

Academic career intention beyond the PhD: can the theory of planned behavior explain gender differences?

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Abstract

Are women less interested in becoming professors than men? We applied the theory of planned behavior (TPB) to investigate the intention to pursue an academic career. Postdocs who recently finished their PhD at a German university participated in an online survey ($N = 380$, mean age: 33; 45% women). Women reported lower academic career intentions ($d = 0.40$); TPB variables (attitude, subjective norm, self-efficacy) explained 87% of this gender difference. At an 8 month follow-up, we found no gender difference in the intention to continue in an academic career among the postdocs who were still working in academia ($n = 129$). Addressing TPB constructs early in women's academic careers could encourage them to remain in academia and strive for a professorship.

Why are there so few women in top positions in academia, a phenomenon that is observed worldwide (Sugimoto, Lariviere, Ni, Gingras, & Cronin, 2013)? The proportion of women who obtain advanced degrees has increased impressively over the last 20 years. In the United States, women earned the majority of degrees in 2008–2009 for nearly all levels of degrees within different racial/ethnic groups (i.e., 52% of a total of 158,558 conferred degrees; National Center for Education Statistics, 2011). Notwithstanding the increasing proportion of women in academic research, women represented only 21% of full professors in 2008 (National Science Board, 2012). The situation is similar in most European countries: Women represent more than half of the students; they almost equal men in numbers of PhD graduates but represent only 37% of Grade B and 20% of Grade A academic staff (European Commission, 2013). In Europe (EU-27), the proportion of women in Grade A academic positions (i.e., the single highest grade at which research is normally conducted and that corresponds to full professors in most countries) was 19.8% in 2010, with the highest shares in Romania (35.6%), Latvia (32.1%), and Turkey (28.1%). By contrast, the shares in France (18.7%), United Kingdom (17.5%), and Spain (16.9%) were below the European average with the lowest proportions in the Netherlands (13.1%), Belgium (12.2%), and Luxembourg (11.4%; European Commission, 2013, p. 91). In Germany, only 18% of women reached the rank of full professor in 2009 (see L other, 2011). This stands in contrast to a 76% increase in women who received their PhDs across a

period of 17 years (from 1993 to 2010). In 2010, a total of 44% of all doctoral degrees in Germany were earned by females (destatis, 2010).

Pursuing an academic career usually involves one or more postdoctoral positions after the award of a PhD or an equivalent doctorate (e.g., ScD or MD). A postdoctoral position is often a temporary position in academia, industry, a nonprofit organization, or government taken with the intent to gain scientific, technical, and professional skills (National Science Board, 2012). Because of the varying descriptions, definitions, and titles of a postdoctoral researcher, we chose to adhere to the characteristics given by the American Universities Committee on Postdoctoral Education: The position of a postdoc is temporary, involves full-time research or scholarship, prepares the person for a full-time academic and/or research career, requires the supervision of a senior scholar or a department/laboratory, and provides freedom and support with regard to publishing the research results (see  akerlind, 2005, p. 25). The time required to reach the top position of a professorship or another leading (tenured) position in academia after having finished the PhD represents a critical intersection, especially for women. For example, German students receiving their PhD are on average 32.7 years old, and the average age at which individuals become a professor is 41.1 years (destatis, 2010). A recent web survey conducted in Austria, Germany, and Great Britain of 702 young scientists revealed that women reported greater uncertainty about reaching their career aims and greater goal conflicts between

private and occupational goals than men (Höge, Brucculeri, & Iwanowa, 2012).

The fact that the proportion of women decreases substantially at higher steps of the academic ladder, their dropping out of the “pipeline” (Ceci, Williams, & Barnett, 2009; Goulden, Mason, & Frasch, 2011), has been called the “leaky pipeline” phenomenon (Blickenstaff, 2005) or the “academic gender gap” (Baker, 2010; Shen, 2013). These highly skillful and knowledgeable women represent a huge untapped potential of human resources (Sandberg, 2013; “Science for all,” 2013).

Possible reasons for the academic gender gap

Various reasons have been discussed for the academic gender gap (see, e.g., Blickenstaff, 2005; Ceci & Williams, 2007): Expected internationality and mobility are perceived as higher barriers for women than men (Leemann & Boes, 2012). The scarcity of female role models in higher academic positions and gender differences in access to professional networks and in personal priorities (Baker, 2010) are some other factors that are regarded as relevant. An important factor in explaining the academic gender gap is family circumstances, most of all the greater difficulties for women in balancing work and family (Cheung & Halpern, 2010) especially when raising young children (Goulden et al., 2011; Williams & Ceci, 2012). In several studies, parenthood has been found to have different effects on women’s compared with men’s careers. A negative effect on women’s careers was attributed to reduced work hours (Abele & Spurk, 2011) or longer career interruptions (Evers & Sieverding, 2014; Sandberg, 2013); on the other hand, Schubert and Engelage (2011) reported no effect.

Sexism in science and discrimination against women have been discussed as reasons for women’s underrepresentation in science (“Science for all,” 2013). Ceci and Williams (2011) recently published a very comprehensive and thorough review of 20 years of research of discrimination processes in the domains of publishing, funding, and hiring and came to the conclusion that—although there have been discriminative processes in former times—at present, these processes can no longer explain the underrepresentation of women in higher positions of science. They concluded that women’s underrepresentation in science is most of all due to gender differences in lifestyle choices (free or constrained) and career preferences as well as other factors concerning family reasons. Preference theory (Hakim, 2002, 2006) states that occupational segregation in the workforce can be generally accounted for by the diversity in lifestyle choices between men and women. In a national survey in Britain, Hakim (2002) found that only 20% of women were work centered and committed to work, whereas 60% were adaptive women, who tried to balance work and family and did not focus on

their careers, and 20% were home-centered women who preferred not to work.

Still, many highly qualified women “opt out” of an (academic) career, a phenomenon that was recently discussed by Sandberg (2013) who challenged women rather to “lean in.” Are women, who have started down the road toward an academic career and completed their PhD, less interested in pursuing an academic career that leads to higher positions, and do they less often strive to become a professor? In other words, do they have lower academic career intentions than men?

