DOES A RELATIONSHIP EXIST BETWEEN BIRTH ORDER, NUMBER OF SIBLINGS AND LEADERSHIP STYLE?

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ABSTRACT

There has been a large amount of proposed theories and research done on the topic of birth order, number of siblings and their relationship to leadership style. Findings show that first-born children tend to become task-oriented in their leadership and later-born children tend to become more relationship-oriented in their leadership. This study examines the relationship between birth order, number of siblings and leadership style of a sample of undergraduate Allegheny College students enrolled in Psychology courses. The study split participants into first-born children and later-born children and examined three types of leadership styles. The Fiedler's Least Preferred Coworker Scale was used to assess this relationship and a demographic questionnaire was used to obtain information on the participants' sex, class year, birth order position, and number of siblings in their family. Results showed a significant difference between birth order position in relation to leadership style for participants scoring in the lower 50% range for task-oriented and participants scoring in the upper 50% for relationship-oriented. These ranges contained participants who are heavily set in their leadership style as opposed to those scoring towards the middle of the spectrum. All other results were not significant for those two measures.

INTRODUCTION

Have you ever wondered how the birth order position of a child affects his or her personality? Have you ever thought about which sibling is most likely to become more assertive or more passive? In this study, these questions are going to be explored to find out if birth order and the number of siblings in a family relate to a person's leadership style.

Currently, there is a large amount of literature on birth order dealing with how each sibling in each ordinal position develops throughout childhood to adulthood. There is literature that suggests that the first-born sibling in each family is the one to obtain the task-oriented leadership style; whereas the later-born siblings adopt a relationship-oriented leadership style. Researchers have attributed these findings to a few different reasons; including the assumption that adult authority has been established in the life of the first-born children more than that of the later-born children. This study will take this reason as well as others into consideration when trying to determine if birth order and the number of siblings relate to style of leadership. There has also been research that claims the number of siblings is an important factor to consider, and that those with more siblings tend to be more concerned with relationships whether they are first-born children or later-born children. Therefore, the number of siblings in a family should be considered in this study as well.

Rationale for Study

Researchers have found many different results when it comes to doing studies on this topic. Since there have been opposing results, it is important to continue researching it. This study will continue to explore the topic of birth order, number of siblings and leadership style in

order to help results become more conclusive. In order for the results to be more conclusive, this study will include a homogeneous population to control possible confounding variables, since there are many when it comes to dealing with birth order and family size. Since the other studies that have been done on this topic did not specify if the groups were homogeneous, doing this will make the findings in this study more conclusive.

LITERATURE REVIEW

Birth Order

In this study, birth order was defined as first-born children and later-born children. Only children were excluded from the study, seeing as this study also included the number of siblings as a variable. As stated in the introduction, many researchers have looked into birth order and have developed theories as to how each child develops depending on his or her sibling position. The traits that each sibling require aided in the conclusion as to which sibling would have adopted each leadership style, whether it was an assertive, task-oriented leader or an interpersonal type of leadership style.

Theory

First-born children.

A researcher named Frank J. Sulloway was interested in birth order and personality, which included how ordinal position affects how a child develops. His claims are based on Darwinian Theory which includes evolutionary psychology rather than empirical studies (Sulloway, 1996). His literature helped in the understanding as to why each sibling may adopt a certain leadership style. He focused more on first-born siblings in his research. Throughout childhood, first-born children describe themselves as being bigger and better than their later-born siblings since they are older (1996). This may carry on into adulthood. Therefore, the first-born

children may be more experienced in certain life situations, even if they are fairly young when the second child arrives. This would ultimately allow them to gain a sense of superiority over their siblings which would contribute to the development of a task-oriented leadership style. Since the first-born children will view themselves as being bigger and stronger than the younger siblings, this will make their behaviors become more authoritative and aggressive (Sulloway, 1996). Assertiveness and aggressiveness are traits admired in political leaders, which is why first-born children are overrepresented among them (Sulloway, 1996). This may allow them to feel as if they are more capable of getting tasks done than later-born children. Due to this, first-born children abuse their power on the later-born children, causing the later-born children to feel inferior (1996). One may assume that since first-born children are usually physically bigger than the later-born children, they can be intimidating to the younger ones. This allows the first-born children to practice and develop more directive behaviors.

Another researcher, Louis Stewart, was also interested in birth order and explored how ordinal position related to political genius. He based his perspectives on the psychological theory of C.G. Jung (Stewart, 1992). Jung dealt with analytical psychology and was concerned about human experience. Therefore, Stewart decided to talk about siblings' experiences within the family and how it affects them. Since later-born children are weaker in the minds of the first-born children, the first-born children take on responsibility for them (1992). This means that the first-born children will be more inclined to take the initiative in the family and in their community, and will look after the younger ones. Therefore, he favors the theory that first-born children tend to be more task-oriented and would be more inclined to delegate because they assume responsibility for the society they are born into more than later-born children. The later-born children appear to be the ones taken care of by the first-born children, so they do not have

to be as concerned with the well-being of society as much as the first-born children do. The first-born children may tend to lead the younger siblings, showing that they acquire a more directive and assertive personality. According to Stewart (1992), the experience that first-born children develop by taking on responsibility for their younger siblings will prepare them to be authoritative. Therefore, this could be saying that the first-born children should be more qualified for a responsible leadership position as opposed to later-born children due to this experience of being the oldest child. The first-born children should be able to take initiative in times of need and be able to take charge of the whole group.

Later-born children.

Stewart moved on to describe the later-born sibling position in the family. In his literature, he divided the positions into second and third-born children. Since second-born siblings are in the middle, they have to maintain the relationships with those above and below them (1992). Therefore, it appears as if the second-born children have to maintain their sibling relationships which makes them more relationship-oriented as opposed to task-oriented. Since the second sibling is a leader to the younger siblings, yet a follower to the older sibling, he or she must maintain both relationships. Second-born children have to accommodate the needs of both sides, whereas the first-borns only need to be concerned with taking responsibility of those below them. Stewart does not say much about the youngest siblings except that once the youngest is born, the family is done growing (1992). By reviewing this literature, it is shown that since the youngest siblings do not have any siblings below them to take responsibility for, then they would have no choice but to follow those siblings that are older. Therefore, the first-born child is still described as being the one to take responsibility for the others, which requires him or her to have an assertive leadership style. The later-born siblings tend to be more concerned with

maintaining their relationships with the older siblings, making them more relationship-oriented. Stewart and Sulloway made the same claims about first-born and later-born children.

Research-based

First-born children.

Malinda Muzi (2000) also included literature in her book, titled *Child Development: through Time and Transition*, which is consistent with the literature of Stewart and Sulloway. She bases many of her claims on research done by other individuals. She did not personally perform a study in order to support her claims. She describes first-born children as being those who are stimulated by social interactions with their parents (2000). This is consistent with most of the birth order literature. When the oldest siblings are born, the first people they learn to socialize with are their parents because there are no other siblings in their immediate environment. Since this is the case, first-born children are more likely to identify themselves with authority, and so they become more authoritative and directive.

