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Exploring evolutionary psychology perspectives on Sex differences in aggression

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Abstract:

This research aims to extend the understanding of sex differences in aggression by applying the lens of Life History Theory to evaluate the effects of age, muscle, occupation, and other variables on aggression tactics. The study involves a resource competition game with 200 participants of both sexes, who can use direct or indirect aggression strategies. A post-game survey will assess the relationship between these variables and the differences in aggression levels. The authors predict that even when taking into account other factors affecting aggression, men will prefer direct aggression, and women will prefer indirect aggression. In conclusion, this work is intended to expand current knowledge of sex differences in aggression and contribute to the field of evolutionary psychology.

Keywords: Sex differences, Aggression, Evolutionary psychology, Life History Theory.

1. Introduction

Aggression is mainly divided into direct and indirect aggression. Direct aggression usually refers to the deliberate use of physical behaviors such as hitting and kicking others in order to hurt them[1]. Indirect aggression, also known as non-disclosure aggression, takes on more subtle forms such as verbal abuse, gossip, exclusion and alienation[2,3]. In the academic field of evolutionary psychology, many studies have explored sex differences in aggression from factors such as age, physical fitness, and geography[4,5]. For example, competition between males produces sex differences in body size, and this evolutionary sex difference is closely linked to physical aggression events in males[6].

Aggression is based on costs and benefits determined by natural selection, the cost being injury and the benefit being successful reproduction, with resource-limited males needing to risk injury to compete with other males for the possibility of successful reproduction[7]. Overall, natural selection has determined that males are more inclined to participate directly in aggressive behavior, and there are also studies that have explored sex differences in aggressive behavior through different factors. Overall, these studies confirm that there are sex differences in aggressive behavior.

Nevertheless, although sex differences in aggressive behavior have been studied through different factors, studies of sex differences in aggressive behavior in different social contexts are not common[8]. For example, whether sex differences in aggression in people's workplace lives change because of the constraints of social networks. It can be seen that most studies on sex differences in aggressive behavior are limited to the analysis of a single factor, and these differences should be the result of multiple complex factors[9-11]. Therefore, this study suggests that sex differences in aggressive behavior can be better explained by examining multiple factors.

Furthermore, life history theory includes both fast life history strategies and slow life history strategies, with slow life history strategies choose to delay gratification by investing resources in the future, while fast life history strategies focusing more on current benefits[12,13]. This strategy is often used not only in studies of reproduction and parenting of offspring, but also in studies of individual behavior[14]. Consequently, this study will use the life history theory as the theoretical basis to explore the sex differences in aggression combined with a variety of factors.

Thus, the present study proposes a research hypothesis based on the research review that a combination of factors explains sex differences in aggression better than a single

factor from an evolutionary psychology perspective, and that by analysing the males still prefer direct aggression whereas females still prefer indirect aggression.

2. METHODOLOGY

2.1 Participants:

The open recruitment sample total 200. 100 males and 100 females. There is no limit to occupation, age or body size.

2.2 Procedure:

This study will test the sex differences in aggressive behavior through resource competition games. The rules of the race are that in the resource competition race, all the participants are assumed to be breeders and the one who reproduces the most offspring at the end of the game through the game will be the winner. Firstly, participants will be given an initial resource of 10 game coins. Secondly, the game consists of 10 rounds, and before the start of each round the participant will have to choose one of the slow life history strategies or fast life history strategies. The player who chooses the fast life history strategy completes the high risk but high reproduction task, while the player who chooses the slow life history strategy selects the defensive system and completes the high defence and low reproduction task, with each player being able to choose a different decision for each turn. In the end, the player with the most offspring from all rounds combined wins.

In short, players who choose the fast life history strategy need to earn game coins by robbing other players' game coins; If successful, the player will have the opportunity to breed 4 offspring per turn for only 2 coins; if unsuccessful, the player loses 6 game coins and loses the opportunity to reproduce offspring during the current turn. The advantage is that the number of offspring can be increased quickly and reproduction is fast, but the task is risky and the survival rate of offspring is only half. In addition, slow life history strategy players can have a defence system to avoid being attacked by fast life history players. However, the participant must use 4 coins currencies per turn to reproduce just one offspring, which has the advantage of being virtually risk-free, with a 90% survival rate despite slower reproduction, and a reward of 6 game coins currencies per turn.

At the end of the competition, each participant will fill out a questionnaire that includes nine questions: age, gender, occupation, height and weight, who they came with, the competitive strategy they chose for each round and why, and how many resources they ultimately gained. The nine questions in this survey aim to measure sex differences in grabbing strategy choices and to explore the effects of four variables on sex differences in aggression. Firstly, sex differences in aggression will also be explored in the context of multiple factors. Secondly, it is possible to ascertain whether adolescents of different ages are indeed more likely than adults to engage in direct aggressive behavior. Moreover, it is possible to analyse whether physical workers are more likely to use direct attacks than mental workers by analysing participants from different occupations in the competition. Finally, it can be observed whether people with more strength are really more inclined to use physical aggression.

3. DISCUSSION

3.1 Possible outcome 1: Difference found

If the results indicate that there is difference between male and female in the use of direct and indirect aggression, this would support the hypothesis. To strengthen the conclusions presented, more specific data and statistical analysis would have to be provided. Such results would also support the hypothesis that even when other factors that affect sex differences in aggression are taken into consideration, males will still prefer direct aggression and females will prefer indirect aggression.

