НАУЧНИ СКУПОВИ

БАЊАЛУЧКИ НОВЕМБАРСКИ СУСРЕТИ 2018.

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Originalni naučni rad
УДК:616.89:37.015.3-057.875
DOI: 10.7251/FLZZB1901239G

EFFECTS OF THE QUESTIONNAIRE INSTRUCTIONS AND SOCIAL DESIRABILITY ON GENDER DIFFERENCES IN AGGRESSIVENESS AMONGST HIGH SCHOOL STUDENTS

Summary: *It was experimentally tested if gender differences in aggressiveness, which are sensitive to social desirability, can also be affected by the information provided in the questionnaire instructions. The sample comprised 451 (51% males) high school students. The E group received the instructions with all four aggressiveness questionnaire dimensions (A=Anger, V=Vengefulness, D=Dominance, and H=Hostility) defined. The C group received no definitions. Gender differences emerged (η_P^2=.135, p<.001), with boys having higher V and marginally significant higher D. There were no instruction or gender-instruction interaction effects. After controlling for two social desirability dimensions (impression management: η_P^2=.212, p<.001; self-deception: η_P^2=.055, p<.001), gender differences changed (η_P^2=.113, p<.001). The boys still had higher V, but the girls now had higher A and H. Whether the aggressiveness dimensions are explained/provided in the instructions or not, girls will report lower aggressiveness than boys. However, if social desirability scores are controlled for, some aggressiveness aspects will become higher for girls.*

Keywords: *questionnaire instructions, gender differences, aggressiveness, socially desirable responding.*

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Introduction

Common, colloquial view of men is that they are more aggressive than women. However, research findings on gender differences in aggression are often inconsistent and much more complex, showing that the differences vary as a function of many factors, such as: the level of emotional arousal, type and level of provocation, perceived consequences of aggression, methods of measurement, etc. (Anderson & Sorensen, 1999; Archer, 2004; Bettencourt & Miller, 1996; Eagly & Steffen, 1986; Hyde, 1984; Knight, Guthrie, Page, & Fabes, 2002; Lightdale & Prentice, 1994). As an illustration, research established that when unprovoked, men are more aggressive than women, but provocation reduces this difference, with contextual variables, gender differences in appraisals of provocation, intensity and fear of danger from retaliation, etc., acting as partial mediators of the attenuating effect of provocation (Bettencourt & Miller, 1996). With all that being said, if gender differences are detected, they do, in fact, more often go in direction of higher male aggression. This is particularly true for the self-report aggressiveness questionnaires, on which, for example, men are typically more likely (to a moderate degree) to score higher on scales such as physical aggression (Condon, Morales-Vives, Ferrando, & Vigil-Colet, 2006) and vengefulness (Dinić, Mitrović, & Smederevac, 2014). However, there is a potential issue with self-report questionnaires, regarding their susceptible to socially desirable responding (SDR).

SDR is a "tendency to give answers that make the respondent look good" (Paulhus, 1991, p. 17). Two SDR dimensions are most commonly reported in the literature (Subotić, Dimitrijević, & Radetić-Lovrić, 2016): Impression Management (SDR-IM) and Self-Deception (SDR-SD). SDR-IM refers to the overly positive self-presentation directed at others, while SDR-SD represents "positive illusions", which may even be honest, but are still unrealistically positive. Note that SDR is not exactly the same thing as lying, and authors have largely moved past the idea that SDR scales can be used to "purify" other scores of the variability attributable to lying (Paulhus & Vazire, 2007, Uziel, 2010). Instead, there is an argument that SDR, especially SDR-IM, should be redefined as a measure of interpersonally oriented self-control, which is a trait common for individuals who tend to exhibit high self-control in social contexts (Uziel, 2010).

