



Short Communication

Involuntary singlehood and its causes: The effects of flirting capacity, mating effort, choosiness and capacity to perceive signals of interest

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ABSTRACT

A considerable proportion of the population is involuntarily single; that is, they want to be in an intimate relationship but they face difficulties in doing so. The current paper attempted to assess some possible predictors of this phenomenon. More specifically, in a sample of 1228 Greek-speaking women and men, we found that participants who scored low in flirting capacity, capacity to perceive signals of interest and mating effort, were more likely to be involuntarily single than in an intimate relationship, and experienced longer spells of singlehood. Mating effort had also a significant effect on voluntary singlehood, with low scorers being more likely to be in this category than high scorers. Choosiness had also a significant effect, but only on voluntary singlehood, with high scorers being more likely to prefer to be single than low scorers.

1. Introduction

A considerable proportion of the population is single; that is, they do not have an intimate partner (Cherlin, 2009). From those who are single, almost half are involuntarily so, meaning that they want to have a partner, but they face difficulties in attracting one (Apostolou & Wang, 2019). The current study aimed to examine the factors which predict involuntary singlehood.

1.1. Predictors of singlehood

Singlehood constitutes a complex phenomenon, so in the current section we restrict our focus to a set of hypotheses that originate from an evolutionary perspective originally proposed by Apostolou (2015). More specifically, attracting a partner involves several mechanisms, including flirting skills necessary for persuading prospective partners and capacity to understand signals of interest so as to direct mating effort to interested individuals (Apostolou, Papadopoulou, Christofi, & Vrontis, 2019). It involves also mechanisms involved in diverting effort toward attracting a partner, and mechanisms that enable people to distinguish between partners (Apostolou, Shialos, Kyrou, Demetriou, & Papamichael, 2018; Buss, 2017). People exhibit variation in these mechanisms; for example, some have a good capacity to understand signals of interest while others do not (Apostolou et al., 2019). However, there are reasons to believe that people exhibit variation in these mechanisms part of which prevents them from finding partners, turning them to be important predictors of

involuntary singlehood status. One of the reasons behind such variation is the mismatch problem (Li, van Vugt, & Colarelli, 2017).

More specifically, anthropological, historical and phylogenetic evidence indicates that in ancestral human societies mating was regulated, with parents choosing spouses for their children (Apostolou, 2014; Coontz, 2005). Selection forces have allowed variation in the functioning of these mechanisms, which however was not impairing for one's fitness in that context. For example, poor flirting capacity would not be selected out, because it did not impair capacity to get partners, as spouses were provided by parents. Such variation in flirting capacity would however, impair the capacity to attract partners in contemporary postindustrial societies where people have to find mates on their own. In effect, poor flirting capacity would be selected out of the population; yet, this process requires time, and given that the transition to post-industrialism has occurred very recently in evolutionary terms, selection forces did not have sufficient time to adjust variation in optimal for the current environment levels. As a consequence, several people today exhibit variation in these traits, which impairs their capacity to attract mates (Apostolou, 2015).

In accordance with the hypothesis above, studies have found that a considerable proportion of participants indicated poor capacity for flirting and for perceiving signals of interest, allocated little mating effort and were very choosy, with these traits being associated with lower mating performance (i.e., capacity to attract and retain partners) (Apostolou et al., 2018; Apostolou et al., 2019). Low performance in mating is expected to be associated with higher incidence of singlehood

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(Apostolou & Wang, 2019), which suggests that these factors would predict whether an individual would be involuntarily single.

Consistent with this hypothesis, one study employed open-ended questionnaires and interviews, and found that participants commonly reported having poor flirting skills, high choosiness and low mating effort as reasons for being single (Apostolou, 2017, see also Apostolou, O, & Esposito, 2020). Another study, which analyzed responses on a Reddit thread asking men why they were single, produced similar results (Apostolou, 2019). It also recorded several responses indicating poor capacity to detect signals of interest. However, these studies examined the reasons that participants reported as the ones they thought that have led them to be single, which may not necessarily be the actual ones. One way to address this limitation, is to measure how people score in these dimensions, and subsequently, to examine whether their scores predict membership to different singlehood categories. Accordingly, the present research aims to extend the existing literature by testing the prediction that low scores in capacity to flirt and to perceive signals of interest, low scores in mating effort, and high scores in choosiness, would be associated with higher probability to be involuntarily single, and lengthier spells of singlehood.

