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Separation of church and space: Religious influences on public support for U.S. space exploration policy



Ioshua D. Ambrosius*

University of Dayton, Department of Political Science, 300 College Park, Dayton, OH 45469-1425, USA

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ABSTRACT

Despite growing interest in the relationship between religion and outer space, the influence of religion on space policy attitudes remains a mostly unexplored topic. This study fills this research gap by treating space exploration as a policy issue for examination by religion and politics theory. It uses data from the General Social Survey and three Pew surveys to construct several logistic regression models. Space policy support, the dependent variable, is operationalized in seven ways as the antecedents of policy views (i.e., space knowledge and interest), actual policy/funding views, and policy expectations. Religion, the key independent variable, is operationalized as belonging (tradition), behavior (church attendance), beliefs, and salience. In addition, one survey permits the identification of the nature of science messages espoused by clergy. The findings reveal that Evangelical Protestants in the U.S. are the least supportive of space policy. However, evidence shows that pro-science messages from the pulpit can change Evangelicals' perceptions of space exploration. The article concludes with calls for increased, concerted outreach to Evangelicals and other religious publics by the space community. These efforts are essential if the American republic will pursue greater space exploration in the near future. Ultimately, religions must ensure their survival by embracing space.

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Space exploration leads directly to religious and philosophical questions.

Carl Sagan [1], p. 63

I'm shocked at the countless hundreds of millions of dollars that have been spent over the years in the desperate and fruitless search for extraterrestrial life ... [S]ecularists are desperate to find life in outer space, as they believe that would provide evidence that life can evolve in different locations and given the supposed right conditions! The search for extraterrestrial life is really driven by man's rebellion against God in a desperate attempt to supposedly prove evolution!

Ken Ham [2].

1. Introduction: religion & space

The United States National Aeronautics and Space Administration (NASA) and the astronomy field as a whole have focused much of their recent space exploration efforts on the search for extraterrestrial life—whether through sending unmanned probes to nearby Mars, listening to radio signals from interstellar space, or scanning the skies for habitable exoplanets [3-5]. The earlier generation of U.S. space policy was motivated instead by efforts to beat the Soviet Union into space to gain the technological and military upper hand. While one can understand how U.S. religious constituents—at least those representing patriotic traditions, including the major branches of Christianity in the U.S.-would support these early efforts, continued support of space exploration for the purposes of scientific exploration alone, and discovering extraterrestrial intelligence and/or finding habitable environments for human colonization in particular, may fly in the face of some religious priorities and believers' understandings of the universe.

^{*} Tel.: +1 937 229 3924. E-mail address: jambrosius1@udayton.edu.

¹ As astrophysicist Neil deGrasse Tyson [6] (p. 5) describes it, "America was spooked into the space race" by the 1957 launch of Sputnik by the Soviets.

For one example, Ken Ham, the controversial creationist founder of Answers in Genesis and the Creation Museum in Petersburg, Kentucky, posted a blog responding to a recent NASA panel discussion where astronomer Kevin Hand exclaimed that, "in the next 20 years we will find out we are not alone in the universe" [7]. Ham, who famously debated Bill Nve "the Science Guy" on the validity of evolution in February 2014, made the above quoted argument that the search for alien life or other habitable environments is pointless because God uniquely created earth and the life found here.² Media accounts immediately reported that Ham said, "aliens probably don't exist—and if they do, they're going to Hell anyway" [9] in response to Ham's [2] claim that, "Jesus did not become the 'GodKlingon' or the 'GodMartian'! Only descendants of Adam can be saved." Science communicator Neil deGrasse Tyson responded to Ham's comments with, "That's messed up" on a Real Time with Bill Maher segment titled, "Heaven Spacey" [10].

While the extent to which the Evangelical Protestant (hereafter "Evangelical") public agrees with Ham on space exploration is unclear from past study, it is clear that many religious leaders from other Christian traditions disagree sharply with him.³ For one example, Vatican astronomer and Jesuit Brother Guy Consolmagno, the recipient of the 2014 Carl Sagan Medal from the American Astronomical Society (AAS), once remarked cheekily that he would be willing to baptize an alien, but "only if they asked" [11,12]. The Division for Planetary Sciences of the AAS remarked that Br. Consolmagno "occupies a unique position within our profession as a credible spokesperson for scientific honesty within the context of religious belief" [12]. Director of the Vatican Observatory and fellow Jesuit, Fr. José Gabriel Funes, further said that not believing that aliens could exist would be like "put[ting] limits on the creative freedom of God" [13].

