

SPECIAL ISSUE ARTICLE

The interplay of career involvement and goal conflicts: An eight-wave study with STEM professionals

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Summary

Based on a “whole-life”-perspective and integrating theories of self-identity and resource management, the present longitudinal study examines the dynamic relationship between career involvement and conflicts between work and nonwork goals in a sample of 3095 German-speaking doctoral students and doctorate holders (37.0% women) from various STEM fields. We expected increases in goal conflicts to decrease career involvement, and simultaneously tested reciprocal relationships, that is, from involvement on conflicts. The random intercept cross-lagged panel model (RI-CLPM) was used to analyze within-person associations across eight measurement occasions (6-month time intervals) while controlling for between-person effects. At the between-person level, career involvement and goal conflicts were negatively correlated. At the within-person level, results showed negative cross-lagged effects from goal conflicts to career involvement as well as negative cross-lagged effects from career involvement to goal conflicts. This indicates that the interplay of goal conflicts and career involvement can result in either an upward or a downward spiral. Theoretical and practical implications are discussed.

KEYWORDS

career goal conflicts, career involvement, identity, random intercept cross-lagged panel model (RI-CLPM), work and nonwork incompatibilities

1 | INTRODUCTION

In today's workforce, there is a growing need for highly skilled professionals, especially within the STEM fields (science, technology, engineering, and mathematics) (Cedefop, 2015). During the last couple of years, much effort has been put into attracting students to enter and persist in STEM majors. Despite the growing number of students and doctoral candidates in STEM fields, a substantial number of STEM professionals not only change occupations, but eventually leave these careers (e.g., Skrentny & Lewis, 2022), with women being overrepresented among those who either never enter any STEM position after

successful STEM graduation at all (Dlouhy & Froidevaux, 2022) or who dropout later on (Cech & Blair-Loy, 2019). Researchers and practitioners have expressed growing interest in understanding why professionals stay in or leave STEM careers (e.g., Cech & Blair-Loy, 2019). One explanation for career attrition is reduced commitment due to striving for conflicting self-relevant goals (Singh et al., 2018). Remarkably, recent studies have shown that both women and men leave STEM careers due to family responsibilities, but women do so relatively more frequently (Cech & Blair-Loy, 2019). While it is natural for individuals to pursue goals from different life domains, feeling overwhelmed to comply with the requirements between demands from

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different life domains seems to have serious impacts on career-related behavior. Consequently, career research needs to adopt a “whole-life”-perspective by taking the interconnection between work and nonwork domains into account (Greenhaus & Kossek, 2014; Litano & Major, 2016). This, of course, does not exclusively pertain to STEM professionals but also to employees from other fields.

We analyze the interplay of career involvement and conflicts between work and nonwork goals and complement and extend previous research in the following ways:

First, while we expect perceived goal conflicts to result in diminished career involvement based on theoretical assumptions of identity theory (Thoits, 1991) and conservation of resources theory (COR; Hobfoll, 1989; Hobfoll et al., 2018) as well as findings of prior research (e.g., Singh et al., 2018 on occupational commitment), previous literature has left controversies whether a dedication to one's chosen career has a positive or a negative impact on the experience of goal conflicts between life domains (Dorenkamp & Ruhle, 2019; Hirschi, Keller, & Spurk, 2019). As outlined by Hirschi, Shockley, and Zacher (2019), most of the existing research has been carried out either from a conflict or from an enrichment perspective and has neglected the possibility that career commitment and goal conflicts might influence each other's development in a more complex way where both enriching as well as hindering processes could be present. Therefore, research is needed that simultaneously investigates dynamics within the work–nonwork interaction (Kossek et al., 2020). In our study, we integrate identity theory (Thoits, 1991) and conservation of resources theory (Hobfoll, 1989; Hobfoll et al., 2018) to explain how career involvement and anticipated goal conflicts between life domains are linked to a person's identity. We argue that goal conflict between life domains represents a threat to personal resources; career involvement could either serve as a resource or as a threat to resources, respectively. In doing so, we also show these theories to provide explanations on how changes in these construct can result in both gain and loss spirals.

Second, although it has been acknowledged by researchers from different fields of applied research that short-term processes might differ from long-term processes (Halbesleben et al., 2014; Hobfoll, 1989; ten Brummelhuis & Bakker, 2012), up to date, longitudinal investigations—and multi-wave cross-lagged designs with more than two measurement occasions, in particular—have only been used in very few investigations (for an exception see, for example Wayne et al., 2022). We apply an eight-wave cross-lagged longitudinal design in combination with the random intercept cross-lagged panel model (RI-CLPM), which allows examining within-subject relationships while controlling for between-person confounders. In that way, we are able to meet the demands required to study complex reciprocal relationships and intraindividual processes over time (Hamaker et al., 2015).

Third, against the background of an increase in flexible career paths resulting in less structural identity guidance from organizations, we focus on career involvement as a concept that is distinct from a commitment bound to the employing organization.

2 | BRIDGING IDENTITY THEORY, GOAL HIERARCHIES, AND RESOURCE MANAGEMENT

Throughout their lives, people engage in several roles across different life domains. Each of these roles come along with certain demands that need to be fulfilled. In career research, this has been acknowledged in the “whole-life”-approach to career development (Greenhaus & Kossek, 2014; Litano & Major, 2016). Clearly, engaging in different roles are behavioral building blocks of a person's self-concept, however not every role is equally important for everyone. As suggested by role identity theory, the stronger one identifies with a specific role, the greater its formative power on the self (Stryker & Serpe, 1982). According to Thoits (1991), the more salient this so-called *role identification* with a specific role is, the more it will provide meaning, purpose and behavioral guidance. For example, the more individuals identify with their chosen occupation, the more they rely on this role as a meaningful and motivating part of their self-definition.