Later-born children.

Unlike first-born children, later-born children tend to interact more with siblings than with their mothers and fathers (Muzi, 2000). As opposed to the first-born children who tend to become primarily socialized through parent interactions, later-born children tend to gravitate toward social interactions with their older siblings. This would cause later-born children to develop a more relationship-oriented style of leadership, as opposed to a more directive task-oriented leadership style.

Based on observations

Lucille Forer, a clinical psychologist, wrote a book titled *Birth Order and Life Roles*, where she breaks down the birth order positions and talks about the development of each sibling

from childhood to adulthood. She has obtained her information from clinical observations (Forer, 1969). She has gathered information from many people including students, colleagues, and family members (Forer, 1969). She also receives help from her husband, Dr Bertram R. Forer, and watches literature to see if there are any recent studies done on this topic (Forer, 1969). She claims that by gathering information from all of these sources, she has become confident in the information she has written in her book (Forer, 1969).

First-born children.

First, she talks about how birth order influences life adjustment and starts out by talking about the first-born child. She made the same claims as Muzi did. Forer explains that the first-born child learns from interactions with their parents and allows that child to identify with them (1969). The child will learn the authoritative ways of his or her parents. According to Forer, when another sibling arrives, the oldest sibling will try to be like a parent (1969). The oldest child will want to be a caretaker of the younger sibling rather than a friend. As far as responsibility goes, the parents will naturally expect their oldest child to be more capable and more responsible than the younger children, therefore, the child will start to think of himself or herself in the same way (Forer, 1969). Since the first-born children are the oldest, the parents will automatically assume that they are the ones who are the most responsible and will frequently keep them in charge of the younger siblings. Therefore, the first-born children may tend to establish a sense of dominance over the younger siblings. In result, the first-born children will expect others to be less capable than them (Forer, 1969). The responsibility and feeling of superiority over the younger siblings may result in first-born children becoming more assertive and directive with others.

Parents may also have high expectations for the achievement of the first-born child and may put pressure on him or her because of these expectations (Forer, 1969). When parents have their first child, they usually do not know what to expect. They want their child to succeed and be the best they can be, but they are not aware of how much the child can feasibly accomplish. Therefore, they set their expectations high for the first child. However, when the next child is born, the parents' demands may become more realistic for that child as opposed to the first child who had high expectations (Forer, 1969). Therefore, they do not put as much pressure on later-born children and demand more normal development and achievement (Forer, 1969). The first-born child may achieve more than the later-born children because they were pressured to do so, whereas, the later-born children were not. They may also see themselves as being more capable of achieving more than the later-born children because of the way their parents acted towards both, further increasing their sense of superiority. This may give the first-born children the confidence to establish a task-oriented relationship that is more directive and more concerned about getting tasks done.

Forer also claims that older siblings tend to prefer activities and sports that involve others in a structural manner (1969). Later-born children tend to prefer activities that involve teams so everyone can work together (Forer, 1969). Therefore, this shows that later-born children tend to be more socially oriented because they want to have other people as fellow teammates rather than controlling the activity themselves. They are more concerned with creating more interpersonal relationships than first-born children, who tend to be more concerned with organization and authority. Going along with this, later-born children tend to be more popular among their peers than first-born children (Forer, 1969). Therefore, this set of claims

shows that later-born children tend to be more relationship-oriented because they appear to be more willing to include others in their activities and treat them as being equal.

According to Forer (1969), the oldest child might not be as comfortable in close relationships as later-born children would because he or she is more concerned about being in control rather than establishing a close relationship. Therefore, this would naturally tend to make first-born children less popular than later-born children. First-born children tend to have a few close friends when compared to later-born children (Forer, 1969). Forer also talks about the middle and youngest child in the family.

Later-born children.

It is natural that once the parents have experienced raising their first child, they are going to be less anxious about the second. According to Forer, parents are often more lenient with the middle child than the first child (1969). Therefore, the middle children would be less likely to take on the authoritative role and would allow for them to have a relationship-oriented leadership style. The information she gives on the youngest child is of little help to this study. However, she does say that the youngest children are more likely to accept the authority of those around them (Forer, 1969). Therefore, they are more accepting of the control that others may have over them since they may have been controlled by not just parents, but by their older siblings. This would make them less likely to be assertive or aggressive.

Brief study synopsis.

A brief synopsis of a study done at Harvard was included in Forer's literature where two generations of people were asked to evaluate the first and second children in their families and then the parents of each generation reported the same information (Forer, 1969). In this study, the first child was reported to be more adult-oriented, serious, studious, and sensitive. The

second children were described as being cheerful and showing easy-going friendliness (Forer, 1969). Therefore, first-born children were reported to have those traits needed to be a task-oriented leader, whereas the later-born children were reported to have those needed to be a relationship-oriented leader. This study was inserted in here to show that she does use previous studies to back up some of her claims.

Summary of birth order literature

In summary, it appears that most literature depicts the first-born children to be more directive and assertive as opposed to later-born children. First-born children tend to adopt the authoritative roles of their parents, considering their parents are the first to help them develop socially, whereas later-born children develop socially through sibling interactions as well as parental interactions. Later-born children are usually described as being more social within the peer group than first-born children, making them more relationship-oriented. First-born children also tend to act superior to their younger siblings, making them more aggressive and domineering in situations involving conflicts. This can all be used to explain why each sibling may develop a different leadership style.

Number of Siblings

More siblings mean more concern for interpersonal relationships?

The number of siblings is a very important variable to study because some literature suggests that it is not the order of the siblings, but the amount of siblings in a family that would contribute to their leadership style. Dalton Conley wrote in his book, *The Pecking Order: Which Siblings Succeed and Why*, that he found the size of the family matters more than the order in which each sibling was born (2004). In order to obtain his information, he interviewed many family members about their childhood (Conley, 2004). The people he interviewed were from

different birth order positions and family sizes (Conley, 2004). This book shows what he found. He makes a couple very important points involving the number of siblings in a family. He claims that when there are only two children in a family, the parents have better control over the children and can establish their values much easier than if there were more children (Conley, 2004). It appears that if there are fewer children in the family, it is easier for those children to have their parents be the main focus in their life. There are not many other children around to influence them, so their parents have the most impact on their lives. So, it may be the case that if there are very few children, they will both adopt authoritative views. Conley states that if there are more siblings, the children are more likely to compete for attention from those around them, including family members as well as peers (2004). In result of that, community members and peers play a larger role in the development of these children (Conley, 2004). If there are more siblings, they may engage in more peer interactions and become more socially oriented than families with fewer children. Therefore, leadership style may depend on the number of siblings as well as birth order. Conley was not the only one to think that the number of siblings matter.

In Forer's book, there is a short section where she talks about pediatric nurses (1969). Pediatric nurses are seen to be very motherly to their patients, but investigators found that pediatric nurses were more likely to be the oldest child of their family, from large families (Forer, 1969). Therefore, children in larger families are more inclined to adopt the role of caretaker, as opposed to an aggressive, authoritative role. There was a study done by Anjali Ghosh that found that the number of siblings impacted leadership style as well.