Academic career intention

Several psychological theories such as the theory of reasoned action (TRA; Fishbein & Ajzen, 1975), the theory of planned behavior (TPB; Ajzen, 1991), or the attitude–behavior theory (Triandis, 1979) regard the intention to perform a behavior as the most important and immediate predictor of behavior. “The assumption is that people do what they intend to do and do not do what they do not intend” (Sheeran, 2002, p. 1). Behavioral intentions are “goals pictured in the mind’s eye” (Heckhausen & Beckmann, 1990, p. 36) or “instructions that people give to themselves to behave in certain ways” (Triandis, 1979, p. 203). “In psychological terms, a behavioural intention indexes the *motivation* to perform a behaviour” (Sheeran, 2002, p. 2). Intentions are the “culmination of the decision-making process . . . and capture the standard of performance that one has set oneself, one’s commitment to the performance, and the amount of time and effort that will be expended during action” (Sheeran, Milne, Webb, & Gollwitzer, 2005, p. 276).

Intentions have been used to predict various behaviors, among others, to predict students’ study behavior (Sheeran, Orbell, & Trafimow, 1999) and high-school achievement (Manstead & Van Eekelen, 1998). To answer the question of how well intentions predict behavior, Sheeran (2002) conducted a meta-analysis of prospective tests of the intention–behavior relation. Across 422 studies, involving a sample of 82,107 participants and a wide range of behaviors, intentions accounted for 28% of the variance in subsequent behavior, a large effect size (Cohen, 1992) indicating that intentions are good predictors of behavior.

Behavioral intention is defined as conscious goal pursuit (in contrast to habituation and automaticity; Ajzen, 2012), which is a necessary although not sufficient factor for influencing behavior. However, people often do not act according to their intentions or cannot reach their goals. Insufficient actual control over the behavior (Ajzen, 1991), habits, or low facilitating conditions (Triandis, 1979) can act as barriers to the behavior and goal achievement. Other reasons for intention–behavior discrepancies are insufficient elaborations of one’s intentions, prospective memory failures, or goal reprioritizations (Sheeran et al., 2005).

Prior research found some evidence for gender differences in academic career intentions and career goals. Whitmarsh and Keyser Wentworth (2012) reported that, according to a variety of researchers, women have been discouraged from choosing careers that are traditionally dominated by men. For example, in the fields of mathematics and biochemistry, fewer women than men stated wanting to become a professor at the end of the PhD (Nerad & Cerny, 1999). In the field of psychology, the interest in pursuing an academic career of Canadian participants, most of whom had already completed the PhD, was significantly lower in women than in men (Singer, Cassin, & Dobson, 2005). Similar results were found for students in Switzerland who had completed their undergraduate degrees in philosophy or the social sciences (Berweger & Keller, 2005); women's academic career intentions were significantly lower than those of male doctoral students.

At the University of California, postdoctoral women and men shifted away from the goal of professor with a research emphasis, but this shift was more pronounced in women than in men; the current goal of 43% of the women was that of a professor with a research emphasis in contrast to the current goal of 58% of men (Goulden, Frasch, & Mason, 2009). Women were more than twice as likely as men to cite issues related to children (44% vs. 20%) as a very important factor that made them decide against this career. Specifically, women who already had (41%) or planned to have (28%) children decided against a research career. The same survey revealed that children did not have a similar effects on men's decisions; only 20% of men who had children and 17% of men who planned to have children shifted away from professor as a career goal (Goulden et al., 2009).

We propose that gender differences in the attainment of professorships can be understood by studying the intention to pursue this career as a necessary although not sufficient condition. It seems very unlikely that a person would be appointed to a professorship without having an academic career intention or goal. The heterogeneity of personal life goals and preferences, with expectations for an even work–family balance, should also influence the attractiveness of an academic career for young PhD graduates, and this in turn should influence their career intentions.

Our study was designed to answer the following questions: After completing their PhD, do women have lower intentions of becoming professors than men? And if so, what are the underlying factors that could explain this gender difference in academic career intentions?

Using the TPB to explain academic career intention

Ajzen's (1991) TPB has been shown to be a valuable framework by which to explain and predict intention and behavior in a variety of different settings, e.g., health-related behaviors

(see review of Conner & Sparks, 2008) or job search behavior (see review of Boswell, Zimmerman, & Swider, 2012).

According to the TPB, behavioral intention is regarded as a central predictor of behavior, an assumption that has been supported by several meta-analyses (see, e.g., Armitage & Conner, 2001; Sheeran, 2002). Intention itself is determined by three types of beliefs: (a) behavioral, (b) normative, and (c) control beliefs. Behavioral beliefs lead to a special attitude toward a behavior; normative beliefs produce a perceived social pressure for a certain behavior and are expressed as a subjective norm. Control beliefs can be aggregated into perceived behavioral control (PBC), which comprises two components: perceived controllability and perceived self-efficacy (Ajzen, 2002b).¹

Ajzen (2012) stated that perceived self-efficacy in the TPB should be credited to Bandura's (1977) work on self-efficacy as the perceived difficulty of performing a behavior and the belief in one's abilities to overcome those difficulties. Self-efficacy itself is a result of social experience and very much suited for explaining career-related intentions and career development (Abele & Spurk, 2009; BarNir, Watson, & Hutchins, 2011; Giles & Larmour, 2000; Johnson, Stone, & Phillips, 2008).

Applying the TPB to an academic career, behavioral beliefs refer to the evaluation of this career path for oneself, e.g., the attitude toward becoming a professor. The more positive and favorable this evaluation is, the more likely the person will be to intend to pursue this career. Second, normative beliefs concerning this career intention refer to the individual's perception of whether pursuing an academic career path is socially approved and anticipated by significant others such as one's partner, family members, friends, or colleagues. Such normative beliefs are expressed in the individual's subjective norm. Third, control beliefs, with a component of perceived self-efficacy, affect scientific career intentions. The more an individual is self-efficacious (i.e., confident that he or she will succeed in undertaking the necessary steps toward and activities required to reach this academic goal), the stronger is his or her academic career intention.

With regard to our present research question, the achievement of the rank of a full professor can be viewed as the specific goal. According to Betz and Hackett (2006), self-efficacy has to be measured specifically with regard to a concrete behavior; in the domain of an academic career, it can best be

¹In various discussions, controllability questions are said to reflect external factors ("the performance of the behavior is completely up to the actor"), and self-efficacy questions are restricted to internal factors ("the actors has the ability to perform the behavior"). The distinction between those different types of control is an empirical question, and Ajzen (2002b) suggests "they may both reflect beliefs about the presence of internal as well as external factors" (p. 680). However, when measured separately, only self-efficacy measures accounted for additional variance in intentions (and behaviors), whereas pure controllability items accounted for additional variance in behavior only.

measured as academic career self-efficacy (Berweger & Keller, 2005). In summary, behavioral beliefs (attitude), normative beliefs (subjective norm), and self-efficacious beliefs can be studied as the underlying factors that could explain the intention to pursue an academic career.

