Polar bears … one of a (created) kind

David J. Tyler

A Grolar or a Pizzly?

Jim Martell wanted to hunt polar bears. So intense was his enthusiasm that he spent $50,000 for a permit, a guide and travel. The hunt took them out on the tundra in the northwest territory of Canada. The first bears they saw were far away in the distance, so they kept on searching. At last the opportunity came, although the polar bear in Jim's sights looked a bit strange. It did not have white fur, but was more of a 'dirty blond'. Jim got the prey he wanted.

It was then that problems started. Jim was planning to take the skin back to his home in Idaho. But the question was raised whether the bear was actually a hybrid between a polar bear and a grizzly. News reached the Department of Environment and a wildlife officer came to confiscate the hide. If it was a grizzly, Martell could be in trouble as his permit was not for hunting grizzlies! He found himself facing a fine of $1,000 or a year in jail.

DNA tests revealed that the bear was indeed a hybrid between a polar bear and a grizzly.[1,2] Local experts have expressed surprise because whilst hybrids have previously been reported in zoos, this is probably the first case ever seen in the wild. Normally, polar and grizzly bears are adversaries and this keeps them at a respectful separation. Furthermore, polar bears mate on ice and grizzlies mate on land. So, as a biological phenomenon, this hybrid is a real surprise.

Foundations in theory

Biologists have inherited a classification system originally developed by the Swede Carl Linnaeus (1707-1778). He devised a hierarchy of descriptive categories. Bears are *chordates* (phylum), they are *mammals* (class), and they are *carnivores* (order). These are the higher-level categories in the classification scheme. Bears all belong to one family, the Ursidae. There are several genera, with each genus having one or more member species.

Phylum: *Chordata*
Class: *Mammalia*
Order: *Carnivora*
Family: *Ursidae* (The bear family)
Genus: *Thalarctos*
Species: *maritimus* (Polar bear)

Linnaeus was a creationist who understood God to have created animals and plants to reproduce after their kind. In his youth, he thought that the 'kind' could be equated with the species level of classification, but later in life he recognized that speciation had occurred and that the created kind must therefore be represented by a higher level of the hierarchy.

The polar bear is classified as *Thalarctos maritimus* and the grizzly is a sub-species of the brown bear: *Ursus arctos horribilis.* The relationship is expressed diagrammatically in Figure 1.

Are species real? Darwin thought not – he envisaged that species were just in a state of transition from ancestral to descendant forms. They are just snapshots of a continuum. And because everything is in this state of transformation, Darwin saw no need to spend any time on defining what a 'species' actually is.

However, evolutionary biologists today tend to think that there is indeed something real and tangible about species. Ernst Mayr, for example, coined the Biological Species Concept. In this definition, species are groups of actually or potentially interbreeding natural populations, which are reproductively isolated from other groups. The concept of 'reproductive isolation' is very pronounced: theoretical considerations demand that a branching event takes place between two populations of organisms and that thereafter their genetic histories are separate.

People have known for years that in zoos, hybrids have been reported between the brown bear and other bear species, including the American black bear, the polar bear and the Asiatic black bear. Zoos, however, are unnatural places, where animals that normally do not have any contact are housed together.

Clearly, for a polar bear (genus *Thalarctos*) to interbreed naturally with a grizzly (genus *Ursus*) is not just a rare event that can be passed over as an anomaly. The fact that it has happened at all implies that the Biological Species Concept does not accurately represent the real world. Indeed, the hybridization data can be interpreted as evidence for an essential unity despite diversity. The essential unity can be explained in terms of all these species belonging to the same created kind.

In reality, hybridization in nature occurs far more frequently than Darwinists have been prepared to admit. Whilst most of the documented cases have occurred in zoos, there are nevertheless many indications of natural hybridization, particularly in birds.

Distinctive bear designs

At this point, it is worth reminding ourselves how different these two species are. The grizzly bear is an omnivore with a diet that includes roots, fruits and leaves. Its dentition is suitable for crushing plant material, with teeth having flat surfaces. It has long claws that are adapted for digging. When the weather is cold, it retreats into a cave and hibernates. It takes several weeks to activate the switch between normal and hibernate mode.