Both manifest gender differences in aggression and differences in SDR are partially a function of the gender social norms. Specifically, it has been shown that participants' perceptions of their aggressive behaviors are more in line with the implicit theories about sex differences in aggression, than with their actual behaviors (Lightdale & Prentice, 1994). Men tend to overestimate how attractive women view aggression, they overestimate aggression of their peers and peer approval of aggression, as well as peer disapproval when an offensive action was not responded to in an aggressive manner (Vandello, Ransom, Hettinger, & Askew, 2009). When exhibiting aggressive behavior, women care more about the perceived consequences of aggression and other aspects of learned gender social roles and norms (Bettencourt & Miller, 1996; Eagly & Steffen, 1986). Similarly, women also tend to score slightly higher on SDR-IM, which is consciously aimed at „impressing others", while men score higher on the SDR-SD, which is mainly directed "toward self" (Subotić et al., 2016). Therefore, Subotić, Miholjčić, and Grozdanić (2018) hypothesized that gender differences in self-report trait aggressiveness could be (at least partially) the "artifacts" of the underlying SDR differences. They tested this on the Anger, Vengefulness, Dominance, and Hostility aggressiveness questionnaire (AVDH; Dinić et al., 2014). Their results showed that only around 6% of the overall aggressiveness' variance is due to gender, with no significant differences in Anger scores, but higher Vengefulness and Dominance scores in men, and higher Hostility scores in women. However, when SDR-IM and SDR-SD values were controlled for, the gender difference in Anger became significant, with women now having higher scores, the effect of higher Hostility scores in women became stronger, while previous gender differences in Vengefulness and Dominance disappeared. These changes were mainly due to SDR-IM, and to a lesser degree due to SDR-SD. This confirmed that there is an observable tendency of females to report slightly lower levels of trait aggressiveness and of males to report slightly higher levels of trait aggressiveness as a function of the SDR differences.

This research aims to both replicate and expand upon the findings of Subotić and colleagues (2018). Namely, we want to explore if gender differences in self-report trait aggressiveness, which are shown to be sensitive to SDR (which we aim to replicate), can also be affected by the way the information is provided in the aggressiveness questionnaire instructions. We wanted to test this experimentally, by administering the neutral/standard version of the AVDH aggressiveness questionnaire (standard instructions do not contain any mentions or descriptions of the dimensions measured) to the Control group

(C), while the Experimental group (E), is to be provided with the modified questionnaire instructions, in which every AVDH dimension is clearly defined and explained upfront. The AVDH statements are generally not saturated with indicators or descriptions of overt physical violence. Because of that, they might not be seen as highly dangerous or socially prohibited, thus allowing for some of them, if properly contextualized via instructions, to be more easily interpreted as markers of social status, of "having high standards and being judgmental", etc., rather than being "truly aggressive" and violent, and, in turn, they might appear to have a certain "appeal" for teenage females and males (and their views of social roles and gender norm stereotypes).

Our hypothesis is that the females from E group, compared to the females from C group, could be more open to report higher scores on aggressiveness dimensions that are more indirect in nature (which is a form of aggression that females, in fact, do often tend to use more; Archer, 2004), and have fewer attached social consequences and dangers. If they are upfront presented with the information that implies that not all aggressiveness is necessarily about directly and/or physically hurting someone and that manifestations that could be viewed as "judgmental", "bossy" or "having a temper" also fall under the umbrella of aggressiveness, the females from E group might be more "encouraged" to agree with the statements related to these dimensions (potentially even scoring on them higher than males). Under the AVDH trait aggressiveness model, this mainly refers to Hostility, and to much lesser extent Anger dimensions, which both include aspects of "neurotic hostility", are not physical in nature (Dinić et al., 2014), and both have previously shown sensitivity to SDR control, in terms of female scores becoming higher after the control (Subotić et al., 2018). Hostility includes statements that refer to the judgement of behavior of others (e.g., "I am often dissatisfied with the behavior of other people."). Teenage girls might compare description of Hostility with the descriptions of more "dangerous" types of aggressiveness, such as Dominance or Vengefulness, which are more likely to be interpreted as "the real aggressions" or "male's aggression ", which would, in contrast, make the Hostility „safe", or even „desirable" trait, because it implies that „I am in a position to judge others", but „I am not being male-aggressive". Anger might show the similar pattern, due to the statements such as: „I often react intenselly.", which resembles manifestations of Neuroticism, on which females are standardly showing higher scores (Costa Jr., Terracciano, & McCrae, 2001).