General career intention and development have been studied using the TPB and the TRA (Fishbein & Ajzen, 1975), a previous model from which the TPB was derived and that did not include PBC. The TRA was applied to explain and predict women's general career intentions and behavior in a longitudinal study conducted in the United States: Women's gender role attitudes and their perceptions of important others' preferences (i.e., subjective norm) assessed in 1973 were associated with their family role/career intentions (assessed with four options: housewife, housewife with part-time job, married career woman, single career woman), and these intentions were related to their family role/career behavior 14 years later (Vincent, Peplau, & Hill, 1998). Using the extended TPB as a conceptual framework to investigate the career development of women, Giles and Larmour (2000) demonstrated in their study of 108 employees in North Ireland (mean age 41) that self-efficacy was, next to subjective norm and attitude, the third predictor of the intention to apply for a promotion. Furthermore, self-efficacy had the greatest impact on intention and was more important for women than for men (Giles & Larmour, 2000).

The TPB has not yet been applied to investigate and explain gender differences in academic career intentions. Using this approach, we aimed to compare the academic career intentions of highly qualified men and women and to study indirect effects of gender on intentions through the core constructs of the TPB. The advantage of the TPB over other models lies in its parsimony and in its inclusion of proximal variables that actually influence intentions and behavior, including social norms. For example, Eccles expectancy-value framework (see review of Eccles & Wigfield, 2002) is much more complex in contrast to the TPB. Its focus is on choice and engagement as a function and complex interaction of expectancies and values. Most of the variables that are included in the Eccles et al. model for explaining the development of values and ability self-concepts are distant factors (e.g., socializers' beliefs and behaviors or previous achievement-related experiences).

We hypothesized that besides differences in lifestyle choices and preferences, the academic career could be explained from a social psychological perspective by exploring men's and women's thoughts and feelings toward an academic career and toward a professorship.

Aims of the study

Our research was aimed at increasing knowledge about the processes that contribute to the intentions of men and

women who had already successfully climbed the first steps on the academic ladder (completed their PhDs) to continue on this career path and to become a professor. A high academic career intention can be regarded as a fundamental psychological prerequisite for a person to pursue the academic career path and to take the steps that are necessary to obtain a professorship or another leading position in academia. The stronger the individual's intention, the more likely she or he will be to pursue this career path. If it is possible to identify the main determinants of gender differences in academic career intention and particularly in the intention to become a professor, these variables can be addressed in tailored interventions to encourage women to "lean in" (Sandberg, 2013) and not to draw back or drop out of the academic system.

First aim

The first aim of our study was to investigate whether women who have completed their PhD/doctorate have lower intentions to pursue an academic career and especially to pursue a professorship and—if so—to explain their lower academic career intentions with the core constructs of the TPB. A positive attitude, a high subjective norm, and the belief that one can succeed in performing the behavior (self-efficacy) should lead to the intention to pursue the academic career path that leads to a professorship. Referring to prior research, which found lower academic career intentions among women in different academic disciplines and in different countries (Berweger & Keller, 2005; Nerad & Cerny, 1999; Singer et al., 2005), we hypothesized:

Hypothesis 1. After having completed the PhD, women and men will differ in their intentions to pursue an academic career: Women will have lower academic career intentions (T1).

Hypothesis 2. Attitude, subjective norm, and self-efficacy as related to an academic career will be positively associated with the intention to pursue an academic career (T1).

Hypothesis 3. Gender differences in academic career intentions can be explained through attitude, subjective norm, and self-efficacy, controlling for parenthood. Women will have a more negative attitude, lower subjective norm, and lower self-efficacy than men (multiple mediation model; T1).

Second aim

Within the framework of the TPB, a strong intention is linked to behavior. However, a longitudinal study spanning a period of several years would be necessary to provide exact data on this intention-behavior relation (see, e.g., the longitudinal

analysis of the careers of Swiss postdocs in Schubert & Engelage, 2011). Alternatively, measurements of the intention to continue or to change one's academic career (Carless & Bernath, 2007) can offer a first insight into the strength of this relation and provide a proxy for behavior. According to the TPB, the intention to continue on the academic career path, as assessed more than half a year later, should be a good predictor of career-related behavior.

The second purpose of the study was to examine the first phase of the careers of postdocs who decided to work in academia. We were interested in whether women would be equally motivated at follow-up to continue their academic careers or whether they would be more likely to consider opting out of the academic career path than men. We further analyzed the predictive power of the TPB variables (T1) on intention to continue in an academic career (T2) and expected that a high academic career intention at T1 would be associated with a high intention to continue to pursue this career at follow-up. Thus, we hypothesized:

Hypothesis 4. Academic career intention (T1) will be positively associated with the intention to continue to pursue an academic career at follow-up (T2).

Hypothesis 5. At follow-up, women will have a lower intention to continue to pursue an academic career than men (T2) after controlling for academic career intention (T1), attitude (T1), subjective norm (T1), self-efficacy (T1), and parenthood.

Material and methods

Participants and procedure

The sample was composed of participants who received their PhD or equivalent doctorate during the period of winter 2009 until summer 2011 from a large German university (all departments except medicine, e.g., natural sciences, mathematics, and computer sciences, liberal arts and theology, law, economics, and social sciences). A total of 1,150 postdocs received a personalized invitation via e-mail to take part in a web survey. We provided a serial number, which allowed participants to access the questionnaire only once to avoid multiple responses by the same participant. A total of 1,015 e-mail addresses were valid (450 women, 565 men); of those, 380 postdocs (172 women, 208 men; response rate 37%) completed the survey. The survey was open from December 2011 to January 2012 (T1) and was provided in German and English. One American and one German each independently translated the survey from German into English.

A follow-up was conducted 8 months later (T2) in July/August 2012. Of the 380 participants (T1), 248 completed the T2 survey (113 women, 135 men; response rate 65%). Of all respondents at T2, 130 were working in academia at T1 and

T2; this sample was used to test the intention to continue to pursue the academic career that they had begun (Hypotheses 4 and 5).

Time 1 measures

We developed TPB constructs with regard to an academic career according to Ajzen's (2002a, 2002b) and Francis et al.'s (2004) recommendations. A pretest with a sample of $N = 131$ postdocs who were recruited through e-mail searches of the homepages of seven other large German universities led to the selection of the most psychometrically sound items.² The final version of the web survey was offered in German and English, so participants could choose to fill out the German or the English version.

