplishments, or worse still, poorly structured science. Looking to the future, however, does mean we should neither be content with our past, nor complacent about our present state. Why not err on the adventurous side? A sub-field might only be as vigorous as its practitioners, or tomorrow's young practitioners who might renew a faltering field through rejuvenated lenses. But, don't we have a joint responsibility – we oldsters and you youngsters – to think "outside the box," to venture into uncharted territory, and to break new ground?

Though I have posed the above set of alternatives as an introductory sortie, I don't want to dwell on them. Rather, I would like these challenges surrounding the sanctity of "disciplinary correctness" to serve as the back-drop to what follows. Several of us have been asked our view on "where population geography should go," so I will start from this vantage point. Erring on the ambitious side, I would like to promote two domains of population geography, or more broadly two geographies of population relations, which fit "outside the box," go beyond our discipline's realm and might handily be framed as post-disciplinary, inter-science initiatives. Others among my colleagues will undoubtedly recommend how the health of population geography can be assured, or defended. I feel geography is no longer in the precarious position where we need to be cautious to reach out beyond our discipline and contribute to the wider agenda of social and environmental sciences and their relevancy to society, (National Research Council 1997). Post-disciplinary scholarship may be in its infancy, but joining such a refreshing and invigorating initiative in the area of population-environment-development relationships is a worthwhile challenge for our newcomers, and our future population geographers. Here's my sortie into this arena, and my advocacy for population-environment- development relationships' place(s) in population geography's future.

The 1990's view on 'Where population geography should go.'

Looking back a mere ten years ago, in the Fall 1994 PSG Newsletter I made some observations concerning 'new directions in population geography,' which were gleaned from a 1991 IGU Commission brief edited by Daniel Noin (Conway 1994; Noin 1991). Adding some modest qualifications to the original suggestions of IGU Commission authorities, these are reiterated here as an opening proviso.

- Population geography cannot afford to neglect the burning problems facing humankind;
- Population geographers should look once again to human geography rather than demography in selecting research issues;
- Studies of population-environment relationships are urgently required;
- Studies of migration, circulation, transnationalism, refugee and internally displaced person movements and of immigrant communities must be major themes of empirical research;
- Our contribution to the population sciences should be oriented far more towards political economy and political ecology perspectives than towards mathematical demography or socio-spatial engineering;
- We should focus on evaluating the micro-spatial implications of macro-social processes; and
- We should not be afraid to ask large questions, or be too timid in trying to answer them.

Inter-disciplinary research themes that have been overlooked

In this commentary, I argue that If we are to follow Glenn Trewartha's (1953) vision, as well as listen to calls for a re-invigorated and relevant population geography, two inter-disciplinary ventures must be part of our future agenda. The first, an important theme from the 1994 list is the study of population-environment relationships. The second is the study of migration–development-environment relationships. These two overlooked fields of geographical research both have obvious connections to population geography.

The advocacy does not stop here, however. One of the realities these topics underscore is the inter-disciplinary nature of both research themes (see Brettell and Hollifield 2000). While

population geographers may feel confident that they have the social scientific acumen to delve into the dynamic processes of population change and its socio-demographic impacts, the bio-physical domain of the environment is another disciplinary challenge altogether. While population geographers may be comfortable with their sub-disciplinary command of migration processes and patterns and their social and economic consequences; again, the understanding of environmental impacts and the ensuing dynamic relations and feedbacks that the biophysical domain may cause are others' specializations. More inter-disciplinary complication is added when environmental science focuses on land use/land cover change, deforestation, reforestation and forest frontier settlement through the imagery and methods of remote sensing and GIS (Liverman et al. 1998). Population geographers with such interests as these may therefore need to re-position themselves to become involved in inter-science research and participate with environmental, natural and physical scientists and GIS specialists in an evolving realm that is "post-disciplinary" rather than within our long-standing (and quite comfortable) sub-discipline.

Embracing such inter-disciplinary projects, may indeed warrant the excursion of brave, new population geographers as "population futurists" in inter-science initiatives. Clearly, population-environment and migration-development-environment relationships are as much the domain of biophysical science and environmental science as they are of population and social sciences, yet one discipline's theoretical and empirical base – regardless of its breadth - will not do. To date, "other peoples" science is summarily treated, or other factors exogenously defined, rather than being substantially incorporated into attempted explanations of the complex relationships and inter-relationships. We may have to join forces and undertake team research to build theory and explanation across disciplines; not just borrowing ideas, but incorporating them in new ways and innovative mixtures (see Lutz et al [1994] for a new IIASA systems-model of

note). And, we can embark on this team effort and post-disciplinary project in the firm knowledge that the global scientific community has at last recognized the central importance of population study in the pursuit of answers to how we might make today's and tomorrow's world more sustainable and more healthy (Global Science Panel 2002).