Most importantly, an individual's identity (e.g., seeing oneself as a successful engineer) is assumed to be incorporated as a higher order goal in people's goal systems (Stryker & Serpe, 1982). Thereby, identity affects the selection of lower level goals, which are enacted upon in everyday life (Unsworth et al., 2014). At the same time, when a person experiences a threat to an identity-relevant goal, the individual evaluation of the threat's relevancy is contingent upon the specific goal's place in the identity hierarchy (Thoits, 1991). In other words, threats to highly self-relevant goals are so stressful because self-identity is at stake.

Developing self-identity is of utmost importance. It guides us in setting goals, gives direction and meaning to our ambitions and activities, and is a self-reinforcing experience. In terms of developmental psychology, establishing a clear hierarchy in self-relevant goals fuels an adaptive focusing of limited resources, called selective optimization (Baltes & Baltes, 1990). This is also in line with COR theory which states that people try to “retain, foster, and protect those things they centrally value” (Hobfoll et al., 2018, p. 104). According to this theory, resources of any kind, as, for example, time and energy, help to cope with stress experiences and pave the way to gain even more resources. Resources can be “objects, states, conditions or other things that people value” (Halbesleben et al., 2014, p. 1335). Accordingly, self-relevant goals that are a result of identity formation can serve as resources to the individual through its behavioral guidance (Hirschi, 2012).

When individuals experience threat to or loss of personally important resources or when they feel unable to achieve relevant resources, they feel strained because they potentially face diminished coping capabilities that are necessary to meet future goals (Hobfoll & Schumm, 2009). An example of impeding losses is goal conflicts, which we turn to next.

3 | PERSONAL GOALS AND GOAL CONFLICTS

Personal goals describe what a person is trying to attain, maintain, or avoid in the future (Ford & Lerner, 1992). Typically, individuals hold

and pursue multiple goals (Unsworth et al., 2014). These goals can refer to a single or different life domains, such as work life and non-work life. As for identity, individuals' goals have been suggested to be hierarchically organized (Stryker & Serpe, 1982). According to the theory of self-concordance by Sheldon and Elliot (1999), goals that are in line with central personal interests, values, passions and beliefs will become part of people's identity. Goals might facilitate each other, but they can also be in conflict (Fishbach & Ferguson, 2007). Trying to pursue multiple goals at a time can become quite challenging because it is often difficult to allocate sufficient amounts of resources to each of these goals (Bélanger et al., 2019). When multiple goals that are important to the individual are perceived to be incompatible, people experience goal conflict. Such conflicts can occur within a specific domain or across life spheres. In the present study, we concentrate on goal conflict across life domains, that is, work life and nonwork life. In case of goal conflicts, individuals must decide on how they want to allocate their resources (Kaplan & Gangestad, 2005). They then will either try to balance these goals or (at least temporarily) to prioritize certain goals over others (Fishbach et al., 2009). The idea of limited resources has not only been acknowledged in COR theory, but also in other models of developmental self-regulation, such as the model of selection, optimization, and compensation (SOC; Baltes et al., 1999) or career construction theory (Savickas, 2005). As a common ground, models of self-regulation highlight the benefit of focusing on selected goals in order to avoid or reduce goal conflicts and to save on naturally limited resources. Any theory that aims at understanding the goal directedness of ontogenetic human development, including career development, has to take into consideration the relation between different goals. Changes in goal pursuit or the attainment of one goal will most likely affect other goals, too (Kung & Scholer, 2021).

4 | CAREER INVOLVEMENT

As today's careers are characterized by less prescribed career paths (Fugate et al., 2004), it oftentimes is no longer the organization that provides structure and guidance. Individuals are required to actively shape their own career paths and craft their careers in line with their personal needs, interests, and values (Briscoe et al., 2006). This leads to the assumption that a growing number of individuals rely more on their identification with their career than on their commitment to a specific employer or organization (Greco & Kraimer, 2020). Corroborating this view, Teichler et al. (2013) found academics—that is, a group of people who are generally speaking expected to be willing to cross organizational boundaries in order to optimize the fit between their career aspirations and their work environment—to feel more strongly committed to their careers than to their current job or organization.

According to Gould (1979), the extent to which people identify themselves with their chosen careers is denoted as career involvement. Following Cooper-Hakim and Viswesvaran (2005), career involvement is one subdimension of career (or occupational) commitment, which is “the development of personal career goals, the

attachment to, identification with, and involvement in those goals” (Colarelli & Bishop, 1990, p. 159). In contrast to related constructs such as organizational commitment, career commitment is characterized by a temporally and situationally enduring dedication to the envisioned career. Career commitment, sometimes also subsumed under the heading of occupational or professional commitment or professional identification, has been linked to lowered occupational turnover intentions and actual turnover (Aryee & Tan, 1992; Lee et al., 2000).

5 | THE INTERPLAY OF CAREER INVOLVEMENT AND GOAL CONFLICTS

Having a clear identity leads to the development of personal goals, which are characterized by different degrees of commitment, depending on the importance of the respective goal. This commitment will then serve as a resource. At the same time, when multiple self-relevant goals cannot be integrated or accomplished simultaneously, goal conflict arises. According to COR theory, conflicts between goals (here: from different life domains) that are important to the individual might be experienced as threats to personal resources (Hobfoll et al., 2018) because the conflict resolution requires either the investment of personal resources or the disengagement from at least one of these goals.