Polar bears are superbly equipped for life in the Arctic freezer. Their fur has no pigment, giving camouflage in the snow. They have a double layer of fur: an undercoat made up of fine white hairs, and an outer coat of long guard hairs. These guard

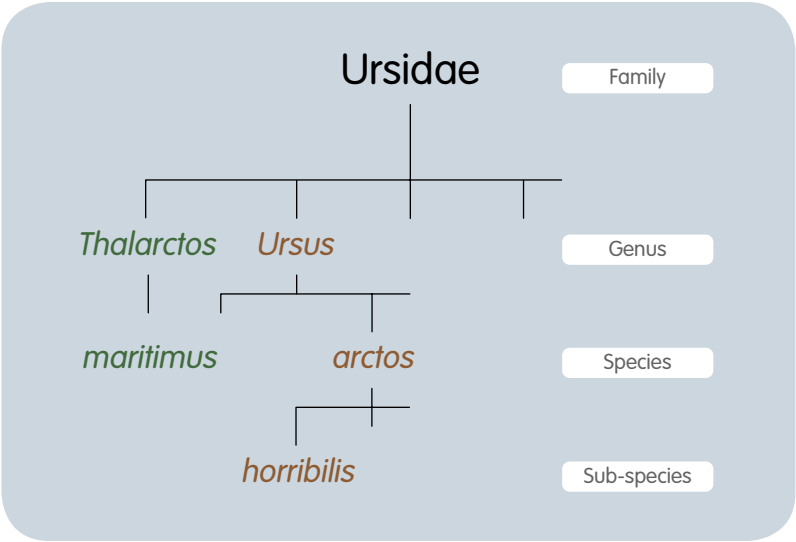

Figure 1. Classification of the polar bear *(Thalarctos maritimus)* and the grizzly bear *(Ursus arctos horribilis)* within the Linnaean scheme. (The details are subject to change).

Polar bear mother and cub, Baffin Bay, Canadian Arctic. Photo © Peter Van Wagner, www.istockphoto.com.

hairs are hollow; helping to promote buoyancy in swimming and improving heat insulation. The pelt, together with 10 cm of blubber, keeps the animal comfortable in the harshest environments. They eat seal meat almost exclusively and have an extraordinary ability to smell prey from a distance of 20 miles. Their long snout and neck allows them to probe ice holes and pull out seals. Fluffy paws act as snowshoes and short solid claws help grip the ice. Partial webbing between the toes helps in swimming. They can switch rapidly from alert hunter mode to hibernate mode. During the summer, when access to seals disappears, the polar bears eat very little, slow their heart rate, reduce body temperature, stop urinating and stop defecating. Yet, if food is found, they seem to be able to turn a switch and get back to normal mode in an instant. Their dentition is that of a carnivore, with sharp carnassial teeth for shearing off meat, and canine teeth that are long and also sharp. There is a very large stomach capacity, to enable them to gorge themselves with food when it is plentiful.

Adaptation by natural selection?

According to Darwinism, these differences are the product of natural selection acting on natural variations (mutations). Thus, Dr Chris Bartos, who is responsible for polar bears at Baltimore zoo, is quoted (Angier, 2004) as saying: "They are exquisitely adapted for life in one of the harshest environments on Earth. They are super-specialized members of the bear family, a magnificent example of natural selection at work."

In Darwin's model of transformation with branching speciation, what we are seeing today is a snapshot in time of two populations that have diverged from a common ancestor that lived during the Quaternary glaciations. Since the grizzly is a sub-species of *Ursus arctos,* the implication is that further branchings have taken place after the polar bear/brown bear separation.

The Darwinian gradual transformation model has received a severe knock from evidences of stasis (stability) that typically characterize species. Such evidences have been gathered by advocates of the theory of Punctuated Equilibrium (PE). The fossil record does not bear witness to slow transformation over time, but rather to sudden appearance, and then relatively minor tweaking of shape and size prior to extinction. The architects of PE were Stephen

Jay Gould and Niles Eldredge who brought the issue to the fore in 1972. They specifically contrasted Darwin's vision of gradual 'stately unfolding' with their own perspective of long periods of stability of form, punctuated here and there by rapid speciation events in isolated sub-populations. Whereas natural selection acting on natural variations was Darwin's mechanism for his theory of transformation, it is (according to PE) applicable only to the periods of stasis. Some other mechanisms must be involved to explain rapid speciation.