The Complexity of Population-Environment Relationships

Environmental Implications of Population Dynamics

Population geographers have studied the environmental implications of population dynamics in considerable detail, but usually under a different title, or research sub-field. Clearly, urbanization and its many facets - rural-to-urban migration, internal migration in general and urban residential mobility and residential differentiation – are context-changing population dynamics within the purview of population geographers, past, present and future. Indirectly, urban environmental consequences might feature in this mainstream research – for example, in the examinations of uncontrolled growth of Third World cities. More often, social and economic consequences of urban housing provision, informal sector growth and the persistence of gender inequalities, among others, tend to be the focus of urbanization and migration studies looking at the consequences of population dynamics.

On the other hand, population scientists, not just population geographers, do not have much of a track record for examining the environmental implications and outcomes of population change in the diverse regional landscapes of our rapidly changing world. Population growth and changes' influences on the dynamics of urban systems, or built environments, may be examined, but population's consequential impacts on rural and biophysical domains are rarely the focus of our interests, unless they are dramatic – depopulation, for example. Yet, there are

still some lightly populated frontier forested regions of the world in which population influx is bringing about major changes in the landscape. These changes include deforestation, new patterns of urbanization, and adaptive land management systems, subjects that are only now receiving the attention they deserve. Researchers at the Center for Institutions, Population and Environmental Change (CIPEC) at Indiana University have found there are definite possibilities that reforestation is ameliorating the rapid deforestation of parts of the Amazon interior (Moran and Brondizio 2001; Moran et al 2002). All the while, population movement, settlement and urban expansion is contributing to the creation of more complex landscapes, and more complex (inter-related) environment-population relationships.

Beyond this recognition of the breadth of research themes in population-environment relationships, one additional reminder needs to be stressed. Today's real and immediate concerns for a sustainable planet and need for a concerted effort to develop plausible environmental management strategies is driven by the growing realization that it is *public health* that is under threat not merely environmental deterioration. Population-environment geographers may therefore have to ally themselves with medical geographers and those in the public health sphere, or at the very least share research ideas and agendas, if this emerging threat to our world's health is to be countered (Ness 1997).

Population Implications of Environmental Change

Reversing the causal direction to examine the environment-population equation brings a number of issues to the fore. Environmental change in general, and climate change in particular, are likely to have significant impacts upon resource distribution and accessibility; the stocks of resources such as water, soil and vegetation will be altered, most probably depleted, but the opposite is possible, and should be examined as an option. Landscapes and their biophysical

character will be altered, and the populations who reside in, or use these environments, will have to adapt their livelihood strategies to cope with these changes (Hunter 2000).

Another set of environmentally induced impacts on rural, marginal or insular populations might not immediately, or automatically, cause migration, but instead bring about other changes when the resident population is rendered immobile, because of their geographical, demographic or socio-economic limitations, or the perception thereof. Staying, despite a deteriorating environment or declining circumstances, while hoping that things will get better, is one possible response to situations of high uncertainty. Examining *why people stay* in the face of deteriorating environmental conditions, should be as much a part of our research agenda, as examining why they leave. Migration requires resources – information, good health, savings, hope - that some of the most vulnerable don't possess: the aged, the infirm, the oppressed or subordinated. We might well focus on these most vulnerable cohorts, to assess their immobility as well as their mobility options, as they adapt to changing local biophysical and environmental circumstances – and brought on by regional and global climate change.

Challenging several of Esther Boserup's (1966, 1981) main tenets on population pressure influences on farming systems, the United Nations University's project on People, Land Management and Environmental Change (PLEC), in which 'agrodiversity' among Third World farmers is investigated, is a notable population-environment initiative that population geographers might join (Brookfield 1995, 2001: Uitto 1995). Importantly, this emphasis on the successful and adaptable, management practices of agrodiverse farmers is not about the farming populations as social systems. Many of the small farmer's methods and practices are found to be innovative, not conservative as Boserup's (1966, 1981) now-dated arguments would have us believe. Importantly, these small agro-diverse farmers plan their activities over long-term

horizons investing in improvements while continuing to produce and experiment with new ideas, test seeds, save germ plasma materials and grow medicinal plants. Investigating and learning from successful farm management's adaptive flexibility in the developing world, is indeed a refreshing change; a new-look, in many ways.