Research Study

Ghosh (1989) did a study in which he examined how certain biological factors were related to leadership style, including birth order and number of siblings. He found that there was

no significant difference among the biological factors when it came to leadership style. However, he found that there was a significant difference in leadership style when it involved number of siblings, showing that the more brothers and sisters there are in a family, the more likely one of the siblings is going to have a nurturing leadership style (Ghosh, 1989). A nurturing style could be related to a relationship-oriented style because the siblings are concerned about caring for the other siblings rather than being assertive and directive.

Analyzing the results.

There may be reasons as to why Ghosh obtained these results. The study was done in India, so there is a difference in culture. The people in India may have different family experiences and roles. Children may be developed differently than they are in the United States. Also, he used five different types of leadership styles, including participative, nurturing, authoritarian, task-oriented, and bureaucratic. Therefore, the study was more complicated than just dichotomizing the variable of leadership style into task-oriented and relationship-oriented. There was not much detail on how the leadership scale that was used was set up, so that could not be analyzed.

Leadership Style

Task-oriented leader

A task-oriented leader is the type that is most concerned with getting important tasks done and being aggressive enough to make sure those under him or her are able to handle the tasks. Typically, they value achievement over relationships with others and value structure more than someone who is relationship-oriented (Fiedler & Chemers, 1984). Their job is the most important and relationships come secondary (Fiedler & Chemers, 1984). In stressful work

situations where a job needs to be done quickly, they feel like they can relax since they know the job will get done quicker (Fiedler & Chemers, 1984). The task is their first priority.

Relationship-oriented leader

Relationship-oriented leaders care about the group members and their interpersonal relationships with each member. They are more concerned with what others think of them than completing the task (Fiedler & Chemers, 1984). They are sensitive to how others feel in the group and encourage all group members to participate in any decision-making and problem-solving (Fiedler & Chemers, 1984). They seek out support from other group members when needed, as opposed to task-oriented leaders who do not ask for support as long as the job gets done (Fiedler & Chemers, 1984).

Possibility of a socio-independent leader?

The question that may arise here is what happens if a person is neither of these and falls in the middle of the two extremes? Well, that person would be a socio-independent leader. Socio-independent leaders are not usually discussed in literature because the participants are usually described as being one or the other. However, the questionnaire that is being used for this research creates a possibility for a participant to obtain a score that corresponds with a socio-independent leader. Socio-independent leaders fall in the middle of the spectrum and do not care what others think (Fiedler & Chemers, 1984). They are more flexible and open to learning from their experiences as opposed to trying to control them (Fielder & Chemers, 1984). Since there is not much research on this type of leader and it has not been mentioned in the literature, or any of the previous studies, it is not something that is necessarily going to be looked for in this experiment. However, if the data shows that certain people scored in this range, then it might be worth mentioning and investigating later on.

Previous Studies

Results not consistent with literature

Fred Degenais did a study in which his results turned out differently than what theory and some other research studies have shown. Degenais (1979) tested nurses in his study and administered the Leadership Opinion Questionnaire that contained two scales. The first scale was the Consideration Scale, which measured the extent to which the participant has job relationships with subordinates, which are based on mutual trust and consideration in personal feelings. The second scale is the Structure Scale, which measured the extent to which the participant defined his or her role towards subordinates in terms of social-attainment. If the participant received a high consideration score, it means he or she has a good rapport and two-way communication. If a person received a high structure score, he or she has more of a tendency to plan, schedule, criticize and direct. In his study, he found no differences between the sibling positions on the Consideration Scale and the Structure Scale. At the end of the study, he states that the majority of results from previous studies on this subject are at worst, inconclusive, and at best, a weak relationship (Degenais, 1979). He also expresses that he believes Chemers' findings were the result of social desirability of LPC responses and he states that he thinks the Leadership Opinion Questionnaire measures leadership style better (Degenais, 1979).

Analyzing the results.

He may have found that there were no differences because he uses nurses in his study, which may tend to have a more compassionate nature because they need to be able to work well with others for their job. Therefore, the nurses in this study who are first-born children may be more concerned with their interpersonal relationships more than the average first-born child would because it is how they maintain their professional career. Students, however, may not be

as concerned with relationships because not all students want to enter a field similar to a nurse. His concern about Chemers' study is also a point to take into consideration. Even though his beliefs may be wrong, there is a possibility that Fiedler's Least Preferred Coworker Scale does not measure leadership style well. However, Fiedler's Least Preferred Coworker Scale has been used it a few studies that have shown consistent results. Therefore, it appears to be a great way to measure leadership style. It is also important to note that he also talks about how the majority of results found on this topic are inconclusive at the end of the study. Seeing as he describes the results found in this way, it shows that it is very important to keep studying it in order to make the results more conclusive.

Results consistent with literature

A study by Parmjeet Dhillon was done on leadership style. He included information from Chemers and Hardy that said that they found that task-oriented leaders are more effective in delegating group activities more than relation-oriented leaders (cited in Dhillon, 1989). Strube and Oto also proposed that parent-child interactions are more prevalent with first-born children than they are with later-born children, giving them the exposure to adult authority (cited in Dhillon, 1989). It also states that parents tend to have higher expectations for their first-borns than their later-borns, making the first-borns become more task-oriented. Dhillon's participant pool consisted of students ranging in age from 15-17, and they were from different ordinal positions. Students were asked to fill out Kuppuswamy's modified Socio-economic Scale along with items asking them about their ordinal position. Based on these answers, they were divided into groups. They were given the Bass Orientation Inventory that consisted of statements covering subscales, such as self, interactions, and task orientation. They were also given the Thorndike Dimensions of Temperament Scale that was used to figure out five types of

temperament. He did find significant differences among the birth order positions in relation to leadership styles. First-born participants scored higher on task orientation, which makes them more concerned about completing a job, solving problems, and doing the best job in the group. These findings supported those found in Chemers study. He also found that second born participants were more interaction-oriented, meaning they are more concerned with relationships (Dhillon, 1989).

Blema Steinburg (2001) did a study on the making of female presidents and prime ministers, where she looked at the impact of birth order. First, she examined some theoretical assumptions on birth order. Many researchers have studied birth order and how it affects how the child develops; therefore, she used this research in her study. According to researchers, Perlin and Crater, first-born children are rated as more aggressive and later-born children are rated as more passive and submissive (cited in Steinberg, 2001). This is consistent with the majority of research done on birth order. She even quotes Sulloway, whose research was previously mentioned, in her literature review section on birth order. She used his claim that first-born children identify more with power and authority because of the relationship they have with their parents (cited in Steinberg, 2001). Since she used this, she believed his claims on first-born children being more adult-oriented. The point of Steinberg's study was to find out if first-born women were overrepresented among political leaders like first-born men, with her hypothesis being that women would be overrepresented (Steinberg, 2001). To test it, she gathered data on female presidents and prime ministers from 1960-1999, and it confirmed her hypothesis (Steinberg, 2001).