Following identity theory, an increase in career involvement strengthens personal identity. To the degree to which strengthened career involvement reduces the room left for worrying about functioning in other life domains, it might actually attenuate the development of future goal conflict. Conversely, when career-related identity is in question, enhanced goal conflicts may arise due to the perception that highly relevant goals from nonwork life domains are incompatible with career-related goals. Growing perceptions of goal incompatibility might fuel doubts about one's identity and call into question identity-relevant goals. According to COR theory, the resolution of goal conflicts will require the investment of coping resources, such as adapting strategies of goal pursuit, reevaluating goal relevance, or decreased investment in the work role or other life domain roles.

Oftentimes, studies on goal conflicts focus on work-to-family and family-to-work conflicts (Amstad et al., 2011; Michel et al., 2011). Recent research has observed that today, both women and men can encounter conflicts when trying to balance work and family (Galinsky et al., 2013; Shockley et al., 2017). In a cross-sectional study with both female and male employees, Greenhaus et al. (2001) found work-to-family conflict to be associated with the intention of changing one's career. This relationship was stronger for individuals who were less involved in their careers. In a study centering around women engineers, Singh et al. (2018) analyzed the relationship between both work-to-family conflicts and family-to-work conflicts with occupational commitment as well as occupational turnover intentions. Their results showed that conflicts between the work and family domains decreased women's occupational commitment, which, in turn, fueled occupational turnover intentions. However, within their time-lagged study design, they did not investigate the converse relationship,

i.e., changes in occupational commitment which lead to more or less pronounced work-to-family conflicts. In a review on how to attract women to STEM domains, Diekmann et al. (2015) employed a goal congruity perspective to argue for the importance of goal hindrance in the reluctance to pursue a STEM career. This is also supported by a recent review conducted by Boucher et al. (2017) who proposed that the perceived incompatibility to pursue communal goals while working within the STEM fields is one reason why professionals leave this domain. Myers and Major (2017) studied the relationship between work–family balance self-efficacy and commitment to a STEM career in a sample of college students and found that confidence in one's ability to balance work and family demands is positively related to being committed to a STEM career.

Because careers are lifelong endeavors, conflicts between the work and nonwork domains (which comprises the family but also other private aspects of life as friends or hobbies) pertain not only to perceived interference in everyday functioning but also to incompatibilities of long-term personal goals. The first purpose of the present study is to examine the intraindividual impact of perceived incompatibility of interdomain goals on one's career involvement. Combining identity theory and COR theory, we assume:

Hypothesis 1. Increases in intraindividual experiences of goal conflicts decrease career involvement over time.

Different researchers have pointed to the possible conflicts arising from strong investments in one life domain for other life domains. For example, past research indicated that involvement in one life domain led to increased experiences of interdomain conflicts due to an unbalanced resource allocation (Riediger & Freund, 2004). Applying this line of reasoning to an intraindividual increase in career involvement, one would expect greater career involvement to increase goal conflicts. At the same time, however, it can be argued that an increase in commitment should be reflected in one's identity hierarchy (i.e., leading to a higher position in this hierarchy), thereby making it easier to set priorities and, consequently, reducing the likelihood of goal conflict. Following identity theory, if individuals clearly dedicate themselves to one life domain, fewer interrole conflicts should be experienced (Thoits, 1991). The more relevant a certain personal role is, the more behavior guidance can be expected, rendering individuals more confident about their priorities. In that case, growing career involvement serves as a personal resource and might lead to fewer interdomain goal conflicts. In fact, more recent investigations have outlined the possible positive outcomes associated with a strong (career-related) commitment. For example, in their work-home-resources model, ten Brummelhuis and Bakker (2012) draw on COR theory to describe how investments in one life domain can also lead to resource accumulation, which can then be reinvested. Past research found commitment-related constructs to have buffering effects on interrole conflicts and work-related outcomes (e.g., job satisfaction, strain symptoms; Buonocore & Russo, 2013; Schmidt & Diestel, 2012). In a cross-sectional study, Dorenkamp and Ruhle (2019) studied the relationship between work–life conflict, occupational commitment and job satisfaction in a sample of academics.

Affective occupational commitment was positively related to job satisfaction and also diminished the negative relationship between work–life conflict and job satisfaction for academics with a non-permanent contract. However, the cross-sectional design did not allow for causal interpretation of those results. Wayne et al. (2006) investigated the importance of work and family identities for work–family enrichment, organizational commitment, and turnover intentions. Identity strength was found to be positively related to work–family enrichment, which in turn was positively associated with organizational commitment and negatively related to turnover intentions. Here, stronger identification served as a resource that had an impact on both work-related and family-related outcomes. Recently, Hirschi, Keller, and Spurk (2019) investigated positive and negative effects of calling (Hall & Chandler, 2005), which is seen as a particularly strong affective career commitment. Taking both an enrichment and a conflict perspective, the authors demonstrated a growth in calling to be associated with increases in positive experiences at work. These experiences, in turn, were associated with work–nonwork enrichment. At the same time, calling also predicted workaholism, which, in turn, was associated with conflicts between work and nonwork domains.