The Nexus of Migration-Development-Environment Relationships

Other migration scholars, population geographers and development studies specialists have produced convincing arguments on the inter-related nature of development and migration. They include Brown (1990), Connell (1990), Hugo (1994), Massey (1988), Papademitriou and Martin (1991), and Skeldon (1997). Indeed, Skeldon (1997: 205) concludes in his impressive work that "migration *is* development."

A three-way set of inter-relationships, with migration (and migrants) contributing or not to development, and migration (and migrants) and its/their developmental consequences causing environmental change is a much more challenging nexus of spatially dynamic forces and outcomes, however. There have been calls for demographers to examine the environmental consequences of population growth and change and migration in developing and developed countries (Pebley 1998). Within many areas of development geography, migration and migrants figure prominently as essential aspects of a sustainable societal solution. Migration and circulation, migration networks, overseas enclave communities, remittances, return migrants, even "transnational communities": all these features of human mobility have their place in tomorrow's development scenarios. Some might have the potential to positively contribute others may indirectly contribute, while some migration and circulation processes may be counter-productive at best, and negative and harmful in their effects (Connell and Conway 2000).

If we are to investigate migration-development-environment relationships, and come to grips with the complexity of interactions therein, then I firmly believe that we must focus on migrants as human agents rather than migration the process, the mass movement, or the numerical account. Migration and circulation flows, population concentrations, rural depopulation exoduses, and transnational networks or diasporas in their spatial and temporal frameworks, might inform us of the complex character of the mobility patterns. However, examining their direct and indirect consequences for local, regional or national development or for environmental sustainability and change requires us to investigate migrants (and non-migrants) - as individuals, in families and in communities - as human agents.

It is people's influential behaviors, after all, that determine land use decisions and management practices, the choice of residential environment, the decision on how remittances are disbursed, and the level of community activism that ultimately influences policy. Some initial work has begun investigating migrant decision-making and its influences on biodiversity and land use change in Guatemala and Mexico (Gurri and Moran 2002), but this "multi-method" approach among population-development geographers is just beginning (see Steinberg and Taylor 2002; Taylor 2003). And, in addition to multi-method advocacy (Graham 1999), there have been calls for migration researchers to embrace ethnographic methods (Mc Hugh 2000), treat personal narratives as interactive texts (Miles and Crush 1993) and listen more attentively to "migration stories" (Lawson 2000).

Joining this advocacy, I am persuaded that a focus on migrants' relations with their environments and their interactions and behaviors with their home and destination societies is going to realize more informative answers to the questions we raise about how the complex interactions between migration, development and the environment play out in real geographic

time and space. For example, it may well be the case that a relatively small number of in-migrants or return migrants, rather than the existence of a numerically large return migration flow, effectively mobilize their human and social capital to contribute to, and participate in, local development, which is environmentally friendly as well as sustainable (Conway 1999/2000; Gmelch 1992). Or, they energize a community into activism to thwart an environmental threat to their homes (Berman Santana 1996). In a rural community, a few migrants and their dependents, may pave the way to changes in farm management and land use that instigate widespread environmental changes; both positive and negative impacts being possibilities (Taylor 2003). Recognizing the influence of groups of people, even a select set of individuals, and recognizing the power and creativity of human agency of people, however powerless their situation might be, is important if we are seeking answers to questions about the complex interrelationships between migration, sustainable development and environmental change in "home-places," or even "away-places."

Conclusions

The overwhelming power of global-to-local influences in today's world means we are always going to have an inter-play of structural and agency factors to deal with in our population-environment research agendas (Giddens 1984, 2003). Despite the dominance of global capitalism and its macro-structural forcefulness, being part of population geography's future is still going to be an enjoyable enterprise, because the human and environmental complexity and dynamism of the systems we examine challenge us. Population dynamics, environmental change and sustainable development are extremely important inter-woven dimensions, but our knowledge about their inter-relationships is limited. Migration-development-

environment relationships are aspects of our rapidly changing world that demand closer examination and attention, but to date, have rarely been part of the research agenda of population geographers.

