

## **Commentary on**

**Frazier, R. S., & Hasselman, F. (2015, April 21). Replication of Bressan & Stranieri (2008, PS, Study 2).**

(Open Science Framework Reproducibility Project)

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Bressan and Stranieri (2008) found a relationship between conception risk and preference for single (vs attached) men in partnered women; this relationship was lacking in single women. This effect was interpreted on the basis of the hypothesis that, during ovulation, partnered women would be “shopping for good genes” because they “already have a potentially investing ‘father’ on their side” (Bressan & Stranieri 2008, p. 150). Crucial to this interpretation, of course, is that the current partner is not perceived as a passing flirt, but as someone who is worth staying with long-term—someone who will share with the woman the burden of raising her children.

Frazier and Hasselman (2015) reported they replicated some of Bressan and Stranieri’s main effects, but not this key one. There were several potentially important differences between the original and replication studies, regarding some aspects of the method and, more importantly, of the participants. I will show that, notwithstanding these differences, if it is ensured that participants really do perceive their partner as one they would like to remain with long-term, Frazier and Hasselman’s data do in fact replicate Bressan and Stranieri (2008)’s key effect.

### **A. Differences between the original and replication studies that could have influenced the expected results**

#### **1. PARTICIPANTS’ NATIONALITY/CULTURE**

**Original:** Participants were Italian (and the study was conducted in Italian).

**Replication:** Participants were American (and the study was conducted in English).

**IMPLICATION:** Relationships might generally be perceived as more stable in Italy than in the USA, as suggested by divorce rates of 15% in Italy vs 48% in the USA (number of divorces per 100 marriages in 2001; comparison between countries. See <http://dx.doi.org/10.1787/467551243030>). Thus, the Italian participants in the original study may have been more likely than the American participants in the replication studies to feel that they would remain with their current partner in the future.

**NOTE:** This concern applies to both the lab and the online replications.

#### **2. VALIDATION STUDY**

**Original:** A validation study was carried out by asking women to classify how much men who are single, are in love, have a girlfriend, or are married are likely to be good long-term partners, to be available for a long-term relationship, or to be available for sex. The assumptions of the main study were consistent with the findings of the validation study. If the validation study’s results had been different, the main study’s assumptions and predictions would have been different.

**Replication:** There was no validation study.

**IMPLICATION:** It is possible that the findings of the validation study are culture-dependent. For example, the assumption that currently attached men are perceived as significantly less available for a new relationship than single men was crucial to the original predictions. Yet, a currently married man might be seen as less potentially available for a long-term relationship in Italy, where the divorce rate is 15%, than in the USA, where the divorce rate is 48% (see above). This could dampen the effect of men's relationship status in the USA sample, both overall (attached vs single men) and specifically (e.g., married man vs man with girlfriend).

**NOTE:** This concern applies to both the lab and the online replications.

### 3. PARTICIPANTS' AGE

The women in the lab replication were much younger than the women in the original study. In the lab replication, 74% of participants were 18 or younger. In the original study, fewer than 2% were 18 (nobody was younger).

Half of the women were older than 21 in the original study, only 1 woman was older than 21 in the replication (plus another of 46 years of age, who should have been excluded).

**IMPLICATION:** The current partner of an 18-year old is less likely to be experienced as a permanent partner—one who will help her raise her children—than the current partner of a 22-year old.

**NOTE:** This problem does not concern the participants in the online replication, whose median age was similar to the participants in the original study.

### 4. MOTIVATION

**Original:** Motivation was intrinsic. Women were asked whether they would like to participate in a study where they would rate men's facial attractiveness, and were motivated by the fact that the experience sounded interesting and fun. Some women insisted to participate even when they were told they did not meet the requirements. (They were allowed to participate, and their data were subsequently excluded.)

**Replication:** Motivation was extrinsic. Women received course credit for participating in the study. A time element was included by linking the amount of credit to the time taken to complete the study.

**IMPLICATION:** High motivation seems important for obtaining thoughtful and sincere responses. Some participants' behavior during the lab-replication study (see section C below) is consistent with the idea that, for a large number of participants, intrinsic motivation was low. This would create noise in the data and make null effects more likely.

**NOTE:** This concern as such does not apply to the online replication, whose participants were intrinsically motivated; they were people who had previously registered to participate in experiments (about their "conscious and unconscious preferences") and receive personalized feedback. Yet, these people are likely to be especially high in particular personality traits, such as curiosity, initiative, openness to experience. These same traits may also affect their attitude towards partners (e.g., increase the propensity to form and break relationships easily). The implications of this argument are discussed in section D (data re-analysis).

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## B. Other differences

### 5. PSYCHOLOGY VS NON-PSYCHOLOGY STUDENTS

**Original:** Participants were not psychology students, but students at the Faculty of Philosophy and Letters. None of the participants belonged to a subject pool or was familiar with psychology experiments.

**Replication:** All participants were psychology students. All participants belonged to a subject pool.

**NOTE:** Psychology students, especially when accustomed to participating in experiments (as in Frazier & Hasselman's online study) or under some pressure to participate (as in Frazier & Hasselman's lab study) might have a less ingenuous and/or less committed attitude than non-psychology students. Psychology students might also be more likely to form expectations about what the results should be.

