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Exams May be Dangerous to Grandpa's Health: How Inclusive Fitness Influences Students' Fraudulent Excuses

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ABSTRACT

Inclusive fitness theory states that maternal grandmothers are closest to their grandchildren because of their assured biological relation. Paternal grandfathers are the least close because of their two degrees of paternity uncertainty. The present study examined if this relationship influences undergraduate students' fraudulent excuses. The present study provides the first evolutionary perspective regarding the explanation behind this fraudulent excuse making. Results support inclusive fitness theory. Participants indicated a greater willingness to lie about their paternal grandfather's death as an excuse to miss an exam or class. They also indicate they are least likely to lie about their maternal grandmother's death.

INTRODUCTION

It is theorized that cooperative behaviors among kin, such as investment in offspring and altruism among siblings, are the product of positively selected genes that promote the overall inclusive fitness of themselves and any other beings that may share copies of this genetic code (i.e., kin members) (Hamilton 1964). Empirical evidence has found consistent support for Hamilton's inclusive fitness theory, revealing that individuals indicate a greater preference to save close kin over distant kin and non-kin in hypothetical life-or-death scenarios (Burnstein, Crandall, and Kitayama 1994). Ultimately, people are willing to incur great costs to increase their inclusive fitness and thus the likelihood of passing on these altruistic behaviors – whether these costs consist of giving one's time and/or resources to kin (e.g., raising one's offspring), or risking one's life to save kin (e.g., saving one's sibling from a burning house).

Internal female fertilization is said to play a key role in inclusive fitness among humans as well (Daly and Wilson 1988). Because fertilization is internal, males can never be certain that their putative offspring are in fact biologically related to them (Alexander and Noonan 1979). This allows for the ever-present possibility of cuckoldry. Thus, paternity uncertainty, coupled with greater maternal investment, influences the parent-offspring relationship in a way that decreases the amount of resources the putative father allocates to the offspring. Specifically, mothers invest more time, care, and available resources (Barash and Lipton 1997; Bjorklund and Pelligrini 2002), and are less aggressive (Daly and Wilson 1990), toward their offspring than

fathers. For instance, desertion, child abuse, and infanticide rates are higher for fathers than mothers (Daly and Wilson, 1988), while mothers seem to possess mechanisms that increase the probability of their offspring's survival (Maestripieri and Pelka 2002).

However, the parent-offspring relationship is not the only dyad that paternity uncertainty affects. Research has found that men and women tend to invest more in their sister's offspring than their brother's offspring (Gaulin, McBurney, and Brademan-Wartell 1997). In other words, one's maternal aunts and uncles are emotionally closer and more altruistic than one's paternal aunts and uncles respectively – signifying that even siblings are aware of their brothers' possibility of being cuckolded. Further research has concluded that maternal aunts play a larger role than any other aunt or uncle (Pashos and McBurney 2008).

A similar relationship is found in grandparent-grandchild relationships. Maternal grandmothers tend to be emotionally closest and most invested in the grandchildren – when compared to other grandparents – while the paternal grandfather possesses the least degree of emotional closeness and investment. Paternal grandmothers and maternal grandfathers invest more than the paternal grandfather but less than the maternal grandmother (Michalski and Shackelford 2005; Pashos, 2000). This has been supported several times with several different methods. Grandparents have reported this relationship preference toward their grandchildren (Michalski and Shackelford 2005). Grandchildren have also illustrated this preference in their self-reported emotional closeness with their grandparents (Euler and Weitze, 1996).

Preferential grandparental care based on paternity uncertainty has also been supported cross-culturally, finding support in countries such as Canada, France, Germany, Greece, the Netherlands, Thailand, the United Kingdom, the United States (Pashos 2000; Pollet, Nellison, and Nettle 2009; Pollet, Nettle, and Nelisson 2006; Salmon 1999; Steinbach and Henke 1998; Taylor 2005; Voland and Beise 2002). In short, maternal grandmothers (and sometimes both maternal grandparents) invest more in their grandchildren and are preferred as caregivers over paternal grandparents.