Today's imperative to find paths to human and environmental sustainability is even more apparent, because it is our public health that is under threat not just environmental deterioration. Population-environment geographers, therefore, have common cause with medical geographers and those in the public health sphere, as well as environmental scientists, development geographers, political ecologists, among others. Population geographers can always go it alone, but joining others and becoming part of inter-science and post-disciplinary initiatives is a scholarly path I would heartily recommend. I'm sure, Glenn Trewartha would too.

The Post-Trewartha Boom: The Rise of Demographics and Applied Population Geography

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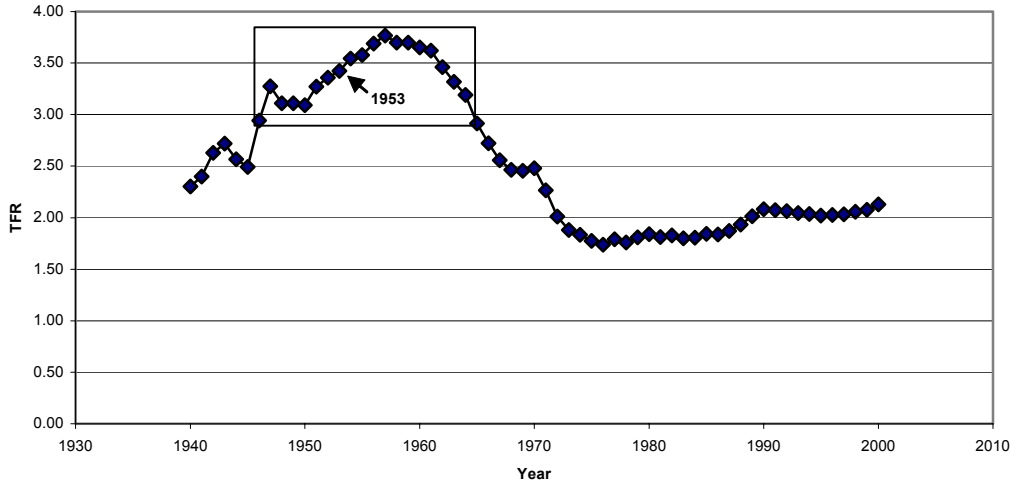
Introduction

During the year of Trewartha's AAG Presidential Address, 1953, the American Post–World War II baby boom was zooming into full swing. In 1953 the Total Fertility Rate was at 3.42, on its way to cresting, four years later, at 3.77 (Figure 2). Approximately 4 million American babies were born that year[7] – including the author of this paper. It was the fate of only a miniscule fraction of those born that year to grow up to be population geographers.

Figure 2. Total Fertility Rate of the United States, 1940-2000



[7] Not adjusting for under-reporting, the total number of registered live births in 1953 was 3,902,120. The annual number of births would not dip below 4 million until 1965 – the year after the one conventionally taken to represent the end of the boom. Despite substantial additions to the country's base population, the 1953 absolute number of births would not be exceeded again until 1988. National Center for Health Statistics, "Live Births by Age of Mother and Race, United States, 1933–98," http://www.cdc.gov/nchs/data/natality/mage33tr.pdf (as of October 10, 2003).

During the lifetime of the 1953 baby-boom cohort, however, we have seen population geography develop from Trewartha's "call" into a bona fide "calling." Today, career opportunities in population geography have never been more abundant. Right around the time the baby boom births were ending in 1964, the word "demographics" would enter the English-language lexicon (in 1966 according to *Webster's 9th New Collegiate Dictionary*). Subsequently, extraordinary advances began to be made in computer technology, and thence along would come Geographic Information Systems. Today, those who receive their technical training through geography departments are advantageously positioned for the panoply of careers in the business or governmental realms where demographic analysis is now in high demand.

Population Geography's Leg to Stand On

Population geography has not grown, as Trewartha had hoped, into the third leg of the geographer's stool. Today it is not on an equal footing with physical and cultural geography. In terms of the scientific stature of our discipline, however, it asserts an influence much out of proportion to the small subpopulation of academicians who self-identify as population geographers.