Analyzing the results.

In Dhillon's study, he used an age group that is almost the same as the age group used for this study. Therefore, his results were taken into consideration because they matched those found in other previous studies with similar age groups. However, in his study, he did not mention if the population was homogeneous like the population in this study is expected to be. Even though his results came out to be significant and consistent with literature, the results from this study will be stronger because of the population being used.

In Steinberg's study, since first-born women were just as likely as first-born men to be overrepresented among political leaders, one would assume that first-born children may have the task-oriented style of leadership as opposed to later-born children. Steinberg mentions that it would be useful to observe if first-born children are able to step up in times of confrontation because the majority of them are task-oriented (2001). Her study did not go into these details, so seeing as first-born women are overrepresented; it would just create the assumption that they are task-oriented.

Results obtained using the Least Preferred Coworker Scale

There was a study done by Martin Chemers that examined the relationship between birth order and leadership style (1970). There is a theory that first-borns become highly socialized in an adult environment, which makes them become more adult-oriented and dependent on authority. The theory in this study is included in most of the birth order literature stated previously. Later-borns are usually more socially-oriented and enjoy the company of their peers. In his study, college students were given an LPC score, which stands for least preferred coworker. The students received a survey and filled out the traits that their least preferred coworker would have. Individuals who rate their least preferred coworker unfavorably, or Low

LPC, are shown to be more task-effective and have a task-oriented leadership style. Individuals who rated their least preferred coworker favorably, or High LPC, are more concerned with interpersonal relationships and would have a relationship-oriented leadership style. In this study, more first-born children scored as Low LPC in this study, showing them to be task-oriented. More later-born children scored as High LPC, which means they are more relationship-oriented. Chemers' study supports the hypothesis that first-born children are better socialized and more responsive to authority. Later-born children are more socially oriented (Chemers, 1970). Chemers found what the majority of researchers find on this subject. He took a group of students and found that first-born children are, in fact, more task-oriented and later-born children are more relation-oriented. This study supports most of the literature to date.

Robert Hardy (1972) expanded on Chemers' study and looked at the relationships between birth order and leadership style for two different American groups. This study is not only different in the fact that it consists of two different groups but it also consists of two different age levels. The first group consisted of 66 white, middle-class undergraduate students from a large Midwestern university and the second consisted of 106 lower middle-class fifth and sixth-grade African American elementary students from Washington D.C. (Hardy, 1972). The first population is the same as in Chemers' study, but the second is different in age and race. Both groups were given Fiedler's Least Preferred Coworker (LPC) scale. However, Hardy changed the wording for the African American group and told them to think of someone with whom they would work least well on a project instead of a task, since they made up a younger population than the other group. Hardy found that the same results for both groups. First-born children in both groups scored as low LPC, meaning they are task-oriented and more later-born children scored as high LPC, meaning they are relation-oriented (Hardy, 1972).

Robert Hardy (1978) then decided to do the same study again, only using nursery school children. The purpose for this was that he wanted to see if he could obtain the same results in younger children as he did in older people. He administered the same test, which was Fiedler's Least Preferred Coworker Test, except a slight modification of it. He changed the words and phrases so that the children would understand them. He found that there was no relationship between birth order and leadership style for boys, but there was one for girls. He found that more first-born girls were task-oriented and more later-born girls were relation-oriented.

Comments on results.

The explanation he gave for the lack of relationship with boys is that boys may not be mature at nursery school age, which was four years old in this study (Hardy, Hunt & Lehr, 1978). Otherwise, boys may have shown the same results as girls if this study was done with an older population. He claims that developmental research would support this theory (Hardy, Hunt & Lehr, 1978). This study shows similar results to that of Chemers' study and is consistent with most of the literature describing first-born children as task-oriented and later-born children as relationship-oriented. However, a problem with this study is that he does use young children whose personalities are still being developed based on their birth order. Since he made the claim that boys may have not been fully developed socially by this age, this study does not help make the results on this topic of research stronger. Therefore, by looking at both of his studies, it can be theorized that children will not have developed enough to have a definitive leadership style by the time they reach four years old, but they will by the time they reach fifth grade.

The study that included the two American groups is important because it shows that children at the fifth and sixth grade level score the same way as undergraduate students. Therefore, at the age of ten, which is the usual age of a fifth grader, birth order has had its effect

on the children. Their personalities are developed based on their birth order by this age. Also, he included two different groups of people so these results can be generalized to those two groups. Hardy went on to test an even younger population to see how the results would turn out.

It should be noted that in these studies that used the Least Preferred Coworker Scale, there is no mention of a homogeneous population. The only facts mentioned about the populations were how old they were and the sex of the participants. Therefore, it can not be concluded as to whether or not any of these children had older step-children before they were fully developed or any other factors that could taint the results. If children remain in the same sibling position from birth to ten years of age and have at least one sibling, then their results on this scale will be more conclusive than these results.

Purpose of this study

The purpose of this study was to see if birth order and the number of siblings in a family relate to a person's leadership style, and if it did, which style got adopted by which sibling. Birth order was defined as first-born children and later-born children. As mentioned before, only children were excluded since the study was also looking at the number of siblings in a family and because the literature said each sibling adopted a leadership style based on their interactions with the other siblings. The majority of birth order literature claimed that first-born children tend to take on a directive and aggressive role as opposed to their siblings. The later-born children tend to be seen as social and concerned with their interpersonal relationships. However, as shown in the study by Degenais, there have been studies that shown opposing results on this subject. By analyzing these previous studies, it was evident that none of them specify if the population was homogeneous or if it was not homogenous. This could be an important factor because if children gain step-siblings or adoptive siblings who are older than them before the age of ten, the sibling

positions will be changed before the siblings are set in their ways. Therefore, in this study, the group of participants consisted of college students who have remained in the same sibling position from birth until at least ten years of age. This means that no step-siblings or adoptive siblings were brought into the family before age ten. This helped eliminate the possible factor of older step-siblings or adoptive siblings coming into the family when the children are young. The participants have at least one sibling which means only children were excluded. With this homogenous population, the results found in this study were stronger and more conclusive than previous studies. With this said, the first hypothesis of this study was that birth order was related to leadership style, with first-born children adopting a task-oriented leadership style and later-born children adopting a relation-oriented leadership style. The second hypothesis of this study was that the number of siblings impacted leadership style, with participants with fewer siblings being more task-oriented and those with more siblings being more relationship-oriented.

METHOD

Participants

This study included 190 undergraduate participants at Allegheny College who were recruited from their psychology courses. There were 66 males and 124 females who participated. The age range of the participants was 17-22 years of age and included those in classes ranging from their first semester of freshman year up until their ninth semester at Allegheny College. This experiment included participants who have at least one sibling and have remained in the same sibling position from birth until ten years of age. This means no addition of older step-siblings or adoptive siblings that would change the birth order. The number of siblings ranged from one sibling to six siblings and birth order position ranged from first-born to sixth in the family.

