



Impact of Birth Order and Sibling Interaction on Personality: An Exploratory Study

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ABSTRACT

This paper attempts to explore the effect of psychological factors and on the individual's personality. Importance of the topic and insufficient studies led to this paper. Through this paper we explore the correlation between psychosocial factors (such as birth order) and his personality. Major objectives of the paper include study of birth order and sibling interaction that impact personality of an individual. The Brief HEXACO Inventory was employed to assess personality of the individual. In addition, Sibling Inventory of Differential Experience (SIDE) to study the differential sibling treatments. A total of 342 individuals between the age ranges of 17 to 25 were part of the study. Correlation Analysis and Regression Analysis was run, and findings concluded that multiple factors affect a child's personality which includes but are not limited to the objectives taken up in this paper. It was found that these factors play an essential role in the development of personality of an individual.

Keywords: Psychological factors, Personality, Birth Order, Sibling Interaction, Age gap

1. INTRODUCTION AND RESEARCH CONTEXT

Personality of an individual is the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptations to the psycho-social factors (Larsen and Buss, 2005) like birth order (Adler, 1928) age gap among siblings (Sulloway, 1999), sibling interaction (Bandura, 1977).

Birth Order and Personality

Freud (1920) claimed that a person's "position in the sequence of brothers and sisters is of very great significance for the course of his later life." While some researchers state that differences among birth order has physiological origin which has a lot to do with mothers age at the time of birth, prenatal influences, miscarriages and/or other intrauterine complexities. (Chen and Cobb, 1960; Jenkins and Thurston, 1925; Ellis, 1905) others claim that origins of birth order differences lie in differential family interactions among children in the same family (Adler, 1928; Ditter, 1961; Greenberg, 1963; Singh, 1978). Adler also put forward certain characteristics innate to first born like authoritarian, striving to please others, reliable and protective or helpful towards other people whereas second born having characteristics like being competitive and since they lack the undivided attention of their parents, they are people pleasers, peacemakers and independent. Similarly, last born are charming and outgoing, attention seeking, can behave like the only child and may feel inferior since everyone is more capable than him. The Family Niche Theory stated that siblings with the age difference less than the range of 5 to 6 years impacts each other's personality formation to a great extent (Sulloway, 1999). In his book, *Born to Rebel* (1996), Sulloway questions why do children in the same family, act differently i.e., some conform to authority whereas others rebel concluding that the family is not a "shared environment" but rather a set of niches providing siblings with different personalities and outlooks towards situations and life in general. A study found that those with higher birth ranks in fact attain better jobs and occupations and actually do complete more years of schooling in comparison to lower birth ranks (Herrera et al., 2003). First-born are obedient in comparison to last born who are the least obedient and only children are believed to be the least likeable (Baskett, 1985; Musun Miller, 1993). Firstborn are believed to be the most responsible and last-born are believed to be very outgoing and friendly (Nyman, 1995). A study by Rothbart (1971) concluded that parents interfere with more activities of the firstborn, and the firstborn are given more responsibilities than the later born. Studies show that first and lastborn are more likely to nominate their mothers when asked about the person they felt closest to whereas middle born were more likely to nominate siblings. This shows that birth orders constitute significant family "niches," which differ with respect to the perceived dependability of parental investment and therefore are different in terms of social orientations that they create, going in line with Sulloway's claims (Catherine and Daly, 1998). Another study examining the relationships between birth order, sibship size, and several variables showed firstborn to be more status oriented than lastborn, and this effect is mediated by sibship size. While firstborn children were unaffected by the number of younger siblings they had, the status ambitions of youngest children decreased with increase in the number of older siblings (Davis, 1997).

Birth order theories suggest that with every different birth order, the set of characteristics for personality changes. Since birth orders differ based on the age gap that exists between siblings, we can state that age gap also contributes to differing personalities among siblings. According to the Family Niche

Theory by Sulloway (1999), if two (or more) children of the same family who have a small age gap, they will compete with each other to be the "smartest" in the family and try to fill the same niche. The theory states that if the two siblings have an age gap above 6 years, the competition automatically stops due to the large age difference between them. Instead, the large age gap may lead them to work together and the end result is often the case that both the children end up being smart and filling their natural niche.