Sociodemographic variables

Age, nationality, serious relationship, parenthood (i.e., children, 1 = yes, 0 = no),³ and current occupation (in academia, 1 = yes, 0 = no; i.e., at a university or at a nonacademic independent research establishment) were assessed.

Grades and qualifications

Participants were asked to report how long it took them to acquire the PhD and their PhD grade. In the German education system, lower grade values represent higher achievement, but to facilitate the interpretation of correlations, we recoded the grades so that higher values represented higher achievement. The recoded scores were converted to z scores using the mean and standard deviation (SD) of all participants. A score above zero indicates that the participant had better grades than the average; a score below zero indicates that the participant had lower grades than the average.

TPB constructs

All TPB items were introduced with the sentence "The following questions have to do with your opinions and attitudes regarding an academic career path." Self-efficacy (representing PBC in this study) and direct measures of attitude and subjective norm were used to predict academic career intention. Responses were given on a 5-point scale except for the variable academic career intention. In accordance with

²"To secure reliable, internally consistent measures, it is necessary to select appropriate items in the formative stages of the investigation. Different items may have to be used for different behaviors and for different research populations" (Ajzen, 2002a, p. 4). On the basis of this recommendation, the items for the final questionnaire were generated using a pretest.

³We used the dichotomous variable of parenthood (children yes/no), because the majority of the respondents in our sample had no children; $n_{men} = 154$ (74%); $n_{women} = 139$ (81%). Of the female participants, only 14% ($n = 24$) had one child, and another 4% ($n = 7$) had two children; one child was reported by 14% ($n = 29$) of the men and two children by 10% ($n = 21$). There was no gender difference in number of children, $\chi^2(5) = 7.90, p = .162$.

common practice in the measure of intention (Armitage & Conner, 2001), academic career intention was measured on a 7-point scale, which was expected to produce higher variability than a 5-point scale.

Academic career intention

Academic career intention, our main dependent variable for Hypotheses 1–3, was measured with five items. Responses were made on a 7-point scale ranging from 1 (*no, not at all*) to 7 (*yes, definitely*). The introductory question was “To what extent do the following statements apply to you?” The stem “It is my definite aim . . .” was followed by the five items “. . . to pursue my academic career path consequently further,” “. . . to successfully work in international research,” “. . . to win high prestige in academia,” “. . . to take over a position of leadership in academia,” and “. . . to become a professor.” Cronbach’s α for this five-item scale was .96.

Self-efficacy

Self-efficacy was measured domain specifically (i.e., as the abilities necessary to succeed in academia), consistent with the approach taken by Berweger and Keller (2005) and Betz and Hackett (2006) with six items after the introductory sentence, “How do you estimate your own academic abilities?” The stem “I am confident that . . .” was followed by the six items “. . . I am capable to conduct my own research,” “. . . I am capable to publish regularly in professional journals of international reputation,” “. . . I am capable to defend my standpoint at a conference, even if it is strongly criticized by other participants,” “. . . I will resubmit an article, even if it has already been refused multiple times,” “. . . I am capable to lead a department or an institute,” and “. . . I may be appointed to an actual professorship at a university” (Cronbach’s α = .80). Responses were made on a 5-point scale ranging from 1 (*disagree*) to 5 (*agree*).

Attitude

Attitude was assessed with seven-item pairs on 5-point semantic differential scales. After the introductory sentence, “The idea of being a professor myself I find to be . . .,” respondents were asked to rate the following items: undesirable/desirable, unrealistic/realistic, unattractive/ attractive, not motivating/motivating, unpleasant/pleasant, easy/hard (reverse scored), and unsatisfactory/satisfactory (Cronbach’s α = .88).

Subjective norm

Subjective norm was assessed with three items on a 5-point scale ranging from 1 (*disagree*) to 5 (*agree*). After the introductory sentence, “What do other people think who are important to you?” respondents first rated, “People who are important to me think that I should become a professor,”

second, “My family thinks that I should become a professor,” and third, “My friends/acquaintances think that I should become a professor” (Cronbach’s α = .92).

Time 2 measures

Intention to continue to pursue an academic career

The intention to continue to pursue an academic career was assessed at T2 with a scale developed by Carless and Bernath (2007). The following prompt was given: “After working in a field for a while, many persons shift to another job for a variety of reasons: pay, satisfaction, opportunity for growth, shut down, etc. When the shift is a change in field, not just working for another employer in the same field, it is commonly called a *career change*” (Carless & Bernath, 2007, p. 189). Responses to the following three items were given on a 5-point scale ranging from 1 (*does not apply to me*) to 5 (*applies to me exactly*): “I would like to continue in my current career as planned and don’t plan on a career change,” “I am considering a career change,” and “I intend to change my career.” The last two items were reverse scored before calculating the scale score with higher scores representing a higher intention to continue on the current career path (Cronbach’s α = .91).

Analytic strategy

Calculations were computed in SPSS 20 (IBM Corp., Ehningen, Germany). Hypothesis 1 was tested by applying a *t* test. TPB variables were tested as mediators if gender differences were found on test scores. Hypotheses 2 and 3 were both tested using the INDIRECT macro for SPSS (version 4.1) provided by Preacher and Hayes (2008). The multiple mediation (Hypothesis 3) was tested by evaluating the indirect and direct effects. We tested the mediators simultaneously to determine whether the mediation was independent of the effect of one of the other mediators and to reduce the likelihood of parameter bias due to omitted variables. All variables were standardized to attain a common metric. The independent variable was coded 1 = male and 2 = female. A multiple regression analysis was computed to test Hypotheses 4 and 5. Effect sizes for group differences were calculated as Cohen’s (1992) *d*.

Results

Time 1 sample descriptive statistics

Table 1 reports the means, *SDs*, and correlations of the study variables. Missing data at T1 (<2%) were imputed using the expectation maximization algorithm in SPSS (Enders, 2001). No gender differences were found for age, $t(378) = -0.68$, $p = .495$, and time after finishing the PhD, $t(378) = -1.92$, $p = .055$. Participants were on average 32.5 years old ($SD = 5.0$) and were surveyed on average 16 months

Table 1 Intercorrelations and Descriptive Statistics of Study Variables by Gender for Female ($n = 172$) and Male Postdocs ($n = 208$)

