

Comments on proposed Revisions to Kansas Science Standards Draft 1 With Explanations

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The proposed revisions suffer from two major inaccuracies. The first is a confusion between methodological naturalism and naturalism itself. Methodological naturalism is simply the search for natural explanations for observed phenomena. It does not entail naturalism, commonly known as materialism, nor does it rule out the existence of supernatural factors that science cannot address. Counter to what is asserted on page 2 of the proposed revisions, this search for natural explanations does not rule out criticism of Darwinian evolution as long as such criticism is restricted to natural processes. Nor does the search for natural explanations imply that humans “lack intrinsic purpose”, as stated on page 2. Assertions about intrinsic purpose are not within the scientific domain. Similarly, the claims on page 4 are incorrect. The use of methodological naturalism to search for natural explanations does not rule out the philosophical or religious belief that the history of life “is at least partially guided” (p. 4). The conclusion of a recent paper on this topic is relevant here.

“Anti-evolutionary writers have attempted to coop the term ‘design’ so as to make it incompatible with common descent. They have done so by blurring the distinction between design as an intention, on the one hand, and the execution of that intention on the other. Life may well have been ‘designed’ in the sense that it was divinely intended for a specific purpose. Nevertheless, even if this is the case, the scientific evidence overwhelmingly supports the conclusion that the execution of that intention has been through the process of common descent. Students must be made aware of this fact and should be allowed to draw their own conclusions about whether or not common descent represents the execution of a supernaturally intended design, an issue that is not appropriately decided in a science classroom.” (p. 755)

“The Fact of Evolution: Implications for Science Education”, *Science and Education*, 2003, vol. 12, pp. 729-760. James R. Hofmann and Bruce H. Weber)

This reference to common descent involves the second major inaccuracy in the proposed revisions, a confusion between the well supported fact of common descent and the theoretical explanation for this fact based upon genetics and natural selection. The worst examples of this error are on pages 15-17. On page 15 speciation is identified with “macroevolution” which is not the customary terminology used by biologists. More seriously, on page 16 it is stated that the common ancestry of life is “postulated”. Far

from being “postulated”, common ancestry, or descent of life from common ancestors, has been inferred from an overwhelmingly supportive collection of data. The references on page 16 to “discrepancies in the molecular evidence” are misleading in that molecular biologists thoroughly agree that the preponderance of the molecular evidence supports the fact of common descent. Thorough discussion of this issue and the Cambrian Explosion also cited on page 16 can be found in the article noted above.

Similarly, on page 17 it is stated that the extrapolation of microevolutionary processes is the “underpinning” for common descent and that this “extrapolation and the claim of common ancestry of all life forms are the most controversial aspects of current evolutionary theory”. Common descent is sufficiently supported by molecular evidence and the fossil record that it would be accepted by biologists as a fact even if the process of natural selection had not been discovered. Common descent is not controversial within the scientific community. Controversy does exist concerning the mechanisms that result in common descent and students should be made aware of this controversy as long as it is restricted to the natural processes that science is equipped to address.