Materials

A demographic background questionnaire was used to obtain each participant's sex, age, birth order, sibling position, and number of siblings in his or her family. The Fiedler's Least Preferred Coworker (LPC) Scale was used to assess if a participant has a task-oriented, relation-oriented, or socio-independent leadership style. The scale consisted of eighteen bipolar rating scales where the participant had to rate his or her least preferred coworker according to character traits he or she believes they possessed. Their least-preferred coworker is not necessarily the person they disliked the most, but the person with whom they worked with least well because it was hard to get the person to complete the task. An example would be to rate your least preferred coworker as how kind or how nasty they are with a 1 being nasty and an 8 being kind. Once the participant was done filling them out, the researcher added the numbers and found out the overall score. If a participant scored a 73 or above, this indicated that he or she has a high LPC and is relationship-oriented. If a participant scored a 64 or below, this indicated that he or she has a low LPC and is task-oriented. If a participant's score fell between 65 and 72, this indicated that he or she scored socio-independent.

Procedure

This researcher visited the classrooms of various Psychology courses and explained the experiment to the students. The students picked a time in which they would be available to fill out the questionnaires. Each participant showed up at the time they chose, signed an informed consent form, and filled out the questionnaires. The questionnaires took approximately 10-15 minutes to complete. When the participants were done filling out the questionnaires, they returned the questionnaires to the researcher and obtained a debriefing statement. The researcher

added the individual rating scores to obtain an LPC score. Once the LPC scores were obtained, the researcher proceeded to analyze the data.

RESULTS

There were four ways to look at the data collected for this experiment. The first was to analyze it exactly how the scale is supposed to be scored and analyzed. This means that all participants scoring as task-oriented, relationship-oriented and socio-independent styles were included in the analyses.

The second way was to exclude the socio-independent leaders entirely since a relatively small amount of participants scored in this area. These analyses showed if there is a significant difference between those participants scoring as task-oriented and relationship-oriented. The socio-independent leadership style was not a factor and, in result, allowed the researcher to see if there was a difference only between those two leadership styles.

The third way was to split the scores down the middle and call the complete lower half “task-oriented” and the complete upper half “relationship-oriented”. The median scores when the range of data was recorded were 70 and 71, therefore, scores 70 and below became “task-oriented” and scores 71 and above became “relationship-oriented”. Therefore, all participants were still included, but those scoring as socio-independent were divided into task-oriented or relationship-oriented depending on their score. The reason for doing it this way was because in previous research studies that used this scale, there was no mention of socio-independent leaders in their results. The reason for this could be because they split the participants up into task-oriented and relationship-oriented.

The fourth way was to take the two extreme groups of scores. The participants who scored as “task-oriented” and “relationship-oriented” were split in half to create two extreme groups. Socio-independent participants were excluded in these analyses as well since those participants were neither task-oriented nor relationship-oriented. The range of scores for task-oriented individuals was 18-64, with 49 and 50 being the median scores. Therefore, participants scoring a 49 or below were the lower half of the task-oriented individuals. Take note that every score number was not presented so the median scores were those taken from the actual scores of the participants. If no participant scored a certain number, that number was not included in the range. These participants made up the extreme group for task-oriented. The participants above them are closer to socio-independent so they may be the cause of the results being not significant. The range of scores for relationship-oriented individuals was 73-124, with 91 and 92 being the two median scores. Therefore, participants scoring a 92 and above became part of the extreme group. Take note that the median scores were calculated here using the same method as the other set of scores. By looking at the data this way, there may be a significant difference between the two groups because they are set in their leadership style as opposed to those participants scoring closer to the middle. These participants are the most task-oriented or relationship-oriented and there would be no contesting that since their score falls in either the bottom or top half depending on the leadership style.

The first two tables are going to show the first set of analyses with all styles being included along with a description of the results given when socio-independent scoring participants were excluded entirely. After these tables are presented, then the tables including the raw scores and significance of the third group of analyses (where the scores are split in the

middle) are presented. The analyses for the extreme groups will be presented after those and finally the analyses for sex in relation to leadership style are presented last.

Table 1 shows the raw scores for first-born children and later-born children in relation to leadership style. A two-way chi-square analysis was done to see if there was a significant relationship between first-born children and later-born children in relation to leadership style. More first-born children scored as relationship-oriented and more later-born children scored as task- oriented. The least number of participants scored as socio-independent. However, there is not a significant difference between sibling position in relationship to leadership style, $X^2(2, N=190) = 5.875$, $p > 0.05$. When socio-independent scoring participants were excluded entirely, the results were not significant, $X^2(1, N=158) = 1.870$, $p > 0.05$.

Table 1.
Raw Scores of Birth Order in Relation to Leadership Style

Sibling Position	Task-Oriented Leadership Style	Relationship-Oriented Leadership style	Socio-Independent Leadership Style	Totals (N = 190)
First-born children	35	38	21	94
Later-born children	50	35	11	96
Totals (N = 190)	85	73	32	190

Note: p> 0.05

The raw scores for number of siblings in relation to leadership style are shown in table 2. As shown, participants with the same number of siblings were grouped together for this one-way chi-square analysis. The only groups with a significant difference between the leadership styles were participants with one sibling, $X^2(2, N=91) = 10.176$, $p < 0.05$, and participants with two siblings, $X^2(2, N=61) = 9.869$, $p < 0.05$. There was only a one score difference between task-oriented and relationship-oriented for participants with one sibling but there may have been a significant difference because there was a low amount of participants scoring as socio-independent. There was a nine score difference between task-oriented and relationship-oriented for participants with two siblings. The remaining groups did not show a significant difference between the leadership styles. The groups of participants with three or more siblings contained fewer participants which made the results not interpretable. There was one participant with six siblings; therefore, an analysis was not able to be done since only one participant was in this group. As the number of siblings in the family grew, the fewer participants were in the group. A point-biserial correlation was done to show the relationship between number of siblings as a whole and leadership style. When the analysis was performed, there was a negative correlation between these two measures, showing that the higher the participant scored, the less siblings they had, r_{pb}= -.092. This ultimately means that the children are more likely to be relationship-oriented if they have fewer siblings. However, this did not come out to be a significant correlation, $p > 0.05$.

When socio-independent participants were excluded, none of the results were significant between the sibling groups. There was also a negative correlation between number of siblings as a whole and leadership style as well, r_{pb}= -.100. This was shown to not be a significant correlation,

$p > 0.05$.