	1	2	3	4	5	6	7	8	9	<i>M</i>	<i>SD</i>
Academic career intention ^a	—	.50**	.62**	.66**	-.12	-.06	.27**	-.08	.48**	4.01	2.00
Self-efficacy ^b	.50**	—	.47**	.48**	-.08	-.03	.29**	-.06	.26*	3.80	0.79
Attitude ^b	.61**	.48**	—	.59**	-.10	-.06	.34**	-.17	.29*	3.38	0.88
Subjective norm ^b	.63**	.41**	.61**	—	-.15*	-.15*	.27**	-.14	.12	3.32	1.31
Age	.01	-.05	.02	-.12	—	.31**	-.29**	.35**	.04	32.52	5.02
Parenthood ^c	.01	-.03	.02	-.00	.27**	—	-.14*	.19**	-.01	0.26	0.44
PhD grade ^d	.09	.06	.10	.19	-.20*	-.05	—	-.14*	.02	0.11	0.97
PhD duration (years)	-.02	-.13	-.08	-.12	.49**	.06	-.07	—	-.19	4.01	1.36
Intention to continue academic career ^{b,e}	.39**	.33*	.24	.33*	.23	-.07	-.20	.12	—	3.23	1.23
<i>M</i>	3.15	3.51	2.85	2.73	32.88	0.19	-0.13	4.36	3.30		
<i>SD</i>	1.83	0.79	1.05	1.36	5.22	0.40	1.02	1.49	1.26		

Note. For female participants, intercorrelations are shown below the diagonal, and means and standard deviations are presented in the horizontal rows; for male participants, intercorrelations are shown above the diagonal, and means and standard deviations in the vertical columns.

SD = standard deviation.

^aRange 1–7, higher scores indicating higher intention.

^bRange 1–5, higher scores indicating higher self-efficacy, attitude, subjective norm, and intention to continue to pursue an academic career.

^cno = 0, yes = 1.

^dz scores, scores above zero indicate better grades than the average.

^eMeasured at T2, women ($n = 54$), men ($n = 75$).

* $p < .05$. ** $p < .01$.

($SD = 7.3$) after receiving their PhD. The majority of participants were German ($n_{\text{women}} = 131$, $n_{\text{men}} = 156$), $\chi^2(1) = 0.07$, $p = .793$. However, men had significantly better PhD grades ($M = 1.11$, $SD = 0.97$) compared with their female counterparts ($M = -0.13$, $SD = 1.02$), $t(378) = 2.39$, $p = .018$, $d = 0.25$, and required on average $M = 4.0$ years ($SD = 1.4$) to receive their doctorate compared with women, who required on average $M = 4.4$ years ($SD = 1.5$), $t(378) = -2.37$, $p = .018$, $d = 0.24$.

Of the male participants, 26% had children ($n = 54$) compared with 19% of the female participants ($n = 33$), $\chi^2(1) = 2.45$, $p = .118$; 75% of the men ($n = 156$) and 74% of the women ($n = 128$) were living with a partner, $\chi^2(1) = 0.02$, $p = .897$. The majority of all participants (92%, $n = 349$) were employed and working in academia, i.e., as scientists: $n_{\text{women}} = 91$ (58%), $n_{\text{men}} = 127$ (65%), $\chi^2(1) = 2.05$, $p = .152$. Only a minority of participants were unemployed (8%; $n_{\text{women}} = 16$, $n_{\text{men}} = 15$).

The distribution of PhDs between the departments was unequal, $\chi^2(2) = 9.78$, $p = .008$. The majority of participants received their doctorates in natural sciences (including mathematics and computer sciences; $n_{\text{women}} = 93$, $n_{\text{men}} = 144$), followed by humanities (liberal arts and theology; $n_{\text{women}} = 42$, $n_{\text{men}} = 30$), and social sciences (including law and economics; $n_{\text{women}} = 37$, $n_{\text{men}} = 34$).

Time 2 sample descriptive statistics

Of the 380 participants at T1, 65% ($n_{\text{women}} = 113$, $n_{\text{men}} = 135$) completed the survey at follow-up (T2); 234 participants ($n_{\text{women}} = 104$) were employed, and 14 were unemployed

($n_{\text{women}} = 9$). To analyze the intention to continue to pursue an academic career (Hypotheses 4 and 5), only those participants who were still working in academia (i.e., “scientists”) and who participated at T1 and T2 were included ($n = 130$). One person had to be excluded from the T2 analysis because only one of three items of the dependent variable (intention to continue to pursue an academic career) was answered ($n = 129$). No systematic differences were found between those 129 scientists ($n_{\text{women}} = 54$, $n_{\text{men}} = 75$) who completed the survey at T2 and the 89 scientists who did not fill out the T2 survey ($n_{\text{women}} = 37$, $n_{\text{men}} = 52$), $\chi^2(1) = 0.00$, $p = .966$; these two groups did not differ with regard to demographic variables, TPB variables, PhD grades, and time after receiving their PhD grade.

Time 1 hypotheses testing

A significant gender difference was found in academic career intention, $t(378) = 4.31$, $p < .001$, $d = 0.40$. On average, women reported a significantly lower academic career intention ($M_{\text{women}} = 3.15$, $SD = 1.83$ vs. $M_{\text{men}} = 4.01$, $SD = 2.00$), thus supporting Hypothesis 1. Gender differences were also found for all three TPB variables (all $ps < .01$). Men reported a more positive attitude toward an academic career, $t(333) = 5.25$, $d = 0.54$, a higher subjective norm, $t(378) = 4.25$, $d = 0.44$, and higher self-efficacy, $t(378) = 3.67$, $d = 0.38$, with regard to an academic career than women.⁴

⁴Overall, the distribution of male and female graduates in top academic positions depends on the field of science; the proportion of women remains lowest in engineering and technology in all EU Member States (European

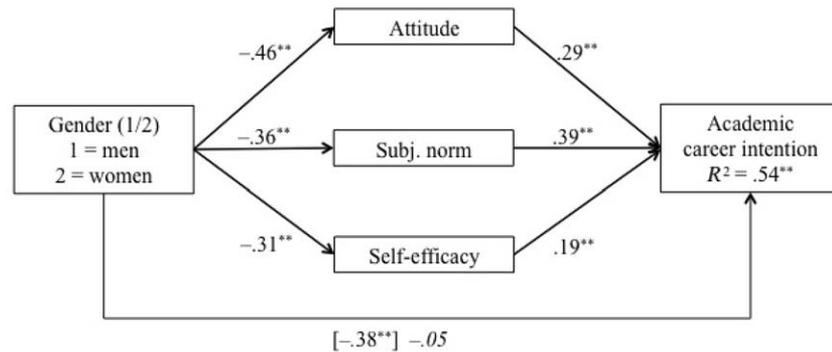


Figure 1 Multiple mediation model showing the effect of gender on academic career intention at T1 ($N = 380$). Numbers within the model are standardized paths linking gender to the mediators (a paths), the mediators to intention (b paths), the total effect (c path in brackets), and the direct effect of gender on intention (c' path). The value of the direct effect ($c' = -.05$) is the relation of gender on intention after accounting for the mediators. Control variable: parenthood, PhD grade, and PhD duration. $**p < .01$.