Is this relevant to the bear family? The answer would appear to be 'yes'. The limited fossil record shows stasis of different bear species, and we are now getting DNA studies of preserved soft tissues that strengthen this conclusion. Thus, Barnes *et al* (2002) say: "The major phylo-geographic changes occurred 35-21 ka B.P. *[thousand years before present],* before the glacial maximum, and little change is observed after this time." Matheus *et al* (2004) looked at the mitochondrial DNA in the bones of a brown bear reputed to be 26,000 years old and found it similar to that of brown bears today.

So, if PE applies to the bear family, it is not appropriate to attribute adaptation to natural selection acting on natural variations. Some other mechanisms must have been involved. Furthermore, if hybridization occurs between a polar bear and a grizzly, the speciation that has occurred in the past has not overprinted the reproductive pathway that is still shared by both species. Add to this the other documented hybrids involving bear species and the picture gets really interesting.

Biology creation-style

It is at this point that a creationist perspective on biological variation becomes a welcome breath of fresh air. Creationists do not set out to explain the origin of complexity by the action of natural processes. Rather, they recognize the hand of our Creator in designing animals and plants to reproduce "after their kind" (Genesis 1:26). Certainly, since the time of Linnaeus, creation-orientated biologists have generally recognized that the ability to adapt to different environments has been an ingredient in the created order. So the challenge is to explain today's species as descendants of the original created kinds. Research has led, at least for animals, to locating the 'created kind' typically at the family level of classification (Scherer, 1993). This implies, in the case of bears, that the Ursidae species are all descended from one created kind represented by two animals on the Ark. The evidence for this has been discussed previously by the author (Tyler, 1997).

Hybrids, instead of being anomalies of no great significance, become very important evidences of kinship: the ability to reproduce "after their kind". This is true whether the hybrids are fertile or infertile, or even if the developing embryo proves not to be viable. Polar bears can hybridize with brown bears because both these species belong to the same kind and are descended from a common ancestor.

The rapidity with which specialized adaptations occurred after the Flood is a consequence of created

Grizzly mother with her cub standing in a river filled with red salmon, Katmai National Park, Alaska. Photo © Vera Bogaerts, www.istockphoto.com.

complexity. We can infer that God created the kinds with adaptation in mind. This is becoming more widely discussed. At the 2006 Creation Biology Study Group Conference, Sanders presented a paper suggesting that adaptive radiations can be considered an inevitable consequence of created complexity, triggered by the opportunities provided after the devastation of the Flood to fill and replenish the Earth.

Postscript

And, by the way, Jim Martell received the hybrid hide back and took it home with him to Idaho. It is a hunter's trophy with a message. "He who has ears to hear, let him hear" (Matthew 8:9). ■

> "The Ursidae species are all descended from one created kind represented by two animals on the Ark . . . Hybrids, instead of being anomalies of no great significance, become very important evidences of kinship: the ability to reproduce 'after their kind'.

Footnotes

1. Strange bear was grizzly-polar hybrid, tests show. *CBC News,* 10th May 2006. http://www.cbc.ca/story/canada/national/2006/05/10/pizzly-grolar-bear.html

2. Hunter shoots grolar bear – or was it a pizzly? *CBC News,* 27th April 2006. http://www.cbc.ca/story/canada/national/2006/04/26/polar-bear-060426.html

References

Angier, N. (2004). Built for the arctic: a species' splendid adaptations, *New York Times,* 27th January.

Barnes, I., Matheus, P., Shapiro, B., Jensen, D., Cooper, A. (2002). Dynamics of Pleistocene population extinctions in Beringian brown bears. *Science,* 295:2267-2270.

Matheus, P., Burns, J., Weinstock, J., Hofreiter, M. (2004). Pleistocene brown bears in the mid-continent of North America. *Science,* 306:1150.

Sanders, R.W. (2006). Are adaptive radiations characteristic of the history of life? *Occasional Papers of the BSG,* (8):8. http://www.bryancore.org/bsg/opbsg/008.pdf

Scherer, S. (1993). *Typen des Lebens.* Pascal-Verlag, Berlin.

Tyler, D.J. (1997). Adaptations within the bear family. *Creation Matters,* 2(5):1-4. http://www.creationresearch.org/creation_matters/97/cm9709.html