2. Methods

2.1. Participants

The study was designed and ran in a private university in the Republic of Cyprus. The link of the study was promoted in social media including Facebook and Instagram. In order to take part, participants had to be at least 18 years old. In total, 1228 Greek-speaking individuals took part (711 women, 512 men and five participants who did not indicate their sex). Note that the Greek cultural context is appropriate to sample from, because marital status is predominantly determined by free choice and not by cultural institutions (e.g., arrange marriage; see also Muthukrishna et al., 2020). The mean age of women was 30.0 ($SD = 10.5$), and the mean age of men was 29.2 ($SD = 11.2$). Moreover, 48.0% of the participants were single, 38.4% were in a relationship and 13.6% were married. Also, 47.3% indicated that they were single because they faced difficulties attracting a partner, 29.8% were between relationships, 22.9% that they preferred to be single.

2.2. Materials

The study was designed using Google forms, it was in Greek and ran online. The survey had five parts. In the first part we measured flirting capacity, and in the second part, capacity to perceive signals of interest using instruments developed by Apostolou et al. (2019). In the third part, we measured mating effort, and in the fourth part choosiness using instruments developed by Apostolou et al. (2018). The Cronbach's α for flirting capacity was 0.88, for the capacity to perceive signals of interest 0.89, for choosiness 0.67 and for mating effort 0.72. Please see the supplementary material (Part A) for a detailed description of the instruments used. In all instruments participants' responses were scored so that a higher score indicated a higher performance in the respective factor. The order of presentation of the first four parts was randomized across participants. In the fifth part, participants' age, sex, marital status, and years being single were recorded. With respect to marital status, we employed a question used in previous research (i.e., Apostolou & Wang, 2019), which included the following categories: "Single - I find it difficult to attract a mate," "Single - I am between relationships," "Single - I prefer to be single," "In a relationship," and "Married."

3. Results

We ran a multinomial logistic regression where marital status was entered as the dependent variable and sex, age, flirting capacity, capacity to perceive signals of interest, mating effort and choosiness were

entered as the independent variables. We wanted to examine whether our independent variables predicted whether someone was single or in an intimate relationship. Accordingly, we collapsed the "married" and the "in a relationship" categories of marital status into the "In an intimate relationship," which was used as a reference category (see supplementary material Part B for the analysis without collapsing the categories). The results are presented in Table 1.

Starting with the "Single-Difficult to attract a partner" category, as indicated by the Odds Ratio, we can see that the largest effect was over flirting capacity, where one unit increase in this dimension reduced the odds of being in this category than in the "In an intimate relationship" by more than 50%. The second largest effect was over the capacity to perceive signals of interest, where one unit increase in this dimension decreased the probability to be in this category by 27%. In addition, one unit increase in the mating effort, decreased the probability to be in this category by almost 22%.

Furthermore, one unit increase in choosiness decreased the probability to be in the "Between relationships" category than in the "In an intimate relationship" category by about 20%. With respect to the "Prefer to be single" category, the largest effect was over choosiness, where one unit increase in this variable was associated with a 58% increase in the probability to be in this category than in the "Intimate relationship" category. Furthermore, one unit increase in the mating effort was associated with about 54% decrease in the probability to be in this category. See also supplementary material Part E for statistical comparisons between participants who were involuntarily and voluntarily single.

