

# THE EFFECTS OF BIRTH ORDER ON SOCIAL GROUP FORMATION

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## **Abstract**

The current study investigated birth order effects at a group level as opposed to the conventional dyadic analysis. Participants indicated the birth orders of all members in their social clique. Chi-square tests revealed a homophilous\* effect of friendship among oldest children and middle children.

## **Introduction**

138 years since Francis Galton (1874) observed that first-born sons and only sons were over-represented amongst English scientists, controversy has shrouded the issue of whether birth order effects exist.

Hartshorne, Salem-Hartshorne and Hartshorne's (2009) study found that people who share the same birth order are more likely to form platonic and romantic long-term relationships than would be expected by chance. This was done by analyzing married couples and best friends. Both married couples and best friends were likely to share the same birth order.

This preliminary research extends their study by shifting the level of analysis from a dyad to a group level. We hypothesized that people of the same birth order are more likely to form friendships with one another than would be expected by chance. To test this, we had to determine the birth order proportion of social groups.

\* Homophily refers to the tendency of/for individuals to group together with similar others. In this study, we examine birth order similarity as a grouping factor.

## Method

Participants were recruited via an online survey.

In the survey, participants proceeded through the following steps:

- 1) Participants were asked to spend some time visualizing their social clique.
- 2) When they had their clique and its members in mind, participants were asked to indicate how many people exist in their clique.
- 3) Participants were then brought to a section where they had to indicate the names of each member of the clique.
- 4) The next section brings up each clique member's name and requests for the following demographic information regarding the clique member: Age, Sex, Ethnicity, Religion and Birth Order.
- 5) The final section asks the participant for his or her own Age, Sex, Ethnicity, Religion and Birth Order.

The key component we were interested in was the birth order. Participants could indicate birth order via four options:

- **First Born** – The person is the oldest child in the family.
- **Last Born** – The person is the youngest child in the family.
- **Other Born** – The person is neither the oldest, youngest or only child in the family; he/she is therefore a middle child.
- **Only Child** – The person has no siblings.

## Results

330 participants indicated their birth order and the birth orders of friends who made up their closest social clique.

The following matrices were created for the purposes of running a chi-square test.

Actual survey data		To			
		First Born	Last Born	Other	Only Child
From	First Born	345	182	137	79
	Last Born	172	121	75	64
	Other	108	97	79	28
	Only Child	51	31	15	10

These values were determined by summing up all the *First Borns*, *Last Borns*, *Other Borns* and *Only Children* indicated by each type of birth order participant.

Expected value		To			
		First Born	Last Born	Other	Only Child
From	First Born	315.10	200.90	142.63	84.37
	Last Born	183.21	116.81	82.93	49.05
	Other	132.32	84.36	59.89	35.43
	Only Child	45.38	28.93	20.54	12.15

The expected values, which represent the proportion of birth orders expected if people in the population were forming social groups by chance, were determined by taking all indicated clique members (per participants' birth order) and redistributing them based on the birth order distribution in the population.

The overall chi-square test indicated, overall, that **there was a significant effect of birth order on social group formation ( $p < .001$ )**.

Further chi-square tests revealed **significance of the predicted homophily effect for *First Borns* and *Other Borns* ( $ps < .05$ ) but not *Last Borns* ( $p = .26$ )**. There was a **marginally significant effect found for *Only Children* ( $p = .08$ )**.

## Analysis

The results show that *First Borns*, i.e. oldest children, and *Other Borns*, i.e. middle children, were more likely to group together with others of the same birth order than expected by chance (i.e. *First Borns* tend to group together with other *First Borns*, and *Other Borns* tend to group together with other *Other Borns*). This suggests that ***First Borns and Other Borns might be choosing to group together due, to some extent, to having similar birth orders.***

There was a marginally significant deviation of actual results from the expected results for *Only Children*. Closer inspection of the data shows that *Only Children* were more likely to group with *Last Borns*, and less likely to group with *Other Borns* and *Only Children*. However, as the significance is marginal, this should be taken with caution.

The lack of significance found for *Last Borns* suggests that their grouping behavior does not demonstrate any deviation from grouping behavior expected at random.

## Conclusion, Implications and Future Research

This is a preliminary attempt at determining if birth order homophily effects exist at the group level. The effects found for *First Borns* and *Other Borns* suggest that there might be room for further exploration of this homophily effect.

One useful extension of this research is to determine if birth order does affect individual differences, such as personalities, beliefs, values or worldviews. The literature is divided on whether birth order effects exist, thus further research in this direction may seek to clarify the matter. Assuming further research remains on tangent with the data demonstrated in this preliminary study, it is plausible to see if people of the same birth order share, for instance, the same values or beliefs. This will establish values or beliefs as the mediator leading from birth order to social group formation.

One limitation of the study is that *Other Borns* encompasses a potentially large range of birth orders. A middle child in a family with three children may be very different from the 2<sup>nd</sup> born in a family with five children, or the 5<sup>th</sup> born in a family with six children; yet they all are defined as *Other Borns* in this study. Further research may yield interesting findings on what may constitute the mediating traits that led to our outcome where we found that *Other Borns* tended to group together.

## **References**

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