As evolutionary theory predicts, males can be cognizant of their own paternity uncertainty, which influences men's treatment of offspring. The literature described above has also shown that men are aware of their other male kin members' uncertain paternity as well – including male kin members who are not one's offspring (e.g., brothers and male cousins) – which has a negative influence on the treatment of grandchildren, nieces, nephews, and cousins. Very little work on how paternity uncertainty and inclusive fitness influences the treatment of grandparents has been pursued. Generalizing from the data described above, one could predict the emergence of similar patterns of bias against one's paternal grandparents – specifically, the fathers' fathers. However, because grandparental reproduction is quite rare, thus making investment unnecessary, other biased behaviors against grandfathers may arise.

Report of Grandparent Deaths as Fraudulent Excuses

Undergraduate students have been known to use the death of their grandparents as an excuse to miss exams (Abernethy and Padgett 2010; Caron, Krauss-Whitborne, and Halgin 1992; Roig and Caso 2005; Stephenson 2003). As Stephenson (2003) discussed, the probability of having one grandparent die in any given week is estimated to be about 0.204% (data was calculated from the U.S. government morality data for people age 65-74). Based on these numbers, the expected number of grandparental deaths ranges from .05 to .18 for classes ranging in size from 25 to 100 students (Stephenson, 2003).

Research has shown that roughly 2-3% of students have lied about the death of a grandparent in order to fraudulently miss class (Roig and Caso 2005; Caron et al. 1992). This percentage equates to five reports from a sample of 323 students (Abernethy and Padgett 2010), six noted fraudulent reports from a sample of 261 (Caron et al. 1992), and 12 noted fraudulent reports from a sample of 380 (Roig and Caso 2005). Ultimately, these studies all reported a grandparental mortality rate that is significantly higher than that of the overall mortality rate of people age 65-74, which indicates that undergraduate students are using their grandparents' "deaths" as a fraudulent excuse to miss class/exams.

Although there is a good estimation of how many students are using their grandparents' deaths as an excuse to miss a class/exam, this still begs many questions. For instance, of the students who report their grandparents' death as an excuse, are they consciously thinking about a specific grandparent when they report the death as an excuse? Do they specify the death of their grandfather or grandmother? And – what these authors consider to be the most important question – do the rules of inclusive fitness apply to students' choice of which grandparent to "kill off" for the sake of skipping class? If inclusive fitness theory holds true, students will be reporting the death of their fathers' fathers most often while reporting the death of their mothers' mothers the least often. Although many anecdotal stories have been spread throughout college campuses, few researchers have attempted an in-depth examination this phenomenon – and no research, as far as the authors know, has attempted to explain this phenomenon from an evolutionary perspective.

METHOD

Participants

Nine-hundred forty three undergraduate students (652 female, 291 male; M_{age} = 19.2 years, *SD* = 1.4) from two medium-sized universities in the Midwestern United States completed an anonymous online survey in exchange for extra credit in one of their psychology courses. All participants reported that all four of their grandparents were still living. The mean ages for all four types of grandparents were 73.67 years (*SD* = 7.99) for paternal grandmothers, 75.85 years (*SD* = 7.69) for paternal grandfathers, 72.72 years (*SD* = 8.08) for maternal grandmothers, and 74.59 years (*SD* = 8.13) for maternal grandfathers.

Materials and Procedure

The survey consisted of 40 questions across six sections. The order of the six sections was randomized. The questionnaire was constructed using the website Survey Monkey. All participants completed the survey online at their own leisure.

The first four sections asked the same nine questions but each pertained to a different grandparent. Each of these sections would begin by asking the participant to think of one of their grandparents in the following format, "think of your grandfather. Specifically, think of your father's father while answering the following questions." After that statement, 11 questions followed asking the participants if they have – and if so, how often over the past semester, two semesters, two academic years, and entire academic career – ever lied by saying this grandparent died, was currently dying, had just had a heart attack or stroke, or was visiting from out of town. One question asked for the grandparent's age. These nine questions were repeated for each grandparent. The order of the nine questions was randomized within each of the four sections.

The fifth section contained two hypothetical scenarios. The first scenario asked the participants to imagine that they have been very busy and have had no time to study for their upcoming psychology exam, leaving them with no option but to lie to his/her professor by claiming that one of their grandparents has died. After reading this scenario, the participants were asked to indicate which grandparent they would be most likely to say has passed away. They were instructed to do this by selecting the number "1" in the selection box next to that grandparent. They were also asked to rank the other three grandparents by order of likelihood of using their death as an excuse – "4" being the grandparent that they would be least likely to use as an excuse. The second scenario contained a similar hypothetical scenario asking the participants to indicate which grandparent they would be most likely to say has had a heart attack. The same 4-point forced choice ranking system described above was used for this scenario. The sixth section contained two demographic questions (age and sex).

