

I want (my) children to sleep in a safe place: Experimental analysis of human sleeping site preferences from an evolutionary point of view

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Abstract

Based on evolutionary assumptions of habitat selection and parental investment, we predicted that adults choose sleeping sites (1) in which children have safer bed positions than the adults themselves and (2) in which own children have safer bed positions than genetically unrelated children.

Both hypotheses were confirmed in a questionnaire study ($N = 220$) with floor plans depicting different sleeping arrangements that were varied according to a 3 (number of children: no vs. one vs. two) \times 2 (kinship: own vs. unrelated child) factorial between-subjects design.

1. Introduction

Initial empirical research on sleeping site preferences from an evolutionary perspective found that humans prefer sleeping sites that (1) enable fast recognition of potential aggressors and (2) give a lying person maximum time to react to aggressors by optimizing the distance to possible entrances (Arnold, Stich, & Spörrle, 2005; Spörrle & Stich, 2005). Moreover, there is first evidence for the cross-cultural universality of these preferences (Stich, Spörrle, Binsler, & Försterling, 2007). These findings are in line with the assumption that humans have an evolved preference for sleeping sites that maximize the chances of surviving possible nocturnal assaults. Because children are less able to defend themselves against aggressors than adults, the state of sleep is more dangerous for them than for adults. Based on this assumption, we predicted that adults give children safer sleeping sites. Furthermore, we predicted that to maximize the survival of their own genes, adults assign safer sleeping sites to their own children than to genetically unrelated children. In our study, we tested these hypothesis by focusing on the assignment of the most unsafe sleeping place in a room. Our hypotheses were:

Hypothesis 1: Adults choose the most unsafe sleeping site for themselves with a higher probability if a child is present than when no child is present.

Hypothesis 2: If an adult has to assign sleeping sites to himself, his own child, and a genetically unrelated child, the unrelated child gets the unsafe place with a higher probability than the own child.

3. Results

Hypothesis 1:

In the experimental scenarios with children, respondents assigned a higher rank to bed arrangements in which they slept at the entrance ($M = 1.82$, $SD = 1.19$) than in the scenario without children ($M = 2.50$, $SD = 0.76$, $p < .001$). Likewise, they chose the floor map showing their own bed at the entrance with a higher probability in the scenarios with children ($M = 7.26$, $SD = 2.57$) than in the scenario without children ($M = 3.86$, $SD = 2.99$, $p < .001$, $d = 1.02$).

Hypothesis 2:

In the scenario with an own and a genetically unrelated child, the bed arrangement with the unrelated child at the entrance received higher rankings ($M = 2.59$, $SD = 1.04$) than the bed arrangement with the own child at the entrance ($M = 3.41$, $SD = 1.30$, $p < .01$). An analysis of the probabilities showed that the bed arrangement with the unrelated child next to the entrance was chosen with a higher probability ($M = 6.02$, $SD = 2.86$) than the bed arrangement in which the own child slept next to the entrance ($M = 5.14$, $SD = 2.99$, $p < .05$, $d = 0.80$).

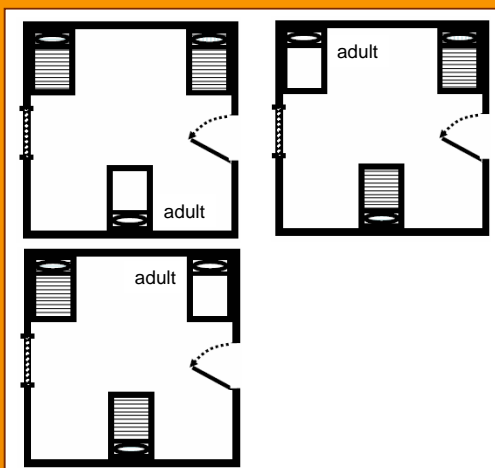


Figure 1. Bed arrangements of the experimental condition without children.

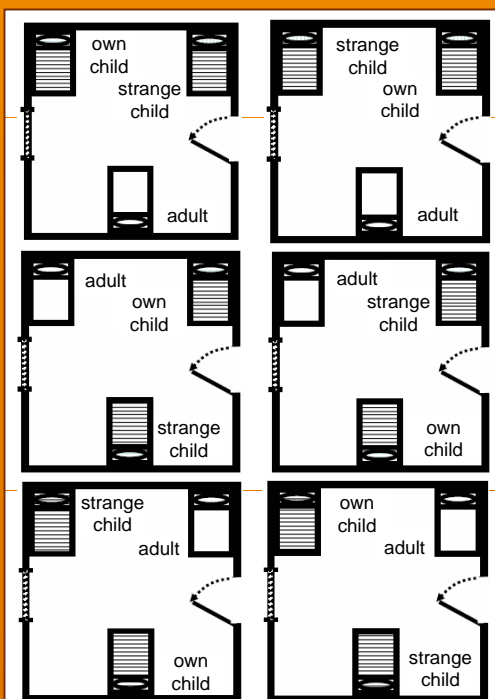


Figure 2. Bed arrangements of an own and a strange child.

2. Method

Sample: 220 respondents (15 to 65 years, $M = 26.45$, $SD = 7.66$, 50% female), randomly assigned to each of the six experimental conditions.

Independent variables:

Number of children: no vs. one vs. two children
Kinship: own child vs. genetically unrelated child
The experimental condition with two unrelated children was not applied.

Material and procedure: Respondents were asked to imagine to stay overnight at a motel (1) alone, (2) with an own child, (3) a genetically unrelated child, (4) two own children or (5) an own and an unrelated child. They were then shown either three or six different floor plans (see Figures 1 and 2). Each floor plan contained three beds. Respondents in each experimental condition were presented with all possible sleeping arrangements and asked to indicate the probability with which they would choose each one. In addition, we assessed which of the persons described in the scenario was assigned to which bed. A pretest ($N = 160$) showed that the bed at the entrance was regarded as the most unsafe sleeping site (mean rated safety = 4.01, $SD = 2.72$), and as significantly safer than the other two beds ($M = 5.64$, $SD = 2.54$; $M = 6.81$, $SD = 2.47$, both $ps < .01$).

Dependent variables:

- Probability of choosing each of the bed arrangements, measured on a 10-point-scale (1 = "completely improbable" to 10 = "very probable").
- Ranking of the bed arrangement according to the rated preference, coded by ranks 1 to 3 (three persons) or 1 to 6 (six persons), respectively.

4. Discussion

The analyses of both dependent variables revealed the predicted effects: (1) Respondents chose the unsafe bed position at the door for themselves with a higher probability when a child was present than when they were alone. (2) The most unsafe bed position (at the door) was assigned to genetically unrelated children with a higher probability than to own children.

Literature

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