This could be explained from an evolutionary psychology viewpoint, stating that sex differences in aggression are due to differences in parental investment and intrasexual selection[15]. According to Artz, assaults on girls' sexual and social reputations are particularly evident in interfemale hostility[16]. Females, for instance, may use indirect aggression to compete for resources and power while males may use direct aggression to assert dominance and acquire females. This is in agreement with Björkqvist's assertion that due to the fact that females are physically weaker than males, they are more likely to use indirect forms of aggression[17].

3.2 Possible outcome 2: No difference found

If the results do not show difference between males and females in the use of direct and indirect aggression, this means that the hypothesis stating that multiple factors are more helpful in explaining sex differences in aggression than a single factor is not supported. It would also lead to a rejection of the hypothesis that males prefer direct aggression while females prefer indirect aggression when multiple factors are considered.

Several factors may explain the non-discovery of a correlation or a difference in the study. Such issues as sample size, measurement issues or lack of power that may not enable one to detect effects [18]. It is possible that the study design failed to capture certain contextual factors

such as the nature of the relationship between the two subjects and between the aggressor and the victim, and the outcomes of the aggression[19].

There could be other factors that were not considered in the study that might play a more significant role in determining aggression strategies than the ones discussed. For example, a person's empathy, self-control or narcissism can be a better predictor of the type of aggression the person will use than their gender[20]. However, family background, parenting, and examples observed in the environment can also determine the use of direct or indirect aggression irrespective of gender[21].

Cultural and social factors may also override any biological tendencies towards sex differences in aggression[22]. Sex differences are also reported in many societies and may determine the extent of tolerance of aggression in males and females[23]. Thus, it is possible that in societies where gender equality is valued or where aggressive behavior is not tolerated, the differences in direct and indirect aggression between men and women will be minimal or will not exist at all. Furthermore, the research design may determine whether sex differences in aggression are identified or not. The meta-analysis by Balliet and colleagues found that in more cooperative contexts, particularly when men and women are working together, sex differences in social behavior are reduced[24]. In mixed-sex interactions, gender roles may cause women to be more communal and men to be less aggressive. Rather, evolutionary reasons may make men wish to seem affable to females they are interested in. Thus, research on aggression that permits cooperation between subjects can eliminate potential sex differences in aggression, whereby men use direct aggression and women indirect aggression. The level of possible cooperation in the study design is thus a potential source of a non-significant effect for the gender variable.

However, there is also the indication that the distinction between direct and indirect aggression might not be as clear-cut as presumed, with both genders employing a variety of strategies that suited them best[18]. As Archer pointed out, the magnitude and the direction of gender differences in aggression are not fixed and depend on the type of aggression and age of participants[19]. Therefore, to understand the context and the kind of aggression under discussion, it is necessary to elaborate on the differences between the two sexes in aggressive behavior.

4. LIMITATIONS

In general, this study focuses on the impact of sex differences on people's aggressive behaviors through a resource competition game. We predicted that there are real differences in aggressive behavior between sexes--girls generally have more indirect verbal aggression while boys tend to behave more physically and directly.

It is important to note some certain constraints, however, which could lead to different outcomes. Firstly, the sample size of participants designed in this resource grabbing race is not large enough, and maybe insufficient people are invited to participate in the experiment. Therefore, we are not able to generalize the results or to confirm the magnitude of discrepancy exactly among players. The generalizability of the results is also limited by the time horizon and the specific group under our investigation. As a result, future studies should consider extending the duration of the study to see if participants adopt different competitive strategies over a longer time span. If the competitive game is continued to be longer eg. for a fortnight, then participants are thought to switch to differing strategies in order to achieve the goal of pursuing long-term benefits and ultimately win the game.

In the age of social media, people are paying more attention to the protection for personal privacy now. In other words, individuals today are usually reluctant to reveal their secret information to the outside world and their real character behind the 'social mask'. Because of these factors, in addition, they may conceal their potential for extreme behavior such as aggression in exceptional situations, leading to experimental inaccuracy. This finding is consistent with that of Donaldson and Grant-Vallone who demonstrated an employee's motivation to manipulate the answers to questions presented by organizational researchers[25].

Finally, although we controlled for a variety of potentially influential factors in our this experiment, we were unable to completely remove the potential impact from other unaccounted variables which would bias the results. The results designed in this study warrants deeper investigation into sex differences in aggression. Futureresearch efforts may consider increasing the sample size, employing multiple data sources, and further exploring unconsidered variables to deepen the reliability of the findings and conclusions of this study. Our predictions indicate that this kind of sex differences in aggression may be attributed to various aspects of selection pressure, including the differences in age group, powerful strength and occupation. For instance, men and women of the same vocational type can be recruited to engage in this race to control occupational variables, providing more precise understandings into pragmatic implications.

5. CONCLUSION

In summation, this research sets out to determine wheth-

er it can explain sex differences in aggression from the perspective of evolutionary psychology by considering additional factors. And there are likely two outcomes we forecasted. One is sex differences in aggressive behaviour can be found to exist that males tend to adopt direct aggression while females prefer indirect aggression. The other, on the contrary, is no gender difference found.

Regardless of the limitations mentioned above, the key strength of this study is the application of resourse competition games to identify their different choices of strategy. It is clear that a wider range of variables are covered here than previous studies have taken into account. We also propose the possibility that participants of different ages and disparate occupations may not engage in the same type of aggression[19].

The findings will be of assistance to reduce people's conflict in some specific situations in the future such as adolescent education and workplace cooperation[24]. Therefore, we are willing to encourage the public to comprehend and accept gender differences and to interact with others amicably in appropriate ways.

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