Table 2.
Raw Scores of Number of Siblings in Relation to Leadership Style

Number of Siblings	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Socio-Independent Leadership Style	Totals (N = 190)
One Sibling*	37	38	16	91
Two Siblings**	30	21	10	61
Three Siblings***	7	9	3	19
Four Siblings****	9	3	3	15
Five Siblings*****	1	2	0	3
Six Siblings******	1	0	0	1
Totals (N= 190)	85	73	32	190

*Note: *p < 0.05 **p < 0.05 ***p > 0.05 ****p > 0.05 *****p > 0.05 ****** A one-way chi-square analysis could not be performed since only one participant tested under this condition*

The next two tables show the data analyses for the third scenario where the socio-independent style is excluded and the scores are split in half to represent only task-oriented and relationship-oriented. Table 3 shows the raw scores of first-born children and later-born children in relation to leadership style. A two-way chi-square analysis used for this analysis as well. In

this table, more first-born children and more later-born children were shown to be task-oriented. However, once again, there is not a significant difference between the sibling position in relation to leadership style, $X^2(1, N=190) = .737$, $p > 0.05$.

Table 3.
Raw Scores of First-born Children and Later-born Children in Relation to Leadership Style Excluding the Socio-Independent Leadership Style

Sibling Position	Task-Oriented Leadership Style`	Relationship-Oriented Leadership Style	Totals (N = 190)
First-born children	51	43	94
Later-born children	58	38	96
Totals (N = 190)	109	81	190

Note: $p > 0.05$

The raw scores for number of siblings in relation to leadership style with socio-independent participant values are shown in table 4. All groups did not show a significant difference. More participants scored as task-oriented in the one sibling group, the two sibling group, the three sibling group and the four sibling group. However, the groups of participants with three siblings or more contained fewer participants which in turn made the results not interpretable. There was one participant with six siblings; therefore, an analysis was not able to be done since only one participant was in this group. A point-biserial correlation was done to show the relationship between number of siblings as a whole and leadership style. When the

analysis was performed, there was a negative correlation between these two measures, r_{pb}= -.092. However, this was not a significant correlation, $p > 0.05$.

Table 4.
Raw Scores of Number of Siblings in Relation to Leadership Style Excluding Socio-Independent Values

Sibling Position	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Totals (N= 190)
One Sibling*	49	42	91
Two Siblings**	38	23	61
Three Siblings***	10	9	19
Four Siblings****	10	5	15
Five Siblings*****	1	2	3
Six Siblings******	1	0	1
Totals (N=190)	109	81	190

*Note: *p > 0.05 **p > 0.05 ***p > 0.05 ****p > 0.05 *****p > 0.05 ****** A one-way chi-square analysis could not be performed since only one participant tested under this condition*

The next two tables show the raw scores for the analyses of the extreme scoring participants. These analyses only included those participants scoring in the bottom half of the range of scores for task-oriented and the top half of the range of scores for relationship-oriented. A two-way chi-square analysis was performed to analyze the relationship between these groups of participants and leadership style. Table 5 shows that more first-born participants scored as relationship-oriented and more later-born participants scored as task-oriented. The difference

between these groups is significant, $X^2(1, N=51) = 5.825$, $p < 0.05$. The opposite of what was expected was shown in this analysis.

Table 5.
Raw Scores of Birth Order in Relation to Leadership Style of the Extreme Groups

Sibling Position	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Totals (N= 51)
First-born children	10	17	27
Later-born Children	17	7	24
Totals (N=51)	27	24	51

Note: $p< 0.05$

Table 6 shows the raw scores for number of siblings in relation to leadership style of the extreme groups. The participants have been divided into groups depending on how many siblings they have in their family. None of the analyses were significant. Each group almost had an even split between task-oriented and relationship-oriented leadership style. Therefore, there was no difference between number of siblings in the family in relation to leadership style. Since there were a very small number of participants who had three or four siblings, the results were not interpretable. No participants had five siblings among these two groups and only one participant had six siblings, so an analysis was unable to be performed for that participant. A correlation was done to analyze the relationship between the number of siblings as a whole and leadership style.

The result showed a negative correlation between these two measures, r_{pb}= -.129. However, this correlation was not significant, $p > 0.05$.

Table 6.
Raw Scores of Number of Siblings in Relation to Leadership Style of the Extreme Groups

Number of Siblings	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Totals (N=51)
One Sibling*	15	13	28
Two Siblings**	7	8	15
Three Siblings***	1	3	4
Four Siblings****	3	0	3
Five Siblings*****	0	0	0
Six Siblings******	1	0	1
Totals (N=51)	27	24	51

*Note: *p > 0.05 **p > 0.05 ***p> 0.05 ****Chi-square analysis could not be performed because all participants in this group scored as task-oriented ***** No participants had five siblings ******A one-way chi-square analysis could not be performed because only one participant had six siblings*

The remaining three tables show sex in relation to leadership style. Sex is not a variable that was originally being studied in this experiment. However, since the information was given, it might be helpful to see if there is a significant difference between the sexes in relation to leadership style. Table 7 shows the raw scores of sex in relation to leadership style. A two-way

chi-square analysis was used for this. More males scored as relationship-oriented leaders while more females scored as task-oriented leaders. However, there was not a significant difference between sexes in relation to leadership style, $X^2(2, N=190) = 3.153$, $p > 0.05$. When participants scoring as socio-independent leaders were excluded entirely, the results were not significant between those scoring as task-oriented and relationship-oriented as well, $X^2(1, N=158) = 1.822$, $p > 0.05$. Raw scores for task-oriented leadership style and relationship-oriented leadership style remained the same when socio-independent participants were excluded.

Table 7.
Raw Scores of Sex in Relation to Leadership Style

Sex	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Socio-Independent Leadership Style	Totals (N= 190)
Male	24	28	14	66
Female	61	45	18	124
Totals (N= 190)	85	73	32	190

Note: p> 0.05

Table 8 shows the raw scores of sex in relation to leadership style where the scores are split in half to just represent task-oriented and relationship-oriented. A two-way chi-square analysis was used for this analysis. When the scores were split into task-oriented and relationship-oriented only, more males and more females scored as task-oriented. However, there

was not a significant difference between the sexes in relation to leadership style, $X^2(1, N= 190) = .330, p > 0.05$.

Table 8.
Raw Scores of Sex in Relation to Leadership Style Excluding the Socio-Independent Leadership Score Values

Sex	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Totals (N= 190)
Male	36	30	66
Female	73	51	124
Totals (N= 190)	109	81	190

Note: $p > 0.05$

Table 9 shows the two-way chi-square analysis results for the two extreme groups within task-oriented and relationship-oriented. More females scored as task-oriented but there was only a two score difference. More males scored as task-oriented but there was only a one score difference. Therefore, results were not significant, $X^2(1, N= 51) = .001, p > 0.05$.

Table 9.
Raw Scores of Sex in Relation to Leadership Style of the Extreme Groups

Sex	Task-Oriented Leadership Style	Relationship-Oriented Leadership Style	Totals (N=51)
Male	8	7	15
Females	19	17	36
Totals (N=51)	27	24	51

Note: $p> 0.05$

DISCUSSION

What was found for birth order?

