



REPLY TO FATTORINI ET AL.:

Children's selected avoidance of wild greenspace is driven by more than cultural factors

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We welcome the response by Fattorini et al. (1), which opens up discussion on the many possible factors influencing how children use their local environments. Fattorini et al. argue that our study (2) fails to test the biophilia hypothesis by leaving untested a possible cultural influence for children to prefer formal gardens over wild and natural spaces. We believe that our conclusion that children's selection of habitats does not conform to the biophilia hypothesis is valid; children did not behave as predicted by this hypothesis, as they avoided the most biodiverse spaces, typically the more natural and wild environments. That current human culture prefers formal greenspace does not detract from this finding. Our view is that cultural influences are one of many factors that have diverted children from innate biophilic preferences.

Under the biophilia hypothesis, we would expect people to preferentially select to be in more biodiverse habitats, which can include both formal, man-made greenspaces, or natural habitats. Gardens, in particular, can be highly variable in the type and quality of nature experience they provide. In our study (2), we test a selection of three types of gardens, ranging from type 1 (high biodiversity value and often "informal" in structure) to type 3 (low biodiversity in comparison with many other formal and natural habitat types) (3). Despite this approach, children selected any garden type above all other habitats. Children's selection of poor-quality gardens over many more biodiverse habitats available clearly does not conform to the biophilia hypothesis.

In our study (2), we discuss various factors that might influence the decisions children make about where to spend time outdoors. Many people indeed show a preference for more formal greenspace, which may in part be a cultural preference for reasons described by Fattorini et al. (1), although children may be more influenced by the familiarity and recreational opportunities provided by these spaces (4, 5). We emphasize the role of parental restrictions in removing children's freedom to access wilder greenspace, instead encouraging them to stay close to home in private gardens. This parental and societal influence may itself be driven by many factors, including culture, threat perception (6), and barriers to movement because of urban design (7). This argument is supported by the finding in our study (2) and in other studies that high numbers of children are actively restricted from visiting many biodiverse greenspaces, and strong selection exists to remain close to home (8).

While we conclude that children's exhibited behavior does not conform to the biophilia hypothesis, this does not mean children are not biophilic, but rather that their ability to act in this way has been curtailed. The many possible reasons for this, including cultural influences, are important topics for further research. We agree with Fattorini et al. (1) that helping children to overcome these influences and improving opportunities to interact with the biodiversity present in urban areas is important to support their well-being and develop a conservation ethic (9, 10).

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