These divergent views, both within the broader Christian tradition, show that religious individuals-both clergy and laypeople-likely hold a variety of perspectives about outer space, extraterrestrial life, and perhaps space exploration policy in general. To date, limited social scientific study has examined the influence of religion on public opinions related to space exploration policy. This analysis fills that gap. While astronomy is not ordinarily seen as a subject of interest to religionists, the above anecdotes show that religious leaders and probably followers do think about these issues and that their views are informed by their various opinions on scripture and theology. Because we live in a democratic republic, the views of religious publics influence the setting of space policy through elected representatives. If religionists—particularly those making up large portions of the American citizenry-do not support space policy, religion may stand in the way of future space exploration.

This study finds that religion *in general* does not stand in the way of sustained exploration—but that some traditions holding less knowledge of space also give lower support to space exploration and thus require concerted outreach by the space community. In particular, the space community must focus efforts on convincing Evangelicals that space exploration, for means of discovering life-bearing

or sustaining planets or otherwise, does not conflict with their faith and is in their—and the entire human race's—best interest.

2. Religion & space policy: theory & literature

Despite increasing interest in an overlap of religion and space [14–18], religion and space policy is not itself an established area of inquiry. Because space policy is determined by government, it makes sense to import insights from the religion and politics subfield of political science. Political scientists who study religion emphasize the ways in which religion, defined in several ways, influences public opinion and political behavior [19–22]. Several theoretical approaches have emphasized different facets of religion over the years that may prove useful in ascertaining an effect of religion on space policy attitudes.

2.1. Theories of religion & politics

Early scholars of religion and politics in the U.S. during the twentieth century emphasized political divisions between different religious traditions, such as Catholics and Protestants-religious differences that were further confounded by differences in ethnicity and national origin. This Durkheimian approach has been termed the ethnoreligious theory [23]. More contemporary scholarship has argued that, for the most part, the American public has transcended these ethnoreligious differences in the political arena. Instead, differences over traditional (conservative) and modern (progressive) religious beliefs have divided religious traditions and united traditionalists and modernists with their respective counterparts in other traditions. Thus, it is beliefs which matter politically rather than primarily the religious groups to which people belong. This approach is called the religious restructuring or culture war thesis following Wuthnow [24] and Hunter [25], respectively (see Ref. [22]). During recent electoral controversies concerning the culture war and "values voters", researchers discovered a God gap existing between those voters who attend church regularly and those who do not—thus emphasizing a third measure of religion, behavior [26]. Worship attendance is a public religious behavior, while prayer or scripture reading are private behaviors.

Today, the dominant approach to studying religious causes of public opinion, which some label the *religious commitment* approach, emphasizes the potential impacts of all "3 Bs": belonging, believing, and behaving [20,23]. Another conception of religion that goes along with these three is *religious salience*, or importance, sometimes shortened to *religiosity*. Many studies, particularly those performed by researchers working outside of religion and politics, use church attendance, a form of behavior, as a proxy for religiosity (e.g., Ref. [27]). This practice conflates two distinct components of religion. Church attendance stands on its own as a measure of behavior that complements measures of belonging and believing [28].

An alternative theory, called the *social networking* approach, argues that while religious commitment scholarship may find significant effects of the 3 Bs on political opinions and behaviors, this work tells us nothing about the mechanisms by which preferences are conveyed to religionists [20]. A researcher must find a way to control message exposure, perhaps through experimental manipulation, and then measure adoption. Messages can be conveyed to religious publics across several domains: by clergy in churches, by other religious leaders outside churches, and by politicians or other political elites and opinion leaders [20]. These messages may or may not be adopted by individual religionists; and perhaps some types of messages—such as those containing covert "God talk" or displaying decision processes based in prayer and scripture reading—are more effective at shaping some religionists' views.

² See McKay [4] and Vakoch [8] for discussions of the evolutionary implications of discovering life elsewhere in the universe. Virtually all scientists assume that Earth's evolutionary processes also apply to off-Earth sites.

³ Ham is often described as a "fundamentalist" Protestant or "biblical creationist", a subsection of Evangelicalism that interprets the Bible—especially its book of Genesis—very literally. Not all Evangelicals hold these views.

⁴ My use of *religionist* follows the dictionary definition of "a person adhering to a religion" and does not mean to imply any negative connotations that may be associated with this term. I use this term instead of the commonly used *religious believer* because that terminology conflates belonging and beliefs, two distinct facets of religion.

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