All in all, past research has either focused on conflicts or on enrichment that might result from strong commitment to one domain, such as the work domain. Further, methodologically, previous research is often restricted to either cross-sectional designs or other methodological shortcomings in data modeling (for an exception, see Hirschi, Keller, & Spurk, 2019). Clearly, many studies have focused on conflicts, serving either as a stressor or a stress-reaction. However, due to the mostly cross-sectional study designs, the direction of influence remains unclear (see Nohe et al., 2015).

In our study, we focus on the impact of intraindividual increase in career involvement on the respective person's goal conflict experiences. Intraindividual increase in career involvement could either be seen as a resource because it aligns goal hierarchies and potentially comes along with future gains. Alternatively, it might lead to a greater perception of goal conflict because it threatens the successful pursuit of other self-relevant goals.

Utilizing these competing lines of argumentation, we formulated two competing hypotheses:

Hypothesis 2a. Increases in intraindividual experiences of career involvement lead to greater intraindividual experience of goal conflict over time.

Hypothesis 2b. Increases in intraindividual experiences of career involvement lead to fewer intraindividual experience of goal conflicts over time.

6 | THE IMPORTANCE OF WITHIN-PERSON RELATIONSHIPS

Unlike previous longitudinal studies on career commitment and goal conflicts that mostly did not separate within-person from between-

TABLE 1 Descriptive statistics, internal consistencies, and correlations among study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Career inv. _{T1}	.72																	
2 Career inv. _{T2}	.72 ^{***}	.76																
3 Career inv. _{T3}	.67 ^{***}	.73 ^{***}	.76															
4 Career inv. _{T4}	.63 ^{***}	.66 ^{***}	.73 ^{***}	.77														
5 Career inv. _{T5}	.53 ^{***}	.56 ^{***}	.63 ^{***}	.69 ^{***}	.75													
6 Career inv. _{T6}	.50 ^{***}	.54 ^{***}	.60 ^{***}	.63 ^{***}	.73 ^{***}	.76												
7 Career inv. _{T7}	.49 ^{***}	.52 ^{***}	.54 ^{***}	.54 ^{***}	.63 ^{***}	.74 ^{***}	.76											
8 Career inv. _{T8}	.48 ^{***}	.51 ^{***}	.53 ^{***}	.54 ^{***}	.58 ^{***}	.69 ^{***}	.73 ^{***}	.76										
9 Goal conflicts _{T1}	-.22 ^{***}	-.20 ^{***}	-.18 ^{***}	-.19 ^{***}	-.18 ^{***}	-.19 ^{***}	-.17 ^{***}	-.17 ^{***}	.82									
10 Goal conflicts _{T2}	-.15 ^{***}	-.21 ^{***}	-.20 ^{***}	-.20 ^{***}	-.18 ^{***}	-.18 ^{***}	-.17 ^{***}	-.19 ^{***}	.58 ^{***}	.85								
11 Goal conflicts _{T3}	-.16 ^{***}	-.20 ^{***}	-.25 ^{***}	-.27 ^{***}	-.21 ^{***}	-.22 ^{***}	-.19 ^{***}	-.22 ^{***}	.54 ^{***}	.61 ^{***}	.86							
12 Goal conflicts _{T4}	-.17 ^{***}	-.20 ^{***}	-.23 ^{***}	-.29 ^{***}	-.22 ^{***}	-.23 ^{***}	-.18 ^{***}	-.19 ^{***}	.50 ^{***}	.54 ^{***}	.61 ^{***}	.88						
13 Goal conflicts _{T5}	-.13 ^{***}	-.14 ^{***}	-.17 ^{***}	-.21 ^{***}	-.23 ^{***}	-.23 ^{***}	-.19 ^{***}	-.21 ^{***}	.47 ^{***}	.51 ^{***}	.55 ^{***}	.62 ^{***}	.85					
14 Goal conflicts _{T6}	-.14 ^{***}	-.15 ^{***}	-.17 ^{***}	-.18 ^{***}	-.20 ^{***}	-.22 ^{***}	-.17 ^{***}	-.20 ^{***}	.46 ^{***}	.53 ^{***}	.54 ^{***}	.59 ^{***}	.61 ^{***}	.88				
15 Goal conflicts _{T7}	-.12 ^{***}	-.10 ^{***}	-.13 ^{***}	-.17 ^{***}	-.16 ^{***}	-.19 ^{***}	-.24 ^{***}	-.22 ^{***}	.43 ^{***}	.47 ^{***}	.46 ^{***}	.56 ^{***}	.59 ^{***}	.65 ^{***}	.87			
16 Goal conflicts _{T8}	-.16 ^{***}	-.14 ^{***}	-.15 ^{***}	-.19 ^{***}	-.15 ^{***}	-.19 ^{***}	-.20 ^{***}	-.25 ^{***}	.38 ^{***}	.40 ^{***}	.45 ^{***}	.51 ^{***}	.55 ^{***}	.61 ^{***}	.65 ^{***}	.87		
17 Gender ^a	-.05 ^{***}	-.07 ^{***}	-.05 ^{***}	-.06 ^{***}	-.08 ^{***}	-.06 ^{***}	-.10 ^{***}	-.09 ^{***}	.10 ^{***}	.14 ^{***}	.11 ^{***}	.11 ^{***}	.12 ^{***}	.12 ^{***}	.13 ^{***}	.11 ^{***}		
18 Age	.05 ^{***}	.06 ^{***}	.07 ^{***}	.06 ^{***}	.05 ^{***}	.05 ^{***}	.03 ^{***}	.03 ^{***}	-.04 ^{***}	-.04 ^{***}	-.04 ^{***}	-.08 ^{***}	-.06 ^{***}	-.05 ^{***}	-.02 ^{***}	-.05 ^{***}	-.10 ^{***}	
M	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.4	3.1	3.0	3.0	2.9	2.9	3.0	3.0	2.9	1.4	31.5
SD	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.5	4.1

Notes: $N_{T1} = 3095$; $N_{T2} = 2496$; $N_{T3} = 1975$; $N_{T4} = 1389$; $N_{T5} = 1757$; $N_{T6} = 1503$; $N_{T7} = 1366$; $N_{T8} = 1466$. Cronbach's α displayed in diagonal.