On the other hand, we expect that the males from E group, compared to the males from C group, might be more encouraged to report higher scores in dimensions such as Dominance, and perhaps – Vengefulness. Dominance includes statements such as: "People avoid conflicts with me because they know that they will get the raw deal."; "It is important to me to have the main say in my social circle." Vengefulness includes statements such as: "I always give others wat they deserve."; "I would take revenge on the one who did me harm." Men and boys often gain social status and reputation by acting "tough" and fear losing it if they appear passive or "weak" (Vandello et al., 2009). Dominance and Vengefulness include precisely the aspects which could be viewed as markers of high social status and strength, at least from the perspective of teenage boys, especially when seen in comparison with "less socially cool" descriptions of other dimensions, which are arguably more "female" and perhaps are more in line with "seemingly acting tough" rather than "actually being tough".

Dominance and Vengefulness both were higher in males in study by Subotić et al. (2018) initially, but those gender differences disappeared once SDR was controlled for. We are, however, not entirely clear regarding the expected influence that SDR might have on the experimental manipulation, i.e., while we expect Dominance and Vengefulness to be higher in males from E group compared to males from C group, and both to be higher than female scores, it is possible that the experimental effect will be canceled once SDR is controlled for. It is also an open question if the hypothesized female increases in Hostility (and perhaps Anger) scores in the E group will be amplified once the SDR is accounted for. Furthermore, note that our justifications for the experimental manipulation and the effect are tentative and are primarily reasoned "from the point of view" perspective, and, as one of our anonymous reviewers suggested, it is equally justifiable to expect that females will always underreport their trait aggressiveness, including more "subtle" forms of aggression (i.e., Hostility), as aggressiveness is simply too strongly "socially undesirable for females".

While Subotić et al. (2018) conducted the research on a sample of general population adults, we wanted to focus on a high school sample, since several important aspects of aggression behavior have been shown to differ between the genders at this general age (e.g., direct-indirect aggression; Archer, 2004), potentially making it easier for the effects of instructions variation to be detected.

Method

Sample and procedure

The sample comprised a total of 451 (51% males) upper grades high school students from four Republic of Srpska's schools. The sample was randomly (at a classroom level) divided into E (47.7%) and C (52.3%) groups. C group received standard aggressiveness questionnaire instructions, without any mentions or descriptions of aggressiveness dimensions, while E group received the extended, informative instructions, in which every dimension was defined/elaborated at the beginning of the questionnaire. For example, extended definition used for the Hostility dimension explained it as: "A hostile attitude towards other people, which does not have to be accompanied by an open manifestation of aggression but implies a reduced tolerance of someone else's mistakes."

Responding was done in a pen-and-paper fashion and data were collected anonymously.

Measures

Self-report trait aggressiveness was measured using a 23-item (5-point Likert type) AVDH questionnaire (Dinić et al., 2014), which measures: 1) Anger (α=.87, ω=.87), 2) Vengefulness (α=.89, ω=.89), 3) Dominance (α=.80, ω=.81), and 4) Hostility (α=.73, ω=.74) dimensions. Questionnaire instructions were modified for E and C groups, as previously explained.

The SDR was measured using a short version of the BIDR-6 questionnaire (Subotić et al., 2016), which measures: 1) SDR-IM (α=.76, ω=.76), and 2) SDR-SD (α=.71, ω=.71) dimensions. The instructions for BIDR-6 were not altered between the E/C groups.

Results

The results show that there are no E-C instruction (Wilk's Λ=0.995, F(4, 444)=0.505, η_P^2=.005, p=.732) or gender*E-C instruction interaction effects (Wilk's Λ=0.990, F(4, 444)=1.148, η_P^2=.010, p=.334), thereby refuting all of our hypotheses regarding the potential effects that informative questionnaire instructions might have on the resulting gender trait aggressiveness differences. In other words, providing participants with the descriptions of aggressiveness dimensions does not impact gender score patterns in any measurable way.

