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*Consequences of an intelligent discussion about design with Darwin: Asa Gray's evolving perspective on teleology and natural theology*  
Alan Love ( University of Minnesota)

The correspondence between Charles Darwin and the American botanist Asa Gray is justly famous, whether it is the letters that publicly established Darwin's priority in the Linnaean Society Proceedings or those about chance and design from the 1860s. Although the latter correspondence is well known, its philosophical significance has yet to be fully recognized. Darwin and Gray persistently juxtapose teleology, design, chance, and accident: "*If I get time to turn it over* I will say a few words on the last chapter of your Orchid book. But it opens up a knotty sort of question about *accident or design*, which one does not care to meddle with much until one can feel his way further than I can" (Gray to Darwin; September 1862). In contrast, contemporary philosophy of biology treats the nature and place of teleological explanation separately from that of chance, randomness, and accident. Very little effort is devoted to drawing out the epistemic connections between these concepts. This situation affords a genuine opportunity to integrate history and philosophy of science inquiry.

The present analysis focuses on how Gray's understanding of teleology and theology evolved as a consequence of his discussion with Darwin, with special attention to the role of Gray's particular religious perspective (Presbyterian Christianity, in contrast to the British Anglicanism with which Darwin was familiar). Two elements of Gray's writing are explored: (1) the interpretive framework used by Gray in his "Structural Botany, or Organography on the basis of morphology" (1879), which is significant given his 1874 Comment, "let us recognize Darwin's great service to Natural Science in bringing back to it Teleology: so that, instead of Morphology versus Teleology, we shall have Morphology wedded to Teleology"; and, (2) Gray's mature perspective on natural theology in his 1880 Yale lectures entitled "Natural Science and Religion". In addition to addressing the historical question of whether the communication with Darwin transformed Gray's thinking about teleology, the significance of Gray's final perspective on natural theology and natural selection for continuing philosophical discussions about biology, theology, and design is considered. (This paper is one part of a larger project in collaboration with John Beatty and Jim Lennox on the conceptual and explanatory connections between the concepts of chance, mechanism, and design within the context of evolutionary biology.)