Research shows that a larger age gap between siblings affects personality traits negatively leading to more disorganised and erratic behaviour with high neuroticism and introversion whereas smaller age gaps i.e., less than 4 years, leads to high self-esteem, extroversion and pro-social behaviour (Golsteyn and Magnée, 2017). A study also showed that smaller age gaps have a negative impact on children's future outcomes (Thoursie, 2009).

Sibling Interaction and Personality

Sibling interaction i.e., the interaction that occurs between siblings present in the same household impact their personality as Bandura in his theory of learning (1977) contends that siblings may exert positive influence on each other through social learning through careful observation of each other. According to Bowlby's attachment theory siblings form attachments with each other at a very young age and some siblings even turn to each other for emotional support in comparison to parents. Research on differential treatment of siblings is also consistent with Adler's theory that parental favoritism of one sibling over the other is connected with poorer sibling relationships. Similarly, according to the social comparison theory of Festinger (1950), individuals are motivated on an internal level to compare and evaluate themselves against those whom they feel are like themselves. This theory also shows how siblings compare themselves to each other and measure up to see where they stand. Research states that siblings can have direct effects on one another's development since they serve as social-partners and role models and that siblings can influence one another indirectly as well by virtue of their impact on the family dynamics such as by acting as building blocks of the family structure, holding a favored family position, or diluting the resources of the family (McHale et al., 2006) while another study states that the quality of sibling relationships positively affected prosocial behaviors (Smorti and Ponti, 2018). The findings have been mixed on the issue of sibling differentiation that is linked to warmer and less conflictual sibling relationships. (Feinberg et al., 2003; Whiteman et al., 2010; Whiteman et al., 2007).

A study concluded that siblings in the same family experience different environments, according to parents and to a greater extent by the siblings themselves. The results also showed that environmental differences that exists within-family are majorly related to differences in development among siblings. Both the parent as well as the sibling reports of the environment state that the sibling who is more psychologically well adjusted, according to parents, siblings, and teachers, also experiences more maternal closeness, more sibling and peer friendliness, more participative in family discussions and decision making, and more parental responsibilities and chore expectations as compared to other siblings (Daniels et al., 1985). A book called 'Sibling Relationships: their Nature and Significance across the Lifespan' by Lamb et al., (1982) also talks about how siblings have different relationships and because of that different personalities although they live and grow in the same environment.

Siblings develop ideas about their own worth and abilities when they interact with other siblings (Tesser, 1980). Their personalities, social and cognitive development and their adjustment is all associated with their behaviour towards each other (Daniels et al., 1985; McHale and Gamble, 1987). Siblings' feelings towards each other also continue in their adult lives (Ross et al., 1981; Ross and Milgram, 1982).

For the same purpose we would be taking into account the above-mentioned variables and studying them in the same research in the Indian context to understand the population as well as the individual better.

Objectives

1. To ascertain a correlation between birth order and personality,
2. To find out a correlation between age gap between siblings (birth spacing) and personality.
3. To identify a correlation between (differential) sibling interaction and personality.
4. To study about differential familial treatment towards first born, second born in comparison to other birth orders.

2. METHOD

The study is descriptive-exploratory. Samples were chosen following purposive sampling. In order to test four hypotheses, tools were adapted/utilized to elicit data and analyse.

Sample

All participants were selected using purposive sampling method. A total of 350 individuals were approached from which 342 individuals finally participated in the study. 322 individuals were finally chosen as they fit the criteria that we needed and out of these, 135 were males and 187 were females. All the participants had at least one sibling and were in the age range of 17 to 25.

Hypotheses

1. There will be a correlation between birth order and personality.

2. There will be a correlation between age gap between siblings (birth spacing) and personality.
3. There will be a correlation between (differential) sibling interaction and personality.
4. There will be differential familial treatment towards second born in comparison to other birth orders

Measures

The individual data form was designed using Google forms and it was used to collect the basic data of all the participants. It contained the following questions:

1. Age
2. Birth order
3. A gap between siblings
4. sibling interaction

2.3.1 Brief HEXACO Inventory

This was used to measure the personality of the participants. It is based on the HEXACO model of personality structure and is a 24-item brief scale made by De Vries (2013) from the University of Amsterdam. HEXACO was originally made by Ashton and Lee and is a six-dimensional model of human personality. It is based on findings from a series of studies that involve several European and Asian languages.