RESULTS

Reported Fraudulent Excuses

Eighty-eight participants reported lying about their grandparents' death and/or failing health in order to miss class. This equates to approximately 9.3% of the sample – a number that is much greater than what has been reported in previous studies. One-hundred forty-eight participants (approximately 15.7% of the sample) reported lying about their grandparents visiting from out of town in order to miss class.

The 88 participants who reported lying about their grandparents' death and/or health reported a combined total of 470 instances in which they used these excuses during their academic careers. The 148 participants that reported using their grandparents' visit as an excuse reported using these excuses 311 times throughout their academic careers. See Table 1 for the total number of fraudulent excuses reported.

A chi-square analysis was used to examine the frequency of students' fraudulent excuses. More students reported their father's father as deceased, $\chi(3)^2 = 9.63$, $p < .05$, and having a heart attack or stroke, $\chi(3)^2 = 17.30$, $p < .001$, than any other grandparent. Although students reported using their father's father significantly more often than their mother's mother when using the "dying" excuse, $\chi(1)^2 = 5.40$, $p < .05$, there were no other significant differences among grandparents for that excuse.

Participants reported using their mother's mother fewer times than any other grandparent, but only when reporting that they were deceased, $\chi(3)^2 = 9.63$, $p < .05$. There was no significant difference between the mother's mother and father's mother when reporting health issues (i.e., heart attack and/or stroke) as an excuse. There was also no significant difference between the father's mother and mother's father when reporting that they were deceased or dying. However, when reporting health issues as the excuse, the mother's father was used a greater number of times than the paternal and maternal grandmothers, $\chi(3)^2 = 15.22$, $p < .01$.

When analyzing which grandparents were used in the "visiting from out of town" excuse, the father's mother was used significantly more often than any other grandparent, $\chi(3)^2 = 16.49$, $p < .001$. The mother's mother was used significantly more often than the mother's father and father's father, $\chi(3)^2 = 16.39$, $p < .001$. There was no significant difference between the numbers of reports for grandfathers.

Table 1: Total Number of Fraudulent Excuses Participants Reported Using.

	Death	Dying	Health Issue	Total Health/Life Excuse	Visit
Maternal Grandmother	34	27	24	85	84
Paternal Grandmother	45	40	23	108	106
Maternal Grandfather	50	35	41	126	63
Paternal Grandfather	64	47	50	161	62
Total	193	149	138	460	311

Hypothetical Fraudulent Excuses

Chi-square analyses were used to examine which grandparents the participants were most likely to report as deceased or having a major health issue in the two hypothetical scenarios. Participants ranked their father's father as the grandparent they would be most likely (i.e., giving the ranking of "1") to fraudulently report as deceased, $\chi(3)^2 = 31.16$, $p < .001$. The grandparent that was ranked second most likely to be reported as dead was the father's mother, $\chi(3)^2 = 16.59$, $p = .001$. Significantly more participants ranked their mother's father as third most likely to be reported dead, $\chi(3)^2 = 24.79$, $p < .001$. Participants ranked their mother's mother as the grandparent they would be least likely (i.e., giving the ranking of "4") to fraudulently report as deceased, $\chi(3)^2 = 68.05$, $p < .001$. See Table 2 for the participants' rankings of their grandparents.

Table 2: Participants' ranking of their likelihood to fraudulently use a specific grandparents' death as an excuse. $N = 943$ responses for each grandparent.

	First	Second	Third	Fourth/Last
Maternal Grandmother	173	216	209	345
Paternal Grandmother	230	260	239	214
Maternal Grandfather	226	238	270	209
Paternal Grandfather	314	229	225	175

Participants also ranked their father's father as the grandparent they would be most likely to report as having had a heart attack/stroke, $\chi(3)^2 = 38.09$, $p < .001$. The father's mothers and mother's fathers received a similar amount of second and third place rankings. However, the mother's mother was ranked as being least likely to be reported as having had a heart attack/stroke, and $\chi(3)^2 = 95.12$, $p < .001$. See Table 3 for the participants' rankings of their grandparents. The responses from these hypothetical scenarios also provide considerable support for the influence of inclusive fitness in student fraudulent excuse making.