However, there is a main effect of gender, responsible for about 13.5% variance of the aggressiveness scores (Wilk's Λ=0.865, F(4, 444)=17.357, η_P^2=.135, p<.001). Boys have significantly higher Vengefulness score (F(1, 447)=31.494, η_P^2=.066, p<.001) and higher Dominance, with the effect approaching statistical significance (F(1, 447)=3.349, η_P^2=.007, p=.068) scores. Girls have higher Hostility, but the effect is trivial and nonsignificant (F(1, 447)=1.710, η_P^2=.004, p=.192). The same is true for the Anger differences (F(1, 447)=0.195, η_P^2<.001, p=.659). This is shown in Figure 1.

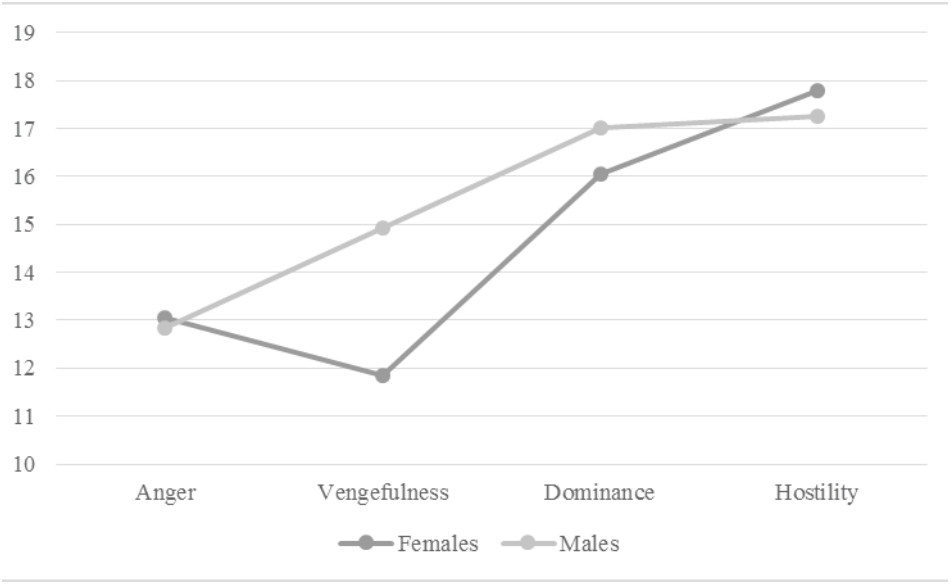

Figure 1. Gender differences in trait aggressiveness (without SDR control).

After two SDR dimensions are introduced into the model as covariates, they both showed significant multivariate main effects (SDR-IM: Wilk's Λ=0.788, F(4, 442)=0.505, η_P^2=.212, p<.001; SDR-SD: Wilk's Λ=0.945, F(4, 442)=0.505, η_P^2=.055, p<.001).[1] This had no substantial effects on the E-C instruction or gender*E-C instruction interaction effects, including no significant 3-way or 4-way interactions with the SDR dimensions. Introduction of SDR, however, did produce a change in the main gender effect, reducing its explanatory power from 13.5% to about 11.3% of explained aggressiveness variance (Wilk's Λ=0.887, F(4, 442)=14.053, η_P^2=.113, p<.001). The boys still had higher Vengefulness (F(1, 445)=13.429, η_P^2=.029, p<.001), but the girls now had higher Anger (F(1, 445)=5.268, η_P^2=.012, p=.022) and Hostility (F(1, 445)=10.642, η_P^2=.023, p=.001), with the previous borderline Dominance difference disappearing (F(1, 445)=0.059, η_P^2<.001, p=.809). This is shown in Figure 2.