Birth order in relation to leadership style

When the task-oriented and relationship-oriented groups were split in half to obtain the two extreme groups, results for the relationship between birth order and leadership style were significant. More first-born children were indicated as being relationship-oriented and more later-born children were indicated as being task-oriented. These results are the opposite of what was originally predicted. The majority of literature and research studies have shown that more first-born children are task-oriented and more later-born children are relationship-oriented because of the way they are developed by their parents and those around them. The reason the two extreme groups were analyzed is because these groups are the participants that were heavily task-oriented or relationship-oriented. This is the most important group of analyses because it measures the differences between those participants who rate their least preferred coworker very favorably or very unfavorably. It can be concluded that these participants are set in their leadership style and know whether or not they would be more concerned with the task or about interpersonal relationships. However, it is also important to discuss the other results. All other results for the analyses between birth order and leadership style were not significant and this can be attributed to the fact that many participants scored towards the middle of the spectrum. Therefore, they may share qualities of all leadership types which result in conclusions that are not as strong.

It is also useful to note that the majority of participants scored as either task-oriented or relationship-oriented. In a traditional bell curve, the majority of participants usually fall in the middle of the curve, with fewer participants on each end of the spectrum. However, in this study,

the majority of participants fell on each end with fewer in the middle. This shows that the task-oriented and relationship-oriented leadership styles are legitimate. This means that the majority of people are one or the other, even though those participants scoring towards the middle may have qualities of the opposing style. In the literature review, it mentions that there is not much research done on the socio-independent style. The socio-independent style has also been described as including those individuals who do not have a particular style and are stuck in the middle of either extreme. These people are neither task-oriented nor relationship-oriented.

Reasons for Results

A family dynamics hypothesis

As mentioned above, more first-born children scored as relationship-oriented and more later-born children scored as task-oriented in the significant analysis. When thinking in terms of family dynamics, there may be reasons as to why these results were found. Even though later-born children have been described as being more socially-oriented and more concerned with interpersonal relationships, they may be quite the opposite. Later-born children may feel the need to compete with their siblings throughout their life for attention from their parents or other family members. They may also struggle to find their place in the family because they are not the first child. This may lead them to become more directive and assertive in personality because they are always trying to outdo their older siblings.

First-born children have been described as being the most likely to identify themselves with adult authority since their parents are the first main influences on their lives. However, first-born children can start to act like the parent figure when their siblings come into their family. The parent figure may not mean being authoritative and aggressive in this case. They can nurture their younger siblings because they are interested in being an influence in their younger sibling's

life. This may allow them to become relationship-oriented because they are concerned with establishing and maintaining their relationship as a nurturing older brother or sister. In result, later-born siblings are the ones being nurtured by the older siblings and the older ones are maintaining the relationship. Therefore, the later-borns are not the ones maintaining it. They end up being the ones who compete for attention once they start getting older.

Gaps in age between siblings

Another reason as to why more later-born children may have scored as task-oriented may be because they have a huge age difference between them and their other siblings. The variable of age difference between siblings was not controlled for in this experiment. If siblings have a huge age difference between them, then they could possibly be treated as only children since they are not close in age. Only children are first-born so some later-born children may be treated as a first-born child due to the age difference. If there were later-born children in this study that had a huge age difference between them and the older siblings, this may have caused them to score as task-oriented even though they are not a first-born child. In contrast, the first-born children may be relationship-oriented in this case because they act as a role model for the younger siblings since they are much older. It is not likely that many participants in this experiment have a family structure such as this, but it is still a slight possibility.

Siblings who do not live with each other

Another factor to take into consideration is those participants who have not lived with their other siblings the majority of their lives. This may cause later-born children to become task-oriented because they are brought up as first-born children. Siblings that are close in age but live with different parents may be developed differently than if they lived together. In contrast, first-born children may become relationship-oriented because they are concerned with keeping

their younger siblings in their life even though they do not live with them. They are the older siblings so they are the ones who take the responsibility of maintaining the sibling relationship despite the distance. Participants in this study could have family systems that are similar to this. This factor was another one that was not controlled in this study.

Limitations in the study guidelines

There are so many factors to consider when studying this particular topic and so many variables when it comes to birth order in general. The birth order guideline of the study was that the participants must have remained in the same sibling position from birth until age ten, so this means no addition of older step-siblings or adoptive siblings before age ten. Even though the students were asked if this was clear to them, there still may have been students who did not understand this guideline. At the time, it seemed like a clear guideline that would give the researcher the participants needed for this study. However, it is realized now that this guideline did not control for those participants possibly not living with their siblings when they were younger or age differences in between the siblings. All of these variables are hard to control for at the same time because they can limit the participant pool. When working on a relatively small campus, recruiting participants may be hard and the researcher wanted to have as many participants as possible. When some participants came to fill out the questionnaires, they asked additional questions in relation to this guideline which led the researcher to believe that they did not understand it like they said they did. There is no way for this to be proven, but it is something to take into consideration. The whole reason for this guideline was to prevent any change in sibling position from birth to age ten. However, if some participants did not understand this guideline then they may have had addition of older siblings which would change their sibling position in the family at an early age.

Participants were from one area

Participants in this study were only chosen from psychology classes on one college campus. Therefore, it included an exclusive group of participants. Allegheny students come from a higher socio-economic class also since the tuition of the school is high. The students and their families have to be able to afford it. Socio-economic status may have influenced the results because children from higher socio-economic status have more resources available to them during early stages of development. They can afford the preschools and tend to grow up in a more positive environment around people of similar statuses. If the students had come from low socio-economic status then they may have been socialized differently. They may have grown up in a hostile environment and this may have an influence on the results as well. A child's environment is important because it helps shape their personality and behavior. If children come from secure families who can afford resources for their children, they may be developed to score more towards the middle because they will have qualities from all leadership styles. If they grow up in hostile environments, then they will most likely be developed differently and may show different results. Growing up in a positive environment may allow children to develop qualities from all styles because they are encouraged to maintain healthy relationships while still maintaining control over certain situations.

What was found for number of siblings?

Number of siblings in relation to leadership style

The hypothesis for number of siblings was that if a participant had fewer siblings, then the participant would be task-oriented. If the participant had more siblings, the participant would be relationship-oriented. This is what the majority of literature suggests. For all four analysis groups, there was a negative correlation between number of siblings as a whole and

leadership style. Since there were negative correlations in all cases, it means that participants with fewer siblings scored as relationship-oriented more than task-oriented. However, none of the correlations were significant. In this study, results showed the opposite of what was predicted by the literature.

The participants were put into groups based on how many siblings they had in their family. Each group was tested to see if there was a difference between the leadership styles. None of the chi-square analyses showed significant differences between the groups except for participants with one and two siblings in the analyses done on all participants and all leadership styles. Although, this significant difference between the leadership styles with participants with one or two siblings may be due to the fact that very little participants scored as socio-independent in each group as opposed to the other two main leadership styles. There remained little difference between the raw scores of participants scoring as task-oriented and relationship-oriented in all conditions for participants with one or two siblings. There were also very few participants with three or more siblings so the results were not interpretable for those groups.

Reasons for Results

Influences outside the family

As mentioned previously, some theories suggest that it is not sibling position that determines leadership style, but the number of siblings a child has in his or her family. If a child has few siblings, he or she will be more task-oriented in their leadership style regardless of sibling position. In contrast, if a child has many siblings, then he or she will be more relationship-oriented regardless of sibling position. This has been attributed to the fact that since there are more siblings in the family, the children will feel the need to take care of each other.