The reason why it is called Hexaco is because it has six factors, or domains that include Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). Each factor has certain traits with characteristics indicating high and low levels of the factor. It has been used in several researches including Ashton et al., (2014); McGrath et al., (2018).

Following BHI domains deserve attention:

Honesty-Humility

High scorers on this scale leads to a tendency of avoiding manipulations with others for personal benefits. People having this domain usually feel little temptation to break rules. Such people are basically uninterested in lavish life and comforts, and feel no special entitlement to higher social status. On the other hand, people with low scores are found flattering others to materialize their interests and dreams. In other words, they are selfish.

Emotionality

people who score high are prone to perceive anxiety and fear especially of physical dangers. Therefore, they require emotional support as they are stressed easily. They are empathetic towards others and get attached to others easily whereas those who score low do not worry or stress about physical harm, have little need for connection and empathy and do not easily get attached to other people.

Extraversion

high scorers on this domain have self-confidence, feel self-worth, are more positive towards life and themselves, enjoy social gatherings and interactions, and experience positive feelings of enthusiasm. Low scorers avoid limelight situations, have less self-confidence, and consider themselves to be unpopular, feel awkward easily when they are the centre of social attention, are indifferent to social activities, and feel less lively and optimistic than others do.

Agreeableness (versus Anger)

These people easily forgive others, show leniency in judgement, are willing to compromise and cooperate with others, and can easily control their temper whereas those who score low are more inclined to holding grudges against those who have harmed them, are rather critical of others' shortcomings, are stubborn in defending their point of view, and feel anger readily in response to mistreatment.

Conscientiousness

Those who score high on this domain tend to organize their time and their physical surroundings, work in a disciplined manner towards their goal, strive for accuracy and perfection in their tasks, and are careful when making decisions. Low scorers on the other hand are unconcerned with orderly surroundings or schedules, avoid difficult tasks or challenging goals, are satisfied with erroneous work, and make decisions on impulse or with little reflection.

Openness to Experience

High scorers on this scale become absorbed in the beauty of art and nature and are inquisitive about various domains of knowledge, use their imagination freely in everyday life, and take interest in unusual ideas or people while low scorers are generally unimpressed by most works of art, feel little intellectual curiosity, avoid creative pursuits, and feel little attraction toward ideas that may seem radical or unconventional.

The responses on this BHI scale are collected through 5-point Likert scale with 1 being strongly disagree and 5 being strongly agree. Item number 3, 4, 7, 8, 9, 11, 12, 17, 18, 20, 22 and 24 are reverse coded.

As part of the study Test Re-test was done in order to test the test-retest reliability of Brief HEXACO Inventory (BHI). For this purpose, 70 participants were re-approached and asked to refill part of the questionnaire. Out of these, 69 filled the questionnaire again.

S no.	Scale Domain	Test-retest reliability
1.	Honesty humility scale	0.815
2.	Emotionality	0.900
3.	Extraversion	0.873
4.	Agreeableness (vs anger)	0.874
5.	Conscientiousness	0.662
6.	Openness to Experience	0.894

Sibling Inventory of Differential Experience (SIDE)

The SIDE scale developed by Daniels and Plomin (1985), was used to understand the different parental treatment children of the same family receive and the differences in the interaction of siblings and their experiences towards each other and their parents. Used in various studies like Loeser et al., 2016; Rauer and Volling, 2007; and Schole et al., 2006, etc. it was in 1981 that Rowe and Plomin began to inspect the framework for differential sibling interactions. They took into account sibling interaction, parental treatment, extra familial network influences and specific individual experiences. Finally, the SIDE questionnaire was developed which compares the individual's experiences to each other. The scale has 4 different sections as under:

Differential Sibling Interaction

This domain sees how the sibling interacts and how it differs for each sibling. There are a total of 24 items in this domain.

Differential Parental Treatment

This domain assesses the affection and control and how parental treatment differs towards siblings. This domain has total 9 items to measure it.

Differential Peer Characteristics

This aspect measures the differences that exist between the sibling's peer groups. It has 26 items that measures the same.

Events specific to the individual

This domain consists of 14 items that measure the unique experiences of the siblings. They are asked about things that they experience like the impact of relationships, relatives, friendships, teachers, accidents, divorce, meeting a special person, extraordinary events, death of a loved one, and family psychological problems etc.