Abbreviation: Career inv, Career involvement.

^a1 = male; 2 = female.

* $p < .05$. ** $p < .01$. *** $p < .001$. # $p < .10$.

person effects (for an exception, see Hirschi, Keller, & Spurk, 2019), our study focuses on within-person relationships. The combination of longitudinal data with the use of the RI-CLPM enables the separation of within-person effects and stable between-person differences. This is crucial for investigating the direction of influence between related constructs, which takes place at the within-person level (Hamaker et al., 2015). Specifically, we are interested in whether an individual who experiences increases in goal conflicts subsequently reacts with reduced career involvement, and vice versa. A between-person relationship would instead describe whether individuals with more goal conflicts are also less career involved when compared with individuals with fewer goal conflicts. A focus on within-person changes will thus allow to draw more accurate conclusions about the dynamic relationships of our constructs of interest.

7 | METHOD

7.1 | Sample and procedure

The present study was part of a larger project on the career paths of early career STEM scientists that started in 2014 (see also Alisic & Wiese, 2020; Burk et al., 2016; Burk & Wiese, 2018a, 2018b; Claus et al., 2020; Frei & Grund, 2020; Lerche et al., 2022a, 2022b; Noppene et al., 2022). We recruited German-speaking participants via the web pages of universities and research institutes, internet platforms, mailing lists, and human resource departments of private companies. The longitudinal study (online questionnaire) consisted of eight measurement points with approximately 6-month intervals. Since we focused on early career scientists, PhD holders were excluded if they received their doctorate degree more than 10 years ago. The final sample comprised: $N_{T1} = 3095$; $N_{T2} = 2496$; $N_{T3} = 1975$; $N_{T4} = 1389$; $N_{T5} = 1757$; $N_{T6} = 1503$; $N_{T7} = 1366$; $N_{T8} = 1466$. At T1, participants (37.0% women) were on average 31.5 years old ($SD = 4.1$), 21.4% had children, 66.0% were doctoral students, and 33.9% were doctorate holders. The participants' educational backgrounds represented the full spectrum of STEM disciplines (5.8% mathematics, 11.3% computer science, 35.8% engineering sciences, 44.2% natural sciences, and 3.0% other STEM fields). At T1, 81.3% worked at universities or other research institutes, 14.7% in private industry, 1.0% in public service, 0.5% were self-employed, or worked in other/mixed employment (2.5%). As an incentive, participants had the opportunity to take part in raffles and win up to €2000 (~\$2,277 USD; T1 to T8).

7.2 | Measures

All self-report items had to be rated on 6-point scales (1 = *strongly disagree* to 6 = *strongly agree*). Table 1 displays descriptive statistics, internal consistencies, and the correlations between study variables at each measurement point.

Career involvement was measured with three items from Gould's (1979) questionnaire. The items were "I identify strongly with my

chosen line of work", "I get a sense of pride from my chosen line of work", and "Sometimes I wish I had chosen a different career field" (recoded).

Goal conflicts were measured with three items from a scale developed by Höge et al. (2012). The items were: "Many of the things I would like to achieve in my life are incompatible with my career plans", "To realize my future professional aims I must change my future aims in others areas of life", and "My future professional aims conflict with my future private aims".

Control variables. In all models, we included gender (1 = male, 2 = female) and age as control variables because in our sample, men and older individuals reported higher career involvement and lower goal conflicts. For gender this relationship was consistent across all measurement points (see Table 1).

7.3 | Missing data

To assess selective dropout, we regressed the participation pattern (complete vs. missing cases on one or more occasions) on scores of goal conflicts and career involvement at T1 (one at a time). The results of this logistic regression showed goal conflicts but not career involvement at T1 to predict dropout at one or more subsequent time points. Missing values, thus, were related to one of our included variables, which represents missing at random (MAR). We employed full information maximum likelihood (FIML) to address these missing values (Graham, 2009).

7.4 | Analytical approach

The analyses were performed using Mplus 7.1 (Muthén & Muthén, 1998–2015). A RI-CLPM (Hamaker et al., 2015), an advanced version of the traditional cross-lagged panel model (CLPM), was utilized to control for the stability of individual differences in goal conflicts and career involvement. Unlike the CLPM, the RI-CLPM separates between-person from within-person variance through the inclusion of random intercepts (Keijsers, 2016). These parameters are added to control for unobserved stable between-person differences (e.g., time-invariant confounders) so that changes within-persons at a certain measurement point represent predictors of within-person changes at a subsequent measurement occasion. The RI-CLPM divides the observed score variance into variance that refers to the individual's stable position (between-person level) and variance that represents the fluctuation over time around an individual's expected score. For each individual, an expected score is computed based on the grand mean levels and the individual's random intercept (Keijsers, 2016). The variance at the within-person level represents the deviation of an individual's observed measure and its expected score (Mulder & Hamaker, 2020).