Parents will not have as much of an influence with each child when there are more children than if there are very few children.

However, since the results showed that there was not a significant difference in the number of siblings in a family, this may be due to the fact that children are not completely influenced by the home environment. Children can be just as influenced by peers as they can by their parents or other siblings. If a child attends preschool, this could have a profound effect on the child because, even if a child is first-born, he or she can attend preschool and learn to be nurturing in the preschool setting with their peers. Even though first-born children are the first to be exposed to the authoritative ways of their parents, they still can be affected by outside influences.

In contrast, children that do not attend preschool may be developed differently than those who do attend preschool because then the family environment will have the most affect on them. If children are raised by their parents and do not have peers in their life when they are young, then they may become task-oriented if they are first-born or relationship-oriented if they are later-born. So, the results of this study show that children may be influenced by many factors when they are young, not just family members. It is not only limited to their parents and siblings, which is what the majority of theory uses to explain such findings about number of siblings and leadership style.

What was found for sex?

Sex in relation to leadership style

Sex of the participants was not a main variable being tested in this study. In fact, there is no literature on sex because it was not a factor to be considered originally. However, since the information was given on each questionnaire, it was useful to perform analyses and see

if there was a significant difference between males and females. However, there was not a significant difference between males and females found in all groups of analyses, even when the extreme groups were tested. Therefore, this study shows that there is no difference between males and females when it comes to their leadership styles.

Reasons for Results

Positive home environment

Given that the popular view on males and females is quite different, these results would have been predicted to show that males are task-oriented and females are relationship-oriented. The reason why men would be matched up with that particular style would be because men are considered to be strong and strict. They are seen as not being as concerned with interpersonal relationships as females. Therefore, it is useful to note that, even with the extreme groups, no differences were shown between males and females. This can be traced back to the socio-economic status explanation. The males and females of this study are students of Allegheny College, which means they were most likely brought up in families of middle to high socio-economic groups. Regardless of sex, their families were able to provide similar resources for them when they were younger and were brought up in a positive environment. Their families are most likely supportive of them and have encouraged positive relationships with others. Therefore, males and females scored in similar ways in this study.

Recruited from Psychology courses

Another factor that is important to discuss is the fact that these students were recruited through their Psychology classes. Therefore, it is assumed that the majority of these participants are Psychology majors or minors. The range classes that the participants were recruited from were introductory courses to upper-level courses. It may be true that many of these participants

want to go into the Psychology field where many of the jobs deal with working directly with other people or behind the scenes on research. Therefore, many of these participants could eventually want a future career where they improve the lives of others by either working directly with them or working on research to help them. In order to enter careers like this, they have to be able to maintain healthy relationships with others while acting like the authoritative figure. They will have to possess qualities of both leadership styles, even though they might have more qualities of one or the other. If participants were taken from another course of study that does not involve working with people as much, the results of this study may have been different. This explanation can be used to explain the results for sex in relation to birth order as well as the other variables.

What can be taken away from this study?

Using the guidelines to create a homogeneous population was supposed to strengthen the results of this study, which could have been used to strengthen the overall results of previous studies done on this topic. When dealing with birth order, many variables need to be taken into consideration which is why there were specific participant guidelines for this study. However, as mentioned above, after finishing the study, the guidelines could have been more concise. Although, other studies found on this topic did not specify if the populations were homogenous at all. Therefore, the population for this study was more homogeneous and controlled for more confounding variables than the other studies. With that being said, the results for this study are stronger results than those shown in previous studies.

First, due to the significant results from the analysis of the extreme groups of participants and the bell curve distribution, it may be safe to conclude that the socio-independent leadership style is one that is not well researched and is not shown among the people. People

classify themselves as task-oriented or relationship-oriented and rarely in the middle. Therefore, more research needs to be done on this leadership style so that researchers are more aware that, even though a small number of people consider themselves as socio-independent, this style still exists.

Second, children are not only influenced by their family environment but their social environment as well. Preschool friends or other children their age in their neighborhood can have an effect on them. These influences can have an effect on their leadership style at a young age as well as their parents and other siblings. This would be a factor that would be hard to control for in an experiment but it would be useful to take into consideration in later studies done on this topic.

Third, considering that these results have not been consistent with the majority of past research and theory, even with the more homogenous population, research should continue to be carried out on this topic. Narrowing the guidelines and gathering participants from a larger area is a good suggestion. It would be useful for researchers to continue to study this because there have been conflicting results in the past and with this present study. By creating more specific guidelines than the ones used in this study and gathering participants from many areas, stronger results may be shown. Suggestions for further research are given in the following section.

Further research

If further research is done on this topic, the population should be even more homogenous than it was for this study. In order for this to happen, there will have to be a less exclusive selection of participants over a bigger area. Since college students in one particular concentration of classes were chosen for this study, it would be useful to extend research to a few

cities that include different types of people. As long as the participants are taken from a larger area, homogeneity may be possible while still maintaining a decent sample size.

Instead of announcing guidelines to participants before they sign up, it may be more effective for participants to be interviewed before being selected for the experiment. They can be asked questions such as number of siblings in their family, sibling position, if they've ever had any step-siblings or adoptive siblings at all throughout their life, if they have lived with their siblings until age ten, etc. This way, direct answers can be given for the researcher to decide if they are qualified. Reading guidelines to participants and then expecting them to sign up can be risky because they may not understand them even if they say they do. It is also hard to make a complete list of guidelines reflecting variables than need to be controlled for in an experiment. Therefore, interviewing participants will take longer but might be worth it in the end of the experiment. Also, if an interview can not be performed due to the amount of participants willing to take part in the study, a simple questionnaire can be given to the potential participants to fill out before they are selected for the study. This can assure that the population is homogeneous.

It may also be useful to use more than one leadership questionnaire. The reason why Fiedler's Least Preferred Coworker Scale was the only one used in this study was because, in past research, this scale appeared to have consistent results when used in a few studies. However, since the results found in this study are not consistent with those found in those previous studies, another questionnaire partnered with this one may be helpful. The Leadership Opinion Questionnaire would be a great questionnaire to go along with Fiedler's Least Preferred Coworker Scale because that one was used in a previous study and the researcher even claimed that the LOQ was better than Fiedler's scale. Therefore, it may be helpful to see how the results come out for both questionnaires when using the same participants. If the tests come out with the

same results, then the conclusions will be stronger. Therefore, further research can be done on this topic to contribute to previous results found on this subject. Stricter guidelines and other questionnaires in conjunction with this one is the best suggestion. Also, gathering participants from multiple areas is a good suggestion as well so that the participants are interested in different areas of concentration and come from different socio-economic statuses. It will be beneficial to continue studying this topic since contradictory results have been found on it. Researchers should continue to search for the best way possible to analyze the relationship between birth order, number of siblings and leadership style.

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