Table 2 Mediation of the Effect of Gender on Academic Career Intention through Attitude, Subjective Norm, and Self-Efficacy

	Product of coefficients			Bootstrapping BC 99% CI	
	Point estimate	Boot	SE	Lower	Upper
Indirect effects					
Attitude	-.1329	-.1346	.0378	-.2498	-.0524 ^a
Subjective norm	-.1418	-.1421	.0426	-.2649	-.0448 ^a
Self-efficacy	-.0583	-.0578	.0230	-.1337	-.0105 ^a
Total	-.3330	-.3345	.0751	-.5247	-.1305 ^a
Contrasts					
Attitude vs. subjective norm	.0090	.0076	.0480	-.1068	.1360
Attitude vs. self-efficacy	-.0746	-.0768	.0404	-.1899	.0247
Subjective norm vs. self-efficacy	-.0836	-.0844	.0008	-.2063	.0166

Note. $N = 380$. Z-standardized regression coefficients are reported.

BC 99% CI = Bias-corrected 99% confidence interval; SE = standard error.

^aDifferent from zero, as zero is not included in the confidence interval.

We simultaneously tested whether gender (independent variable) was associated with academic career intention (dependent variable) via the three TPB variables (mediators). Parenthood, PhD grade, and PhD duration were included as covariates. As depicted in Figure 1, gender was significantly associated with attitude, subjective norm, and self-efficacy. In line with Hypothesis 2, all three mediators were significantly related to academic career intention. The partial effects of parenthood, PhD grade, and PhD duration

Commission, 2013, p. 93). Department affiliation could have influenced participants' ratings. Supposedly, a woman in the natural sciences department would have a lower intention due to the fact it is a male-dominated field compared with a woman in the social sciences department. However, there was no significant interaction between the three departments and gender, $F(2,374) = 0.673, p = .511$, indicating that the effect of the department on participants' intention was the same for women and men. We thank an anonymous reviewer for raising this question.

on academic career intention were all nonsignificant (all $ps > .10$).

The *total effect* (c) of gender on academic career intention—not accounting for any mediators—equaled $b = -0.38, p < .001$. This effect decreased significantly when attitude, subjective norm, and self-efficacy were entered into the model, as reflected by the nonsignificant *direct effect* (c') of gender on academic career intention via the three mediators, $b = -0.05, p = .505$. Overall, this multiple mediator model accounted for 54% of the variance in academic career intention ($p < .001$).

The three *specific indirect effects* (ab) of gender on academic career intention via attitude, subjective norm, and self-efficacy were significant because all their bias-corrected bootstrap confidence intervals (99% BC CI) did not contain zero (see Table 2). In other words, the significance of each specific indirect effect indicates that each TPB variable transmits the effect of gender on academic career intention conditional on

the inclusion of the other TPB variables in the model. Summing the three specific indirect effects yields the *total indirect effect* with the point estimate of $b = -0.33$ and a bias-corrected bootstrap confidence interval (99% BC CI) of -0.52 to -0.13 . The size of this total indirect effect can be interpreted as the gender difference in academic career intention that can be accounted for by the three mediators. These mediators accounted for 87% (i.e., total indirect effect/total effect) of the gender difference in academic career intention (see Hayes, Preacher, & Myers, 2011). Thus, Hypothesis 3, which stated that a gender difference in academic career intention can be explained by the TPB variables, was supported.⁵

To compare the size of each specific indirect effect with the average size of the two other specific indirect effects, pairwise contrasts were conducted. However, all bias-corrected bootstrap confidence intervals (99% BC CI) contained zero, indicating that all mediators contributed in comparable size to the indirect effect. In other words—controlling for the influence of parenthood, PhD grades, and PhD duration—attitude, subjective norm, and self-efficacy comparably mediated the effect of gender on the intention to pursue an academic career. The directions of the *a* and *b* paths demonstrated that men had higher scores on attitude, subjective norm, and self-efficacy (*a* paths), and higher scores on those three mediator variables were associated with higher scores on academic career intention (*b* paths).

Time 2 hypotheses testing

At follow-up, no gender difference was found in the intention to continue to pursue an academic career (T2) of the 129 participants who were still working in academia, $t(127) = 0.308$, $p = .758$. The intention to continue to pursue an academic career was on average: $M = 3.26$ ($SD = 1.24$). No gender difference was found for any response distribution (all chi-squares < 1.65 , all $ps > .801$).

The results of the hierarchical regression analysis are presented in Table 3. In the first step, gender and parenthood were nonsignificant predictors. In the second step, academic career intention (assessed at T1) positively predicted intention to continue to pursue an academic career at follow-up ($\beta = .54$, $p < .001$). Gender emerged as a positive yet nonsignificant predictor ($\beta = .15$, $p = .086$); attitude (T1), subjective norm (T1), self-efficacy (T1), and parenthood were

⁵We reran our multiple mediation analyses with *number of children* as a covariate. Results were very similar to the analysis with the dichotomous parenthood variable (total effect $b = -0.39$, $p < .001$, direct effect $b = -0.04$, $p = .564$, $R^2 = .55$, total indirect effect with the point estimate of $b = -0.34$, partial effect of number of children $b = 0.04$, $p = .435$). Replacing parenthood with number of children in the hierarchical regression analysis predicting intention to continue on the academic career path revealed the same significant results.

Table 3 Hierarchical Regression Analysis Predicting the Intention to Continue to Pursue an Academic Career for Women and Men at T2 ($n = 129$)

Step	Predictor	$\beta_{\text{step 1}}$	$\beta_{\text{step 2}}$
1:	Gender ^a	.02	.15
	T1 parenthood	-.03	-.05
2:	T1 attitude		-.16
	T1 subjective norm		-.02
	T1 self-efficacy		.09
	T1 intention		.54**
R^2 for model		.00	.21
Adjusted R^2		-.01	.17
ΔR^2 for last step		.00	.21**

Note. Only participants who were working in academia at T1 and T2.

^aMale = 1, female = 2.