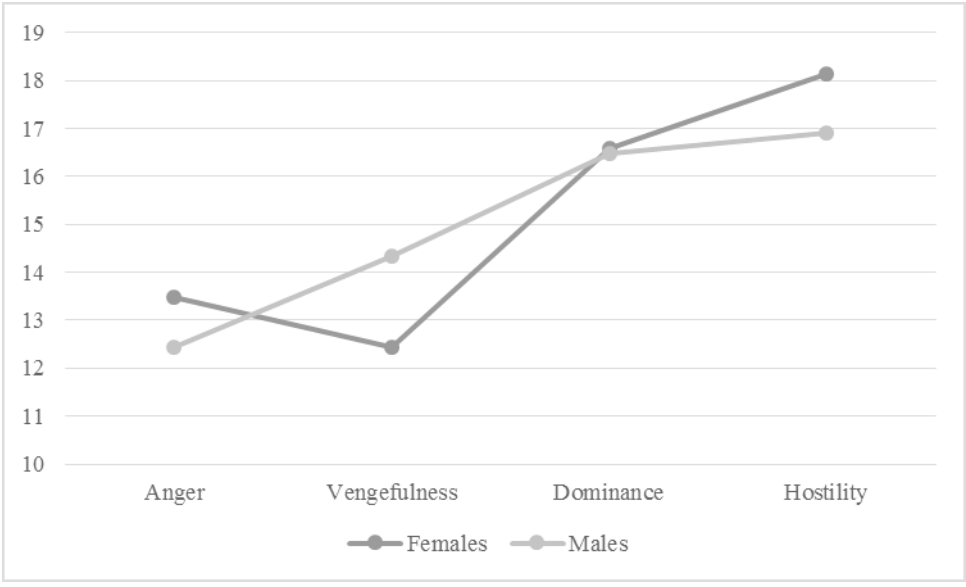

Figure 2. Gender differences in trait aggressiveness (with SDR control).

[1] Consistent with earlier findings (e.g., Subotić et al., 2016), SDR-IM was higher in girls (t(446.04)=4.37, g=0.41 p<.001), while SDR-SD was somewhat higher in boys (t(438.98)=-3.02, g=0.29 p=.003). Note that, in isolation, SDR-IM & SDR-SD explained 14.1% of Anger's variance, 21.5% of Vengefulness' variance, 15.7% of Dominance's variance, and 10.1% of Hostility's variance.

Discussion

Contrary to our expectation, whether the aggressiveness dimensions are explained in the questionnaire instructions or not, high school girls will report lower trait aggressiveness levels compared to boys all the same. However, if social desirability scores are controlled for, this all changes. Girl's scores tend to become slightly higher, and boy's scores tend to become slightly lower, resulting in some aggressiveness facets becoming higher for girls compared to boys, blurring the typically expected tendency of males scoring higher on aggressiveness questionnaires than females (Condon et al., 2006; Dinić et al., 2014).

In other words, similarly to previous findings of Subotić and colleagues (2018), obtained on a general adult sample, seemingly higher trait aggressiveness scores of high school boys are a function of the underlying social desirability. Girls slightly "underestimate" and boys slightly "overestimate" their scores on some dimensions, which is consistent with social gender roles & norms views of aggression (Bettencourt & Miller, 1996; Eagly & Steffen, 1986; Lightdale & Prentice, 1994; Vandello et al., 2009). Knowing about different facets of aggressiveness prior to making self-reports does not influence that. In other words, presented with the explanations of aggressiveness dimension or not, participants will not adjust their answers. This perhaps suggests that questionnaire's „face validity" is high from the get go (as pointed out by one of the anomnymous reviewers) and that topic of its measurement is sufficiently clear without further explanations and robust in regars to their modifications. Or it might mean that providing additional instructions (in the amount and form that we used) is not impactfull enough to produce changes as intense as the ones observed following the SDR control.

Subotić and colleagues (2018) concluded that "[…] on a face level, it might appear that men score higher on more self-report aggressiveness dimensions than women. However, this is mainly due to women caring more about making a deliberate overly positive self-presentation to others., i.e., having higher [SDR-]IM scores. When this is accounted for, women have comparable, or even higher self-report trait aggressiveness scores than men." (p. 47). This same sentiment basically holds true here as well.

Unlike the study by Subotić and colleagues (2018), however, in which that effect disappeared, one effect that "survived" social desirability control on our sample is Vengefulness. Higher Vengefulness score for boys diminished in the effect size but did not perish after the social desirability was accounted

for. This is also the most notable gender difference from the normative study by Dinić and colleagues (2014). This suggests that Vengefulness effect might be the most robust gender trait aggressiveness difference measured by the AVDH model.

