

Response

Brumfiel *et al.* criticize C. Holden's summary (Random Samples, 7 Sept., p. 1301) of our research (1); we welcome the opportunity to respond.

Many studies document men's superior spatial performance (2). In contrast, despite using a measure known to advantage males, we found that women excel on a spatial task mimicking the cognitive demands of plant-food gathering. Brumfiel *et al.* suggest that ancestral sex differences in hunting may be small; however, this is irrelevant to our theory of gathering-related spatial adaptations. What is relevant is whether, statistically, ancestral women gathered more than men. If so, they would be the target of stronger selection for cognitive mechanisms supporting gathering. This sex difference in gathering is universal among described hunter-gatherers (3), and chimpanzee data suggest that it extends back to our pre-hominin ancestors (4).

Citing cultural biases in shopping and cooking, Brumfiel *et al.* present a social-learning explanation for our results. Their theory is contradicted by other studies and our data. First, studies show either no sex difference or a male spatial advantage in nonfood shopping environments (5). Second, counter to the social-learning hypothesis, individual differences in shopping experience, taste preferences, and consumption frequency did not predict spatial performance in our study; women outperformed men controlling for these experience factors. Moreover, both sexes showed better performance on high-calorie food items. This is the signature of an evolved mechanism for efficient gathering, not one socially learned in contemporary environments.

Finally, only a weak commitment to egalitarianism depends on claims of biological identity. The sexes differ. Men never gestate offspring. On average they are larger, less articulate, shorter lived, and better at mental rotation tasks (2,6). Denying these and other differences will not make them disappear. But the science that explores these differences provides tools to combat discrimination. For decades, researchers uninformed about our evolutionary history unknowingly constructed spatial tasks that favor men's skills. It is only when we take seriously men's and women's evolutionary heritages

that we can break through this inadvertent sexism and expose women's unique abilities.

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