Moving on to the length of singlehood, we ran an ANCOVA where the years being single were entered as the dependent variable and age, flirting capacity, signals capacity, mating effort and choosiness were entered as continuous independent variables, and sex was entered as a categorical independent variable. The results are presented in Table 2. As indicated by the effect size, the largest effect was over flirting capacity, where one unit increase in this variable was associated with a 1.2 years reduction in the length of the singlehood spell. Similarly, one unit increase in the capacity to perceive signals of interest was associated with a 1.02 years reduction in the length of the singlehood spell. Moreover, one unit increase in mating effort was associated with a 0.63 years reduction in the length of the singlehood spell. Finally, men reported significantly more years of being single ($M = 5.20$, $SD = 8.25$) than women ($M = 3.60$, $SD = 5.78$). Note that, in the current and previous analysis, no significant interactions were found.

4. Discussion

In accordance with our original predictions, we found that low scorers in flirting capacity, capacity to perceive signals of interest and mating effort, were more likely to be involuntary single than in an intimate relationship, and more likely to experience longer spells of singlehood. Mating effort had also a large effect on voluntary singlehood, but contrary to our prediction, choosiness did not predict involuntary singlehood, but predicted membership in the between relationships and voluntary singlehood categories.

Our research is not without limitations. To begin with, we employed self-report instruments, which are subject to a number of biases. For instance, participants may be unwilling to admit, even to themselves, that they had poor flirting skills. Furthermore, we employed a non-probability sample, so our findings may not readily generalize to the population. In addition, singlehood is a complex phenomenon, with our study examining only few of the factors which predict it. A further limitation is third variables affecting our results. For instance, low mating effort might correlate with one being voluntarily single because of social desirability, which motivates people to say they are single because they prefer to be so, and that they do not put too much effort into getting into a relationship. Reverse causation constitutes a further limitation. For example, longer time being single may cause one to

Table 1
The effects of the independent factors on marital status.

Independent factors	Difficult to attract a partner			Between relationships			Prefer to be single		
	OR	C.I. 95%	p-Value	OR	C.I. 95%	p-Value	OR	C.I. 95%	p-Value
Flirting capacity	0.494 (50.6)	0.636–0.962	<0.001	0.988	0.779–1.254	0.923	0.822	0.632–1.069	0.144
Capacity to perceive signals of interest	0.730 (27.0)	0.599–0.889	0.002	0.904	0.725–1.126	0.725	1.016	0.795–1.299	0.899
Mating effort	0.783 (21.7)	0.636–0.962	0.020	0.953	0.753–1.205	0.685	0.461 (53.9)	0.362–0.587	<0.001
Choosiness	0.936	0.766–1.144	0.520	0.799 (20.1)	0.642–0.996	0.046	1.58 (58.0)	1.221–2.055	0.001
Age	0.984 (1.6)	0.969–1.000	0.046	0.996	0.980–1.012	0.602	0.976 (2.4)	0.957–0.995	0.013
Sex	2.010 (101)	1.441–2.802	<0.001	1.447 (44.7)	1.003–2.089	0.048	2.011 (101.1)	1.327–3.049	0.001

Note. The reference category for all continuous independent variables was the “in an intimate relationship.” For significant effects, the OR has also been converted in a percentage which is reported in a parenthesis. For sex, the reference category was women. The statistical information for the main effects in presented in the supplemented material, Part D.

Table 2
The effects of independent factors on the length of singlehood.

Independent factors			
	p-value	η^2_p	Regression coefficient
Flirting capacity	0.001	0.018	-1.22
Capacity to perceive signals of interest	0.002	0.015	-1.02
Mating effort	0.059	0.006	-0.63
Choosiness	0.563	0.001	0.189
Age	0.382	0.001	-0.024
Sex	0.044	0.006	1.12

become less sharp with their flirting ability or cause people to draw the conclusion that their flirting ability is poor, and may lead to hopelessness which involves not putting much effort into acquiring a mate. Finally, we have employed instruments that have been recently introduced, and their validity and reliability needs to be further examined.

CRedit authorship contribution statement

Menelaos Apostolou: Conceptualization, Methodology, Data curation, Writing – original draft.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2021.110782>.

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