Scoring of each domain is done on a 5-point likert scale which measures in a relative manner between the two siblings, ranging from 1 being towards sibling and 5 being towards me.

In this study only the first measure i.e., Differential Sibling Interaction was taken. The scale had high alpha reliability and test-retest reliability.

Reliability

The Cronbach reliability for the current sample for Differential Sibling Interactions was calculated to be 0.50, which is moderate reliability.

3. DATA ANALYSIS

Data analysis was done and Cronbach Alpha, to test the reliability of the scales, Test Retest reliability was checked for the scale which had low alpha reliability, Mean and SD of the data were calculated to know the average score of the data on each construct, Correlation Analysis was done through Pearson Product Moment correlation to know the extent to which the variables were related to each other and Regression Analysis was conducted to study the cause and effect or impact of one or more independent variable/s on a dependent variable.

4. RESULTS

Variables	Mean	SD	1	2	3	4	5	6	7
1. Age	21.17	2.21	1						
2. Birth Order	1.84	.749	-.057		1				
3. Age Gap	3.75	2.69	.007	.179**	-.008			1	
4. Differential Sibling Interaction	72.78	7.75	-.020	.109	-.166**	-.035	-.006	.109	1
5. Honesty -Humility	13.54	2.47	.135*	-.061	-.052	.134*	.154**	-.069	-.160**
6. Emotionality	11.93	3.15	.184**	.052	-.096	-.092	-.108	-.023	.078
7. Extraversion	14.06	2.69	-.016	-.026	-.037	.172**	.126*	-.011	.023
8. Agreeableness	11.99	2.50	-.121*	.104	-.043	.056	-.101	.159**	-.110*
9. Conscientiousness	13.56	2.75	.043	-.123*	.124*	.132*	.029	.012	.051
10. Openness to Experience	14.89	2.6	-.043	.041	-.050	.098	.062	.047	.139*

Table 1: Mean, S.D. and correlation values of variables, **p < 0.01, *p < 0.05, N = 322

Regression Analysis

Birth Order 1

Predictors	Model	Age	Age Gap	Diff. Sibling Interaction
Honesty Humility	R ² .33 F3.36	β .218 p .019	β .019 p .832	β -.151 p .048
Emotionality	R ² .35 F 3.77	β .141 p .029	β -.057 p .521	β -.063 p .491
Extraversion	R ² .109 F .893	-	-	-
Agreeableness vs Anger	R ² .187 F 1.67	-	-	-
Conscientiousness	R ² .24 F 2.28	β .141 p .149	β .098 p .306	β .245 p .015
Openness to Experience	R ² .054 F .417	-	-	-
Birth Order 2				
Honesty Humility	R ² .20 F 2.17	β -.079 p .372	β -.022 p .809	β -.124 p .151
Emotionality	R ² .13 F 1.35	-	-	-
Extraversion	R ² .168 F 1.80	β -.013 p .884	β -.146 p .115	β -.015 p .866
Agreeableness vs Anger	R ² .27 F 3.26	β .056 p .510	β .325 p .000	β -.139 p .092
Conscientiousness	R ² .26 F 3.19	β -.105 p .215	β .113 p .196	β -.017 p .832
Openness to Experience	R ² .18 F 1.93	β .021 p .817	β .000 p .998	β -.203 p .021
Birth Order 3				
Honesty Humility	R ² .32 F 1.68	-	-	-
Emotionality	R ² .45 F 2.94	β .408 p .004	β -.102 p .395	β .001 p .993
Extraversion	R ² .18 F .798	-	-	-

Agreeableness vs Anger	R ² .37 F 2.08	β -.054 p .710	β .129 p .316	β -.158 p .237
Conscientiousness	R ² .24 F 1.14	-	-	-
Openness to Experience	R ² .088 F .346	-	-	-