In line with the procedure described by Hamaker et al. (2015) and Keijsers (2016), we regressed each observed score on a new latent factor, with factor loadings fixed at 1. The resulting within-person

latent factors represented the within-person variance. Next, two random intercept factors were included (one for each construct). All observed variables of one construct served as indicators of the corresponding random intercept factors, with all factor loadings constrained at 1. A correlation between the two random intercepts was allowed. Autoregressive paths, cross-lagged paths, and covariances at T1 to T8 were included between the within-person latent factors. Finally, error variances of the observed variables were fixed to zero (Keijsers, 2016).

To correct for non-normality of distribution, we applied maximum likelihood estimation with robust errors (Muthén & Muthén, 1998–2015). We assessed model fit by chi-square (χ^2), Tucker–Lewis index (TLI), the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Good fit is indicated by RMSEA values of $<.05$, by CFI and TLI values of $>.95$, and SRMR values of $<.08$ (Hu & Bentler, 1999). To test for differences between constrained and less restrictive models, we applied the Satorra–Bentler χ^2 difference test (Satorra & Bentler, 2001).

To examine the invariance of parameters over time, we compared the RI-CLPM with unconstrained parameters against models with constrained autoregressive and cross-lagged parameters (see Table 2). We chose the more parsimonious model if there was no impairment in fit.

8 | RESULTS

8.1 | Model comparisons

Table 2 displays the results of the model comparisons and the fit indices. The model comparison showed that the fit of the full reciprocal

model (M1) was good. Placing equality constraints on the autoregressive paths of career involvement and goal conflicts both decreased model fit (M2a and M2b). Constraining the cross-lagged paths from goal conflicts to career involvement (M3a) as well as from career involvement to goal conflicts (M3b) did not impair model fit. Therefore, the model with unconstrained autoregressive paths and constrained cross-lagged paths was chosen as the final one (M3b: $\chi^2(117) = 331.15$, $p < .001$; RMSEA = .024; CFI = .984; TLI = .979; SRMR = .034).

8.2 | Final model

The final RI-CLPM is depicted in Figure 1. At the between-person level, there was a small negative correlation between the random intercept factors of goal conflicts and career involvement ($\beta = -.26$, $p < .001$). This suggests that individuals who reported more goal conflicts also stated lower career involvement across the eight measurement points.

At the within-person level, both goal conflicts ($\beta_s = .11$ to $.36$, all $ps < .001$ to $<.01$) and career involvement ($\beta_s = .26$ to $.46$, all $ps < .001$) showed significant carry-over effects across time. All cross-lagged paths from goal conflicts to career involvement (both $\beta_s = -.05$ to $-.06$, all $ps < .001$) and all cross-lagged effects from career involvement to goal conflicts were significant ($\beta_s = -.05$ to $-.06$, all $ps < .001$). Increases in goal conflicts were predictive of subsequent decreases in career involvement (supporting Hypothesis 1); increases in career involvement were predictive of subsequent decreases in goal conflict (thereby standing against Hypothesis 2a but supporting Hypothesis 2b). Results from a Wald test showed that effects from goal conflicts to career involvement and effects from career involvement to goal conflicts did not differ in magnitude

TABLE 2 Fit indices and model comparisons for nested models

	χ^2	df	TLI	CFI	RMSEA (90% CI)	SRMR	CM	ΔCFI	$\Delta\chi^2$ (df) ^a
M1: RI-CLPM (full reciprocal model) with free structural coefficients	320.27**	105	.976	.984	.026 (.023–.029)	.033			
M2: M1 + autoregressive paths constrained									
M2a: M1 + CI paths constrained	335.87**	111	.977	.983	.026 (.023–.029)	.029	M1	.001	16.39 (6)*
M2b: M1 + GC paths constrained	359.61**	111	.974	.981	.027 (.024–.030)	.032	M1	.003	36.63 (6)**
M3: M1 + cross-lagged paths constrained									
M3a: M1 + GC $\rightarrow$ CI path constrained	325.32**	111	.978	.984	.025 (.022–.028)	.033	M1	.000	6.75 (6) n.s.
M3b: M3a + CI $\rightarrow$ GC path constrained	331.15**	117	.979	.984	.024 (.021–.028)	.034	M3a	.001	6.40 (6) n.s.
Final model: Reciprocal model with all autoregressive paths unconstrained and all cross-lagged paths constrained	331.15**	117	.979	.984	.024 (.021–.028)	.034			

Note: Δ symbolizes different scores between models.

Abbreviations: CFI, comparative fit index; CI, confidence interval; CI, career involvement; CM, compared model; GC, goal conflicts; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual; TLI, Tucker–Lewis index.

^aChi-square difference calculated using the Satorra–Bentler chi-square difference test.

* $p < .05$. ** $p < .001$.