Trewartha staked a claim for a population geography encompassing a broad terrain and involving a bifurcation of what is now considered the singular broad realm of *human* geography. Although failing to legitimatize control of this claim, and never reaching the putative trinity-like stature Trewartha ascribed to it, population geography may be uniquely positioned as a result of its last 50 years of development. By virtue both of its intrinsic nature and of its applied relevance, population geography holds a high prospect above the recent bloody battlegrounds of epistemological debate characteristic of many other branches of the discipline. Some decry our

subfield for being frustratingly resistant to the isms buffeting many of the other aging bodily parts of the "queen of the social sciences."[8] Others, however, take delight that population geography refuses to eschew a number of old-fashioned virtues. Population geography pedagogy includes a tradition of respect for scientific rigor and conceptual clarity, a pride in objective empirical measurement, and an almost obsessive concern with the intrinsic nature and quality of numerical data.

Recently there has been considerable attention paid to broadening the basic conception of the subfield. Though the motivations are rather different, this concern is hardly new. Twenty years ago the author took it upon himself to organize the first of the AAG's Population Specialty Group 'Major Directions' lectures. One of his goals was to bring about the more active involvement in population geography of some of the then leading scholars of the discipline who had hitherto not identified with the group.

In trying to woo John Fraser Hart for one of the early sessions, he was initially rebuffed with the stern admonition: "Why, Dave, those so-called population *geographers* are little more than demographer wannabes!" Fraser's own (1982) AAG Presidential Address had been entitled "The Highest Form of the Geographer's Art," a clarion call for a return to the precepts of regional geography, to the discipline's intrinsic strengths in identifying interrelationships and achieving synthesis, and to tolerance for multiple methods of analysis. Ultimately Professor Hart did deign to participate in one of the first sessions of the Population Geography Specialty Group. And he engaged the membership in a lively joust about the relationships of demography, population studies, and population geography. Although forcefully stating his belief that

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[8] Boulding (1966, p. 108): "Of all the disciplines, geography is the one that has caught the vision of the study of the earth as a total system, and it has strong claims to be the queen of the social sciences."

population was perhaps the key *forcing* variable in geographic research, he argued that population geography and those at that time calling themselves population geographers were giving wholly inadequate shrift to the place-based traditions of the discipline.

Roughly 50 years before Trewartha's 1953 speech, Paul Vidal de la Blache was writing that "geography is the science of places, not of men." One of the key attributes of population geography is that it is intrinsically all about *both* places and men (not to mention, women!). In population geography research we study the aggregation of the critical demographic events of the life course as they occur across space. Some of us are more inherently fascinated by the matter of how those events aggregate across places – in perhaps the more traditional demography side of population geography – whereas others are more keenly concerned with the people side of population geography.

Whenever one is asked to participate in a forum such as this, the tendency is always to engage in a little advocacy for one's own current research modes and perspectives. Indeed, it has been said that an academic is someone with a congenital inability to distinguish between 'quality' and 'what I do.'

This short essay is not intended as any such advocacy enterprise. Because the author was not born until 1953, he would come into geography as a flower child of the quantitative revolution – still in high school in the college towns of Berkeley and Ithaca in the 1960s (Plane 2003). As such, his has largely been a 'let a thousand flowers bloom' mindset about recent epistemological debates. Rather than riding forth to do battle on the now no longer so isotropic plains of geographic thought characteristic of his own grad school days when the (quaintly named) quantifiers dominated the disciplinary discourse, he prefers to spend his scant time on the surface of the earth mucking around in the morasses of real population data that get produced

at the aggregate, geographic place level. (He does, however, hope there will always be room for a few good Ravensteins within our subfield.)

Rather than rail against forms of scholastic exercise attractive to others, (but which seem jejune in comparison to the exquisite joys of pure exploratory data analysis) he'd like to indulge in a few personal observations that have occurred over the course of his own rather brief population geography career: a career that began at about the mid-point of the post-Trewartha period.

New Population Data Sources and their Implications for Demographic Analysis

The author's original training was in transportation modeling. Never having had the benefit of a formal class in population studies, demography, or, for that matter, anything officially dubbed 'population geography,' his first real exposure to the subfield's subject matter was when at the dissertation stage of his graduate career he set off to participate on a research project based at the U.S. Census Bureau. There, wandering the endless linoleum halls inside the Bureau's vast headquarter barracks in beautiful downtown Suitland, Maryland, he would learn his 'population geography,' on the job, as it were.