* $p < .05$. ** $p < .01$.

nonsignificant. Academic career intention (T1) was positively associated with the intention to continue to pursue an academic career (T2; supporting Hypothesis 4), but women were as likely to continue to pursue their academic careers as men when all other variables were held constant. Thus, Hypothesis 5 was not supported.⁵

Discussion

Do women and men who have successfully completed their PhD differ in their intentions to continue to pursue an academic career, including the intention to become a professor? Our study focused on the question of whether the TPB could explain gender differences in academic career intention and the intention to continue to pursue this career in the critical phase following the completion of the PhD. We found that women and men who had recently received their PhDs differed significantly in the intention to further pursue an academic career with men reporting higher intentions. Men reported a higher subjective norm, which means that they perceived their social environment as imposing more pressure on them to become a professor than women. Men also had a more positive attitude toward the association of being a professor themselves than women, and furthermore, men endorsed a higher academic self-efficacy (i.e., they perceived their academic abilities to meet the requirements of the academic career path as higher). Altogether, these central constructs of the TPB—subjective norm, attitude, and self-efficacy—were able to explain 87% of the gender difference in academic career intention.

The results of our study support existing evidence from other studies that also found a lower intention to pursue an academic career among (high-qualified) women (Berweger & Keller, 2005; Ecklund & Lincoln, 2011; Singer et al., 2005). Women's lower occupational self-efficacy was reported by Abele and Spurk (2009), and more specifically, women's

academic career self-efficacy was significantly lower than men's ($d = 0.57$) as reported by Berweger and Keller (2005). However, high self-efficacy seems to be important for establishing career interests in the fields of science, technology, engineering, and mathematics (Diekman, Brown, Johnston, & Clark, 2010). Both self-efficacy and interests are antecedents of career choices (Lent, Brown, & Hackett, 1994). In addition to self-efficacy, we found that the attitude toward becoming a professor and subjective norm (i.e., the expectations of significant others) contributed significantly to explaining the intention to pursue an academic career. To our knowledge, normative influences regarding the pursuit of an academic career have not yet been investigated to explain gender differences in academic careers.

Unexpectedly, no gender difference was found in the intention to continue to pursue an academic career at follow-up. Female and male postdocs who were—8 months after the first assessment—still following the academic career path had similar intentions to continue to pursue an academic career. The result was stable when controlling for all TPB variables. This promising finding indicates that, if women have similar scores on attitude, subjective norm, and self-efficacy regarding an academic career compared with their male counterparts, they are equally as likely to intend to stay on the academic career track as men. Strengthening women's career intentions at an early career stage seems to be a promising strategy for counteracting the academic gender gap.

Is academic career intention a good predictor for reaching the top in academia?

To answer this question, longitudinal studies are necessary. Intention is a necessary but not sufficient predictor of subsequent behavior. There is convincing evidence for a causal effect of intention on behavior: Webb and Sheeran's (2006) meta-analysis of 47 studies revealed that increases in intention (mean $d = 0.66$) promoted changes in actual behavior (mean $d = 0.36$; see Ajzen, 2012, p. 450). On the other hand, a substantial percentage of women in mathematics who did postdoc training with the hope of becoming a professor did not fulfill this aspiration (Nerad & Cerny, 1999).

In our study, the intention to continue to pursue an academic career—measured 8 months after assessing academic career intention—may serve as a proximal indicator of behavior in this relatively short time span. This result can be interpreted as being in accordance with the TPB; only academic career intention at T1 influenced the intention to continue on this career path at T2. Attitude, subjective norm, and self-efficacy had no additional influence on the T2 intention to continue. The strong influence of academic career intention assessed at T1 on intention to continue on this career path at T2 indicates the rather stable intention to pursue an academic career within this—relatively short—time span. We

thereby conclude that increasing academic career intention at an early career stage seems to be a promising strategy for further strengthening women's intentions to reach the top of academia.

Despite the importance of intentions, the prediction of a successful academic career is more complex. Career-related behavior such as conducting one's own research projects, acquiring research funds, or publishing research results increase the probability that a person will achieve a successful academic career. Later on, the likelihood of becoming a professor depends on other (unmeasured) factors, e.g., processes of promotion or discrimination, quotas, and number of vacancies in a specific department.

However, a persistently lower academic career intention of female postdocs is not very likely to change the academic gender gap. At present, more women than men make decisions to pursue career paths that offer fewer opportunities for academic advancement, e.g., they apply for part-time jobs or teaching-intensive rather than research-intensive jobs (Ceci & Williams, 2011). A strong academic career intention would increase the likelihood that women will apply for and be awarded jobs with higher career opportunities. As Ceci and Williams (2011) point out, women even have a higher chance of being interviewed and receiving job offers than their male counterparts. Future research should examine possible reasons for gender differences in TPB variables to design interventions or programs to strengthen women's academic career intentions. Free or constrained choices should be identified, and these may be the underlying and related factors that justify the intention to pursue an academic career.

The influence of the TPB variables on academic career intention

In the following, we provide some suggestions to explain the different values in TPB variables and address their influence on women's academic careers.

Subjective norm and attitude

As the majority of professors are male and the leadership role is still expected to be male oriented (Koenig, Eagly, Mitchell, & Ristikari, 2011), women might be likely to expect the professorship to still be male oriented. This may also be the perception of significant others who exert an influence on women in academia. In addition, the period beyond the PhD often concurs with family planning or the worry "that the science career will keep them from having a family" (Ecklund & Lincoln, 2011, p. 4). The low subjective norm among women could be an indicator that they will receive less social support from significant others in continuing their academic careers than men. For example, feelings of isolation or alienation as a postdoctoral scholar and a lack of encouragement

were more likely to be reported by women than by men (Goulden et al., 2009), and such feelings are likely to result in lower perceived support from significant others.

A qualitative study of chemistry PhD students found that female participants regarded academic careers as “too all-consuming, too solitary and not sufficiently collaborative” and they would “need to make sacrifices about femininity and motherhood in order to succeed in academia” (Newsome, 2008, p. 7). In our study, women’s ratings of their attitudes toward being a professor themselves (i.e., as relatively more undesirable, unrealistic, unattractive, not motivating, etc., compared with men’s ratings) may also have been influenced by the barriers they expected to be associated with this profession (e.g., time-intensive engagement, no family-friendly conditions, long-term period abroad). It seems as though women’s less positive attitudes are due to lifestyle preferences, which they assume are not compatible with an academic career and particularly with a professorship.