## 6. LAB VS CAMPUS SETTING

**Original:** The experiment was carried out in a quiet corner of the hall of the Faculty of Philosophy and Letters; women who were entering the hall were asked whether they would like to participate into the study.

**Replication:** The primary-replication experiment was carried out in a laboratory.

## 7. ONLINE-REPLICATION PROCEDURE

In the online replication, data were collected online and the method was different in a number of ways, including multiple presentations of each face (rather than one presentation) and a memory test for each face/label combination (rather than having the participant read the label aloud).

## 8. QUESTION ORDER

In the replication studies, participants answered questions about their sexual orientation, hormonal contraceptive use, marital status and pregnancy at the beginning of the study rather than at the end.

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### C. Sources of noise in the replication data

The lab-replication data file indicates that:

- 15 participants "arrived late/early, did not follow instructions, had previous knowledge of the study, etc",
- 39 participants "forgot to read labels, misread labels, gave ratings before reading labels, questioned labels, asked explicitly whether label should affect her rating", and
- 41 participants were "not paying attention, went through very fast, phone usage".

None of the above participants were excluded at the data analysis stage.

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### D. DATA RE-ANALYSIS

The main result in Bressan & Stranieri was the relationship between conception risk and preference for single (vs attached) men in partnered women. This relationship was expressed in the paper by the significant correlation  $r = .32, p = .001, n = 100$ . (For single women, the same correlation was nonsignificant,  $r = -.02, p = .82, n = 98$ . Note that, although the correlations for partnered and single women are significantly different, this difference was not the point of the paper.)

As mentioned before, the interpretation of this effect relies on the hypothesis that, during ovulation, partnered women would be "shopping for good genes" because they "already have a potentially investing 'father' on their side" (B & S, p. 150). Vital to this interpretation, of

course, is that the current partner is not perceived as a passing flirt, but as a long-term companion—one who, should the woman become pregnant, is guaranteed to invest in her and in her child.

This crucial perception may differ between the original and the replication samples, given the many differences between them detailed above. For this reason, I reexamined the lab-replication data looking at specific indices of the perception that one's current partner could become a long-term one and offer support in the future. In an unpublished conceptual replication of Bressan & Stranieri I have recently performed, I found that the best such predictor was the score given by the participants to their partner's personality attractiveness. The correlation between conception risk and preference for single men was nonsignificant in the overall sample, but it was significant in women who gave higher scores to their partner's personality, and strongest in those who used the maximum score (=10).

I ran the same analysis on Frazier and Hasselman's lab-replication data. **For the women who gave the maximum score (=10) to the personality attractiveness of their current partner, the partial correlation between conception risk and preference for single men, controlling for Condition (=Album), was significant:  $r = .31$ ,  $p = .038$ ,  $df = 42$ . (For single women, the same partial correlation was nonsignificant,  $r = .06$ ,  $p = .48$ ,  $df = 165$ .)**

As a control, I also ran the same analysis on Bressan and Stranieri's original data. Only 25 women gave a top score of 10 to their partner's personality attractiveness, hence I also included women who gave a score of 9. For the Italian women who gave either 9 or 10 to the personality attractiveness of their current partner, the partial correlation between conception risk and preference for single men, controlling for Condition (=Album), was significant:  $r = .34$ ,  $p = .012$ ,  $df = 52$ . (For single women, the same partial correlation was nonsignificant,  $r = -.01$ ,  $p = .90$ ,  $df = 95$ .)

**Thus, the key effect obtained in Italy was actually replicated in the American LAB replication (and vice versa).**

Next, I reexamined Frazier and Hasselman's online-replication data. Interestingly, partner's personality did not seem to make a difference for these women. I do not know why, but I can make an educated guess. The online participants were people who, prior to this specific research, had registered to participate in experiments "for fun" and for receiving "personalized feedback" (Frazier, personal communication). It stands to reason that these people are likely to be especially high in particular traits, such as curiosity, exploratory tendencies, openness to experience, or self-centeredness. These same traits may well affect their attitude towards partners also (e.g., increase the propensity to form and break relationships easily). For these participants, the attractiveness of partner's personality did not appear to play a role, but a stronger indicator of the perception that one's current partner was deemed worthy to become a long-term companion did. This was the answer to the question "Would you like to marry your current partner?". **For the online-replication women who answered "Yes" to this question, the correlation between conception risk and preference for single men, controlling for Condition (=Album), was significant:  $r = .25$ ,  $p = .031$ ,  $df = 75$ . (For single women, the same partial correlation was nonsignificant,  $r = .11$ ,  $p = .12$ ,  $df = 186$ .)**

As a control, again, I also ran the same analysis on Bressan and Stranieri's original data. For the Italian women who answered "Yes" to the question "Would you like to marry your

current partner?”, the partial correlation between conception risk and preference for single men, controlling for Condition (=Album), was significant:  $r = .32$ ,  $p = .016$ ,  $df = 53$ . (For single women, as mentioned before, the same partial correlation was nonsignificant,  $r = -.01$ ,  $p = .90$ ,  $df = 95$ .)

**Thus, the key effect obtained in Italy was actually replicated in the American ONLINE replication as well (and vice versa).**

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## CONCLUSION

If one ensures that, as required by the theory laid out by Bressan and Stranieri (2008), participants are likely to perceive their current partner as the one who will help them raise their children, Frazier and Hasselman’s lab and online studies do replicate Bressan and Stranieri’s findings.