That was around the time of the 1980 decennial census. As an already devout geographer – lacking only in knowledge of population analysis – he was disillusioned to learn that, to the lifers at the Bureau, 'geography' meant essentially nothing more than the spatial units that are used to tabulate data. A putative Geography Division existed off in some distant, frozen universe: in a separate federal office building and many long linoleum hallways distant from the Population Division, which was where the author's project was ensconced amidst a bevy of sociology-trained demographers. There, in the womb of most of the population information that

gets disseminated to the nation, seldom was heard the "geography" word. When spoken, it usually came in the context of someone proudly proclaiming: "Oh, I did *the geography* on that survey." It took the author a while to comprehend that what the bureaucrat was trumpeting was his or her creation of an entirely new (and most likely bizarre) set of spatial units guaranteed to make it impossible for anyone to ever match the information from that particular survey with any other already existing or future data.

In the subsequent 20 years, the role of geography at the U.S. Census Bureau has changed, and changed rather profoundly.

Last year, a couple of years past Census 2000, the author decided to take a sabbatical leave. And, just for kicks, he decided to retrace his academic roots, once again entombing himself in those same endless linoleum hallways of Federal Office Building 3 in the Suitland Federal Center. Population Division Chief, John Long, extended to him the unofficial Bureau job title: "Migration Gadfly."

The date of the author's second day back at work as, once again, a 'sworn' Census Bureau researcher, was 9/11. Amidst the anthrax scares and the many other zany aspects of life on the inside of a federal bureaucracy, he began to notice some major changes that had taken place in the role of geographers and geographic thinking within the Bureau.

Thanks in no small part to AAG's Population Specialty Group (PSG) Past-President Jim Fitzsimmons, who was brought in to head up the redefinition of metropolitan areas project, the Population Division is now infested with quite a number of young, enthusiastic population geographers. These particular troglodytes appear to be having a major impact on the corporate culture of the Bureau, and, increasingly, on the fundamental data and data products that American academic researchers, businesses, and public agencies will henceforth be provided.

The innocuously named 'Geographic Distribution Branch' (now under the direction of a former David Harvey student – Michael Ratcliffe) is proving to be a principal beachhead for change within the U.S. Census Bureau. Within months of the first release of Census 2000 short form data, thanks in part to another special academic sabbatical project sponsored by the Bureau – that of Penn State's Cynthia Brewer – the first atlas produced by the Bureau since the Pre-Trewartha era hit the web and the shelves (Brewer and Suchan, 2001). And shortly a much more ambitious, comprehensive national statistical atlas is to be published by the Branch.

When first envisioning the Geographic Information Systems chapter for the textbook *The Geographical Analysis of Population: With Applications to Planning and Business* (Plane and Rogerson, 1994) it seemed highly perplexing that GIS was so slow to catch on within Population Geography. Maybe it was just the resistance of us old-school demographer wannabes, but with a new generation of graduate students populating jobs in the Bureau and elsewhere in the applied population realm, that is finally changing – and changing most rapidly.

One of the big sweeping changes underway in population analysis is the shifting fundamental nature of our basic secondary data sources. Increasingly in the future we shall no longer be constrained to the traditional decadal 'snapshots' afforded by large-scale censuses. Rather we should witness a progressive adoption of more 'geographical' and time-series ways of analyzing data as the basic collection mechanisms shift toward continuously available administrative records and larger-sample longitudinal surveys. In the United States, if and when the annual American Community Survey (ACS) is fully deployed the intention is to have it replace the once-in-every-ten-years-only 'long form' questions of the decennial census. ACS is designed to provide continuously measured rolling averages for the full panoply of demographic and housing indicators now available only from decennial censuses. Such changes in data

collection methodology will likely revolutionize the business of 'demographics' and the uses of population data at the local scale. ACS data as well as administrative record data sources (which do not suffer from constraints on sample size) can provide information *for all the same fine-mesh geographic units for which now only census data exist.*

An observation of my Census colleague, geographically minded rural sociologist Marc Perry, is that internally at the Bureau, up until now, the decennial census data themselves have been viewed as somewhat of an aberration from the standard mode of doing business. Day-to-day, year-to-year life within the Pop Division has been primarily occupied with producing and analyzing the relatively small-sample Current Population Survey (from which it can be a stretch to break some data down to even the four-regions scale). A fundamental change in institutional culture should take place once ACS starts providing data with census-tract-level geographic detail on an annual (well, 'rolling annual') basis. Attention will shift from monitoring temporal change at the national scale to analyzing geographic variability and shifting patterns of demographic processes – precisely the research realm of population geography and precisely the kinds of questions that require the skills of those trained in spatial data analysis and the use of geographic information systems.