Self-efficacy

In post hoc analyses, we investigated the items from the self-efficacy scale for which the largest gender differences emerged: Women were significantly less confident than men that they would “publish regularly in professional journals of international reputation” ($d = 0.53$), that they “may be appointed to an actual professorship at a university” ($d = 0.37$), that they could “defend their standpoint at a conference, even if it is strongly criticized by other participants” ($d = 0.35$), and that they could “lead a department or an institute” ($d = 0.27$). Women’s lower self-efficacy scores may reflect a lack of experience with such activities (publishing, conducting their own research, and discussing the results at conferences, management activities, etc.) and consequently the opportunity to gain mastery experience. In particular, their lack of confidence to finally reach the top of academia may reflect a greater anticipation of hindrances, leading to a lack of perceived confidence in their competences.

Structural barriers for women in academic careers

European data suggest a generational effect as a possible explanation for women’s underrepresentation in research; the gender imbalance in the research population increases with age (European Commission, 2013, p. 40). The (uncertain) scientific career with continuing short-term contracts confronts women with delayed family planning. Apparently, parenthood and a scientific career do not seem to be compatible to female postdocs. The trajectory of a scientific career has not changed since the times when most women did not work outside the home (Williams & Ceci, 2012). An end point to women’s fertility is a constraining force men do not have to face. References are made to a “maternal

wall” (European Commission, 2013, p. 99); by contrast, a “paternal wall” due to gendered-familial patterns is not observable. Women more often than men choose to follow spouses’ career moves or defer their careers to raise children or care for elderly parents (Ceci & Williams, 2011; Leemann & Boes, 2012). To oppose the gender wage gap and occupational sex segregation, policy changes are necessary to facilitate parenthood and a scientific career (Goulden et al., 2011; Williams & Ceci, 2012). Presumably, the social-cognitive variables (attitude, social norms, and self-efficacy) that were found in this study to be lower in women than in men can (then) be addressed effectively.

Practical implications

Career advice concerning the demands and objectives of a professorship and its perspectives could be given and asked for during or even before graduate programs (Åkerlind, 2005). Core competences to prepare for the academic career, such as publishing articles, conducting one’s own research, and presenting the results at conferences should be strengthened during women’s and men’s graduate study. It seems to be important to provide instructional support and training for women via role models to promote their careers in male-dominated professions (Bruce et al., 2011; Whitmarsh & Keyser Wentworth, 2012). The implementation of good practice in all parts of the science department and examples of female (and male) researchers who have succeeded in balancing life and work have been suggested (Newsome, 2008).

Carrell, Page, and West (2010) demonstrated that the gender of the major professor had a strong effect on female students, especially in male-dominated fields. They analyzed a dataset of 9,481 students at the U.S. Air Force Academy who were randomly assigned to professors. A female professor increased female students’ likelihood to continue to take math and science courses and to graduate with a STEM degree, although an individual student’s professor did not determine course grades and thereby bias the result. This positive effect was likely to occur via role modeling; a positive effect of role modeling was already reported in a study on entrepreneurial career intentions (BarNir et al., 2011) and may also influence academic career intentions.

Mentoring programs may also strengthen women’s academic career paths. The first results of a randomized trial of a mentoring program suggest beneficial effects; women who are mentored advance in academic fields (Blau, Currie, Croson, & Ginther, 2010). A meta-analysis by Allen, Eby, Poteet, Lentz, and Lima (2004) generally found supportive evidence for the benefits of mentoring on subjective (weighted means $r = .29-.37$) and objective career outcomes (weighted means $r = .08-.19$). The results also indicated that

mentored individuals were more likely to be committed to their careers than were their nonmentored counterparts, although the results did not consider gender diversity or type of mentorship (i.e., formal vs. informal).

Limitations

Our study has several limitations. First, the intention to pursue an academic career was not measured immediately after the PhD was received. Some participants already had their PhDs for 1.5 years and were no longer in academia. Their academic career intentions may reflect either the intention to return or to justify their decision about leaving. It is important to measure intentions shortly before completing or directly after completing the PhD. Second, the follow-up period was only 8 months after the first assessment, a short period in which to expect major changes in career intentions. However, the purpose of this study was to examine intention (in-)stability during the early careers of scientists in the time frame that followed the PhD and that can be regarded as a very critical period for an individual's future academic career. Third, besides the PhD grade and duration, we did not assess the objective performance of postdocs. Although we assessed the number of publications in order to use it as an indicator of objective success, we did not use this measure due to the number of academic areas included; different publication "cultures" in different departments led to heterogeneity in the types of publications, which were thus not comparable with each other. Fourth, the TPB was applied to explain gender differences in academic career intention in a sample of mostly (76%) German postdocs. However, 24% of other nationalities filled out the English version of the questionnaire. Further studies in other countries are necessary to determine the generalizability of the findings. Fifth, we measured TPB constructs directly. Indirect (belief-based) measures of especially attitude and subjective norms could provide more insight into participants' evaluations of outcomes and the motivation to comply with normative beliefs. Sixth, we are aware of common method variance due to self-reported data, but the predictor and criterion could not be measured from different sources because this would have compromised anonymity. However, according to Podsakoff, MacKenzie, Lee, and Podsakoff (2003), using a time lag between the predictor and criterion is one way to efficiently control for common method biases. Last, although the majority of our participants were childless, the conclusion that parenthood had no effect on career intention is incomplete. Women still carry the main burden of balancing work and family (Evers & Sieverding, 2014). Influences of childcare responsibilities and the ages of the children of the women (19%) and men (26%) who already had children were not considered. Generally, the proportion of women/

men with children in Europe is higher among researchers than the proportion in the working population (European Commission, 2013). Against the background of women's underrepresentation due to fertility/lifestyle choices (Ceci & Williams, 2011; Goulden et al., 2009), women's fear of an incompatibility between an academic career and raising a family is a serious issue and should be addressed in further research.

Conclusion

According to the increased percentage of women who have completed their PhDs, one could assume that in about 10 years, the proportion of women being appointed to professorships will increase accordingly (see analyses of Schubert & Engelage, 2011). However, the results of our study give reason to doubt this. The intention to strive for an academic career was much lower for female postdocs than for their male counterparts. The promotion of family-friendly policies is necessary to heighten the attractiveness of the scientific career for women (see Goulden et al., 2011). Besides systematic barriers (e.g., short-term contracts, the necessity of geographical mobility, lower income compared with salaries in private enterprises), psychological determinants should be addressed in order to increase women's intentions to pursue an academic career. Increasing intentions are assumed to be an important step for increasing the proportion of women in higher positions in academia and especially among professors. Future research should investigate how attitude, subjective norms, and the self-efficacy of women working in academia can be positively influenced and can thereby enhance their intentions to pursue an academic career. A promising finding is that once women have established an academic career intention as high as their male counterparts, they seem to be willing to continue on this career path as suggested by our follow-up data.

Conflicts of interest

None.

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