Table -3: Regression Analysis

6. DISCUSSION

Birth Order and Personality

We can see from the tables that several factors of personality in individuals of different birth order are affected. Most of the correlations between various factors of personality like Honesty/ Humility, Emotionality, Extraversion, Agreeableness (versus Anger) and Openness to experience and birth order are negative, showing inverse relationship. Therefore, increase in birth order would lead to decrease in these factors of personality. Whereas Conscientiousness has a positive/ direct relationship with birth order and increases with increase in the birth order. Regression analysis shows us that different birth orders affect the personality of an individual like first born has significant impact on Honesty/ Humility, Emotionality and Conscientiousness factors of personality whereas there is insignificant impact on Extraversion, Agreeableness (versus Anger) and Openness to Experience factors of personality. Birth order, second born has a significant impact on Honesty/ Humility, Extraversion, Agreeableness (versus Anger), Conscientiousness and Openness to Experience factors whereas there is insignificant impact on Emotionality factor. Birth order third born has a significant impact on Emotionality and Agreeableness (versus Anger) factors whereas there is insignificant impact on Honesty/ Humility, Extraversion, Conscientiousness and Openness to Experience factors. We can see that first born are generally most honest and have more humility in comparison to their siblings, they avoid manipulation and breaking rules as well as luxury; they are more emotional i.e., they have empathetic relationships and require emotional security and that they have higher conscientiousness i.e., they are organized and disciplined in their time and work. Likewise, second born are generally honest and have humility i.e., they do not focus on personal gains and do not find pleasure in the luxuries of life, they are confident and enjoy social gatherings and attention, they are forgiving and less judgemental as well as compromising and cooperative, they make careful decisions, are organized and disciplined and they are imaginative, inquisitive, and creative. Finally, third born are generally emotionally involved in relationships, are empathetic and forgiving, they control their temper and easily cooperate with others.

Differential Sibling Interaction and personality

According to correlational analysis we can see that Honesty/Humility, Agreeableness (versus Anger) and Openness to Experience have significant relation with differential sibling interaction. Honesty/Humility and Agreeableness (versus Anger) have a direct relationship i.e., with increase in differential sibling interaction there is increase in Honesty/Humility and Agreeableness (versus Anger) and shares an inverse relationship with Openness to Experience which means increase in differential sibling interaction will lead to decrease in Openness to Experience. Regression analysis shows us that first born are more conscientious which is affected by (differential) sibling interaction i.e., they tend to be more careful and disciplined in their decisions and in second born, the Openness to Experience factor is affected by (differential) sibling interaction i.e., they tend to be less creative and unconventional depending on the difference in their interaction with siblings.

Finally, the last hypothesis stated that second born experience different familial treatment in comparison to other birth orders. Regression analysis stated that there was difference among the personality factors of all the birth orders which proved that second born receive different familial treatment in comparison to other birth orders. Second born, based on the age gap between them and their sibling/s, are more agreeable i.e. they compromise and forgive easily, they are less judging and based on (differential) parental treatment, Honesty/ Humility and Conscientiousness factors are affected i.e. based on the parental treatment they receive, they would be less manipulative, less tempted to break rules and less attracted to luxuries of life, as well as they maybe more or less organised in their work and time, more or less careful in making decisions and may strive for accuracy and perfection in their approach and finally based on their (differential) sibling interaction, the Openness to Experience factor is affected i.e. their inquisitiveness, creativity and use of imagination and their tendency to absorb art and beauty is affected. This shows us that there is different familial treatment towards second born individuals in comparison to other birth orders due to which their personalities are distinct.

7. CONCLUSIONS

Through this research, we understand the impact of various psychosocial factors on our personalities, showcasing how siblings from the same family have different personalities, how age gap and sibling interaction influences us. This research is in line with previous researches like Tesser, 1980; Ross and Milgram, 1982; Brody and Stoneman, 1990; Daniels et. al. 1985; Faust and Watermann, 2017 and so on but it also adds to the previous literature by studying these factors together and coming to a more thorough result. This research can be used by counsellors and teachers to understand their clients and students better. They can also be used by individuals to acknowledge their siblings' experiences and in forming over all better familial relationships.

8. LIMITATIONS

Regardless of its contribution, the study is not free of limitations. Further research can be done by including more factors or variables that are believed to be impacting the personality like temperament, peer relations, gender, socioeconomic status, effects of extraordinary events and so on.

9. RECOMMENDATIONS

Other researches can also be done to explore the similarities and differences among birth orders that are claimed by several researchers as well as various articles. It would help to identify if there are any specific characteristics that are present in first born, second born or third born. Exploratory research which takes a more subjective approach could be done to understand why second born experience differential familial treatment and how it impacts their personality in particular.

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