In research methods courses students are not taught to begin projects by going out to see what data are available. But the recent and pending changes in the kinds of demographic data coming on-line are going to imply fundamental changes in how we think about population phenomena in the future. The 'geographic method' is going to come more and more into the fore. Population processes are themselves inherently geographical with many of the truly interesting questions concerning the vast differences that exist in how such processes play out in the context of place.

The changing sources of population information, too, are going to move our thinking about demographic data around more in line with the economist's time-series perspectives. Imagine a future TV commentator discussing the direction of change of most recently released leading demographic indicators for one's local community. Wouldn't that be a pretty good thing to penetrate into the popular consciousness?

The Population Geographer's Job Market

The impact of the baby boom, which was approaching its zenith at the time of Trewartha's presidential address in terms of the birthing of babies, would really be felt when the boomers came of age in the 1970s. This would lead to a substantial heightening of interest in the role of demographic variables in affecting everyday life, as attested to by, for example, the launching of *American Demographics Magazine* in the late-1970s, Easterlin's 1980 *Birth and Fortune: The New Law of Numbers,* and Weiss's 1988 *The Clustering of* America. Since Trewartha's speech, job-market prospects for persons trained in population analysis have vastly increased in both the private sector, with the coming of an appreciation for "demographics" in the business world, and in the public sector, which a much greater appreciation of the role of demographic change and geographic variability in affecting policy implementation and program administration.

As originally conceived in the curriculum of Geography Departments during the 1960s, the standard format for population geography courses focused on such global or national scale topics as world population growth, hunger, the sustainability of world agriculture, and fertility policies. The reality of the modern applied geography job market, however, is that very few of our students will secure employment as United Nations population analysts or national

population policy advisors. Rather, most of the jobs now available to our graduates are to be found at the local and urban scale. By 1986, in fact, the 3rd edition of Weeks' highly successful introductory population text contained an excellent concluding chapter on "Demographics" that included a subsection headed "Should I Pursue a Career in Demographics?" Alas, however, the sales of another book targeted at students affirmatively answering that question (Plane and Rogerson 1994) would illustrate that most geography departments have been slow or resistant to signing onto an applied population geography program. Most population geography courses still are not focused on teaching practical techniques of analysis and on local scale business and planning applications. There is still a need to reorient our thinking about population coursework in order to "think globally, but act locally."

Population geography has remained a much smaller subfield than it might otherwise have become had the discipline been quicker to adapt to new job market realities. Enrollment trends in my own department are quite revealing of the current student appeal of programs of study focused on professional skill development for locally available careers. Whereas University of Arizona's traditional Bachelor of Arts in Geography program currently registers approximately 60 "majors" (which is probably not an atypical count for an American university), our other, and more specialized degree – a Bachelor of Science in Regional Development – has swollen to enroll more than three times that number of undergraduate students. This applied geography program (originally begun during the Department's formative years in the University of Arizona's College of Business and Public Administration) is a concentration involving coursework in the economic, urban, and population subfields, plus some basics of urban and regional planning, along with a substantial dose of techniques (statistics, GIS, and remote sensing). The major prepares students for careers in such fields as commercial real estate, local

economic development, location analysis, and GIS, as well as sending a number of its graduates on to professional Master's programs in planning.

It is ironic that the demand for persons trained in the types of analysis in the forefront of geographic research during the quantitative revolution of the 1960s and 1970s is only now being fully proved – at a time when the center of the field's pedagogic thought strays increasingly farther away from such professionally productive pastures.

Conclusions: The Next 50 Years

The author may or may not get the chance 21 years hence to take a Sabbatical at the U.S. Census. Supposedly in the interim the Bureau's new building will have opened. But he is willing to bet that well before 2022, population geography, in all its many guises, and with the help of the next cohort of population geographers, is going to have inalterably shifted the foundations upon which *all* applied population analysis rests.

And what about 50 years from now, when Professor Pandit's successor (some young aspiring egghead) puts together an AAG Population Specialty Group Major Directions Lecture titled "100 years after Trewartha"? By that time most all us population geographers who began our life-courses popping from our mother's wombs in the boomer year of 1953 will have experienced, first-hand, that mother-of-all transition probabilities that looms at the end of the demographic rainbow. In the meantime, however, population geography will have grown even bigger, ever stronger, and even and ever more relevant to the daily lives of people in local communities all across our planet.

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