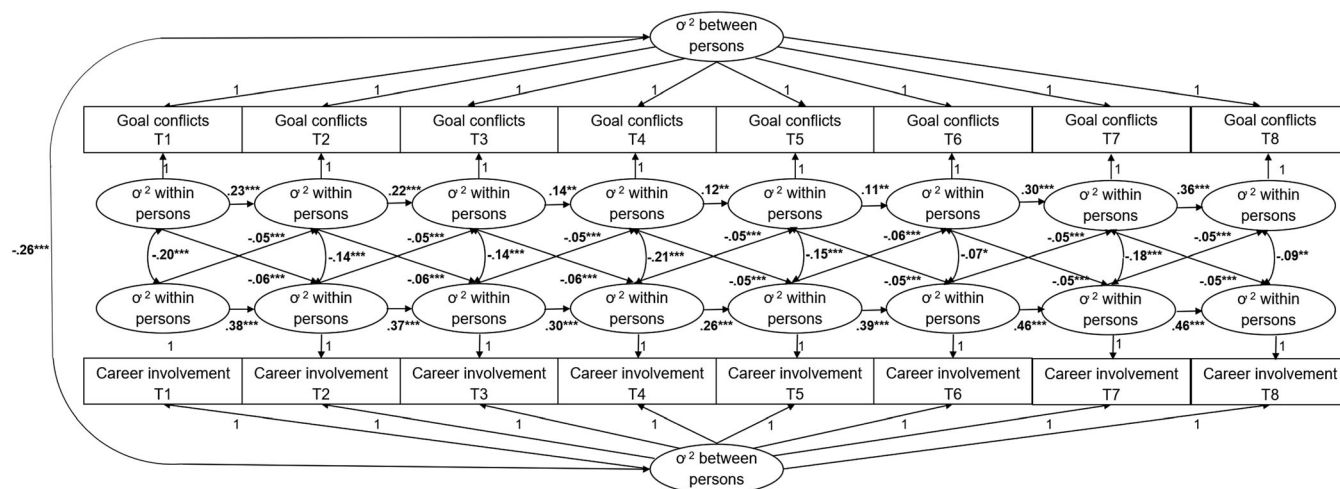


FIGURE 1 Final random intercept cross-lagged panel model (RI-CLPM). Note: Random-intercept cross-lagged panel model (RI-CLPM) with standardized coefficients for longitudinal relationship between goal conflicts and career involvement (Model 3b). *** $p < .001$. ** $p < .01$. * $p < .05$.

(Wald(1) = .21, $p = .643$). The explained variance for the latent career involvement variables was $R^2 = .08$ –.22 and $R^2 = .02$ –.14 for the latent goal conflicts variables.

8.3 | Multiple group analyses

We additionally ran multiple group analyses to examine whether the final model was equally suitable for different groups, i.e., men vs. women, PhD holders vs. PhD students, parents vs. non-parents, and employees from the private sector vs. from other occupational fields. To do this, synchronous correlations, stability, and cross-lagged path parameters were set to be the same across subgroups. Aligning parameters across subgroups did significantly impair model fit, indicating a slightly stronger increase of the career involvement autoregressive effects over time for women compared with men, $\Delta\chi^2(33) = 31.52$, $p < .01$; PhD students compared with PhD holders, $\Delta\chi^2(33) = 65.36$, $p < .01$; parents compared with non-parents, $\Delta\chi^2(33) = 56.56$, $p < .01$; and employees from the private industry compared with other occupational fields, $\Delta\chi^2(33) = 72.28$, $p < .001$. Results showed no overall differences, but a slight tendency for the autoregressive effects of career involvement to show a greater increase over time for women, PhD students, parents, and employees from the private sector (see Table 3 for multiple group estimates).

9 | DISCUSSION

In this study, we investigated the interplay of goal conflicts and career involvement. We examined the existence of bidirectional links of these constructs using an eight-wave repeated measures design with time lags of approximately 6 months. To explore within-person effects, we employed the RI-CLPM (Hamaker et al., 2015; Mulder & Hamaker, 2020); this modeling approach allowed us to deconstruct

longitudinal data into stable between-person differences and temporal within-person effects.

At the between-person level, goal conflicts and career involvement were negatively correlated. This result indicates that individuals who experience more conflicts between self-relevant work and non-work goals (compared with others) reported lower levels of career involvement across the eight measurement points (compared with others). This observation is consistent with previous research that also found a negative relationship between goal conflicts and career commitment (e.g., Demerouti et al., 2004).

Investigating within-person relationships provided greater insight into the interplay of career involvement and goal conflicts and yielded a much more differentiated pattern of results. At the within-person level, an increase in goal conflicts was predictive of a subsequent decrease in career involvement, whereas an increase in career involvement led to a subsequent decrease in goal conflicts. This corroborates our assumption that experiencing interdomain goal conflicts reduces identification with the individual's chosen career field (Hypothesis 1). Experiencing a mismatch between personally relevant goals and the resources to achieve these goals seems to endanger the stability of career commitment (and inhibit its growth). The reasons for this impact on career commitment could be manifold: First, people might feel overwhelmed by the perception of irreconcilability between goals, as they are pulled in different directions, and therefore unable to cope with it. Second, people might decide to put their investments on hold because they feel that they need to reconsider their priorities. Alternatively, as a result, they might disengage from important goals (here: commitment to their career), thereby adapting to their situation and aligning their career self-concept (Savickas, 2005).