In girls, the dimensions on which SDR control had the biggest impact are Hostility and Anger, both of which are thought of as "neurotic hostility" traits (Dinić et al., 2014). Given a known tendency of SDR measures to share "true" variance with common personality measures (de Vries, Zettler, & Hilbig, 2014; Koepke & Marten, 2018; Subotić et al., 2016; Uziel, 2010), it is reasonable to question could the same effects be obtained by controlling for some aspects of the "big" personality traits, instead of SDR – perhaps adjusting for Neuroticism/Emotionality could produce the same effect on said neurotic hostility/aggressiveness traits. Even stronger effect might be obtained by controlling for Honesty-Humility, given its known overlap with the SDR (de Vries et al., 2014; Koepke & Marten, 2018). We are inclined to believe so and we pose that as an open research question. At the same time, we can question what exactly did SDR control "adjust" in the aggressiveness trait scores and if what remains is even aggressiveness or just "a measurement error". We are inclined to believe that it is still aggressiveness, but arguably adjusted for the tendency to self-control in social contexts (Uziel, 2010). Does it go beyond that, we do not know at this point. However, it is very unlikely that the variance which remains after the SDR control is *only* a measurement error. For this to happen, SDR and aggressiveness traits would have to share very high percentage of true variance. Given that SDR has a multivariate effect on AVDH scales of 21.2% for the SDR-IM and 5.5% for the SDR-SD, and that, in isolation, they predict 10-15% percent of three AVDH dimensions, with the highest effect being 21.5% for the Vengefulness, this is obviously not the case.

There is, perhaps, a systematic gender bias present in the self-report aggressiveness measures, or at least a systematic underlying difference in ways in which males and females approach such measures, (even when it is done anonymously, with no real stakes). This is not to say that the aggressiveness scores adjusted for the SDR are necessarily "true" and the unadjusted ones are "false" or "fake", but there are mechanisms likely related to social self-control (Uziel, 2010) at play, which make seemingly simple issue of comparing female and male aggressiveness average scores to be much harder task than it appears to be. We though that prior information regarding the measurement might shift some aspects of that self-control. We were wrong. However, we

do believe that context matters, and that perhaps experimentally varying the levels of perceived threat and provocation (Bettencourt & Miller, 1996; Eagly & Steffen, 1986), while taking into consideration implicit expectations regarding sex differences (Lightdale & Prentice, 1994; Vandello et al., 2009) could help us understand the actual mechanisms behind the gender differences in self-report aggressiveness measures and their implications.

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EFEKTI UPITNIČKE INSTRUKCIJE I SOCIJALNO POŽELJNOG ODGOVARANJA NA POLNE RAZLIKE U AGRESIVNOSTI KOD UČENIKA SREDNJIH ŠKOLA

Sažetak: *Eksperimentalno je provjereno da li polne razlike u agresivnosti, koje su senzitivne na socijalno poželjno odgovaranje, mogu biti i pod uticajem informacija prezentovanih u uputstvu upitnika. Uzorak je obuhvatio 451 (51% muškarci) srednjoškolca. Ispitanici u E grupi su dobili instrukcije u kojima su definisane sve četiri dimenzije iz upitnika agresivnosti (B=bijes, O=osvetoljubivost, D=dominacija, H=hostilnost). Ispitanici u K grupi nisu dobili ove instrukcije. Dobijene su polne razlike (η_P^2=.135, p<.001), u smislu da su momci imali više skorove na O i granično značajno više skorove na D dimenziji. Nije se javio efekt instrukcije ili interakcije pola i instrukcije. Nakon kontrole dvije dimenzije socijalno poželjnog odgovaranja (upravljanje impresijama: η_P^2=.212, p<.001; samoobmana: η_P^2=.055, p<.001), polne razlike su se promijenile (η_P^2=.113, p<.001). Momci su i dalje imali više O skorove, ali su sada djevojke imale više skorove na B i H dimenzijama. Bez obzira na to da li su dimenzije agresivnosti objašnjene/prikazane u okviru instrukcija ili ne, djevojke će ostvarivati niže skorove agresivnosti nego momci. Međutim, ako se skorovi socijalno poželjnog odgovaranja iskontrolišu, neki aspekti agresivnosti će postati izraženiji kod djevojaka.*

Ključne riječi: *upitničke instrukcije, polne razlike, agresivnost, socijalno poželjno odgovaranje*