Table 3: Participants' ranking of their likelihood to fraudulently use a specific grandparent's heart attack and/or stroke as an excuse. $N = 943$ responses for each grandparent.

	First	Second	Third	Fourth/Last
Maternal Grandmother	199	246	199	299
Paternal Grandmother	222	274	231	216
Maternal Grandfather	215	254	242	232
Paternal Grandfather	307	169	271	196

DISCUSSION

The present study was designed to investigate a potential evolutionary influence behind students' fraudulent excuses. Several studies have found that inclusive fitness has a strong effect on the grandparent-grandchild relationship – particularly that paternal grandfathers are not as close with their grandchildren as other grandparents – and this study has found how this relationship may influence student behavior.

When examining the number of fraudulent excuses reported, the data clearly supports inclusive fitness theory. When using fraudulent excuses regarding death and health, students reported using their paternal grandfather more often than any other grandparent. The participants also reported using their maternal grandmother the least often when using excuses regarding death and health. However, when using a fraudulent excuse with a more positive bias, students reported using their grandmothers significantly more often than grandfathers.

Data from the hypothetical scenarios also showed strong support for inclusive fitness theory. More participants rated their paternal grandfathers as the grandparent they would be most likely to use in their fraudulent excuses (i.e., saying that their grandparent died or had a heart attack), while rating their maternal grandmother as the grandparent they would be least likely to use in their fraudulent excuses. Participants tended to rank their paternal grandmothers and maternal grandfathers as either second or third – neither the most likely nor the least likely. The data show a clear preference for ranking the paternal grandfather as being most likely to be used in these excuses, and an obvious preference for ranking the maternal grandmother as least likely to be used – which is consistent with inclusive fitness theory.

Limitations and Directions for Future Research

Although the present study yielded novel results, it is obvious from these findings that not all students lie about their grandparents' deaths in order to be excused from an exam. In fact, it is a small minority of university undergraduates who do so. In addition, the data were obtained using a self-report methodology which may have yielded certain biases form the participants, including dishonesty in regards to reporting fraudulent excuses. Many students may feel uncomfortable in admitting that they have lied to their instructors.

Also, the present study did not ask the participants about the emotional closeness or overall health of their grandparents. Although all participants indicated that their grandparents were still living, it is possible that some grandparents were in poor health, or had a poor emotional relationship with the participant, which may have influenced students to use that grandparent as an excuse – or perhaps not use, because of guilt.

The social status of the grandparent may have also played a role in participant decision making. In western culture, men maintain higher social status than women. Because of this, the death of a male relative may carry greater convictive weight than the death of a female relative. Therefore, it is possible that students used their paternal grandfather's false death not because of paternity uncertainty, but because the death of a male relative (especially from the father's side) would be deemed more important, thus having more impact and being more excusable, than the death of a female relative.

The potential confounds discussed here could be controlled in future studies by adding an emotional closeness scale (Aron, aron, and Smollan 1992) and a social status scale, both subjective and objective (Adler, Epel, Castellazzo, and Ickovics 2000), along with items regarding the grandparents' health. These responses could then be statistically controlled for. We hypothesize that controlling for these factors may still yield similar results, but future research is necessary to rule out these viable alternative explanations.

Conclusion

Many studies have examined the utilization of grandparent death and injury as fraudulent excuses. However, people seem to explain the usage of these excuses on their believability. In other words, if someone needs to lie about the death of a family member, one's grandparent seems to be the most likely to die because of his or her age – thus lying about one's grandparent dying would be the most believable lie regarding death. The present study found that there may be more going on behind these fraudulent excuses. These data provide evidence for the first evolutionary psychological hypothesis behind why students use these excuses. The fact that students are more willing to use their paternal grandfather as an excuse may not simply reflect how believable his death would be, but may be a by-product of a mechanism that influences one's overall inclusive fitness. If a grandparent has to die in order to save a student's (i.e., kin member) status, it might as well be the grandparent that is least likely to be biologically related – the paternal grandfather.

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