Concurrently, individuals who experience an increased commitment to their chosen career reported fewer goal conflicts at the following time point of data collection (Hypothesis 2b). While some of the previous research has suggested that involvement in one life

TABLE 3 Random intercept cross-lagged panel model parameter estimates for analyses of different subgroups

	Gender		PhD status		Parental status		Occupational field	
	Males	Females	PhD holder	PhD student	Parent	Non-parent	Private sector	Other
	B	B	B	B	B	B	B	B
Between-person correlation	-.29***	-.23***	-.29***	-.24***	-.37***	-.22***	-.34***	-.25***
Cross-lagged effects								
T1 GC → T2 CI	-.06***	-.06***	-.06***	-.06***	-.06***	-.06***	-.05***	-.06***
T2 GC → T3 CI	-.06***	-.06***	-.06***	-.06***	-.06***	-.06***	-.05***	-.06***
T3 GC → T4 CI	-.06***	-.06***	-.06***	-.06***	-.06***	-.06***	-.05***	-.06***
T4 GC → T5 CI	-.05***	-.05***	-.05***	-.05***	-.06***	-.05***	-.05***	-.06***
T5 GC → T6 CI	-.06***	-.05***	-.05***	-.05***	-.06***	-.05***	-.05***	-.06***
T6 GC → T7 CI	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.04***	-.06***
T7 GC → T8 CI	-.06***	-.05***	-.06***	-.05***	-.06***	-.05***	-.05***	-.06***
T1 CI → T2 GC	-.05***	-.04***	-.05***	-.04***	-.05***	-.05***	-.05***	-.04***
T2 CI → T3 GC	-.06***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***
T3 CI → T4 GC	-.05***	-.05***	-.05***	-.04***	-.05***	-.05***	-.05***	-.04***
T4 CI → T5 GC	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.04***
T5 CI → T6 GC	-.06***	-.06***	-.05***	-.05***	-.06***	-.06***	-.06***	-.05***
T6 CI → T7 GC	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.04***
T7 CI → T8 GC	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.04***
Stability paths								
T1 GC → T2 GC	.26***	.23***	.26***	.19***	.28***	.22***	.25***	.24***
T2 GC → T3 GC	.20***	.27***	.25***	.18***	.31***	.18***	.25***	.22***
T3 GC → T4 GC	.13*	.17**	.15**	.16*	.14*	.16**	.16*	.13*
T4 GC → T5 GC	.15#	.10	.08	.25**	.13*	.11***	.13*	.12*
T5 GC → T6 GC	.08	.16*	.09*	.17#	.05	.15***	.10	.14*
T6 GC → T7 GC	.28***	.29**	.28***	.31***	.25***	.31***	.23***	.35***
T7 GC → T8 GC	.33***	.35***	.33***	.38***	.31***	.35***	.31***	.38***
T1 CI → T2 CI	.43***	.33***	.41***	.28***	.37***	.40***	.48***	.31***
T2 CI → T3 CI	.41***	.34***	.39***	.31***	.40***	.36***	.46***	.31***
T3 CI → T4 CI	.34***	.29***	.36***	.16#	.36***	.29***	.43***	.20***
T4 CI → T5 CI	.29***	.24***	.28***	.22*	.32***	.23***	.31***	.21***
T5 CI → T6 CI	.35***	.42***	.35***	.54*	.43***	.36***	.46***	.29***
T6 CI → T7 CI	.36***	.54***	.44***	.49***	.51***	.42***	.50***	.40***
T7 CI → T8 CI	.39***	.52***	.44***	.49***	.45***	.45***	.49***	.40***
Within-person correlation								
T1	-.18***	-.21***	-.18***	-.23***	-.17***	-.22***	-.22***	-.17***
T2	-.14***	-.14***	-.15***	-.12*	-.15***	-.14***	-.17***	-.13***
T3	-.16***	-.12**	-.16***	-.11*	-.12**	-.16***	-.14**	-.13**
T4	-.24***	-.17**	-.22***	-.17*	-.22***	-.20***	-.17***	-.24***
T5	-.13***	-.18***	-.13***	-.23**	-.17**	-.13**	-.15***	-.13**
T6	-.08#	-.06	-.09*	.02	-.03	-.10*	-.05	-.08#
T7	-.18***	-.17**	-.15***	-.30***	-.18***	-.18***	-.20***	-.16***
T8	-.08#	-.13**	-.11***	-.08	-.05	-.14***	-.09#	-.12**

Abbreviations: CI, career involvement; GC, goal conflicts.

* $p < .05$. ** $p < .01$. *** $p < .001$. # $p < .10$.

domain could lead to increased experiences of interdomain conflicts due to an unbalanced resource allocation or incompatibilities in the pursued goals (Riediger & Freund, 2004), identity theory points to the behavioral guidance of roles that are central to an individual's self-definition (Thoits, 1991). Our results support Hypothesis 2b that increases in career involvement do not engender feelings of interrole conflicts but rather reduce them. While this sounds controversial at first glance, the result pattern of positive versus negative findings may be a matter of short-term versus long-term perspectives. Most of the previous research has focused on a short-term perspective, in which investments in one domain were associated with conflicts in other domains (Halbesleben et al., 2009). The conceptual distinction between short-term and long-term processes is consistent with COR theory, which is viewed as a dynamic theory wherein different types of temporal trajectories can be investigated. For example, resource investment may be followed by short-term resource loss, but can—if spent effectively—result in long-term resource enrichment. Therefore, career involvement might represent an investment that could lead to resource losses in the short term but also to long-term gains in resources (for example, by taking time to reflect on own goals, by identifying conflicts with goals from other domains, by considering how to resolve those conflicts, and by developing concrete action plans). The idea that investments in one life domain that can even enrich other life domains as well has also been introduced in a recent extension of COR theory by ten Brummelhuis and Bakker (2012). Our study particularly contributes to a deeper understanding of longer-term processes.

We addressed recent calls to investigate autoregressive effects, which have, so far, remained unexplored in previous research (Zyphur et al., 2020). Our findings indicate that current levels of a person's goal conflict and career involvement are, to some extent, “carried over” from previous measurement occasions. Thus, an increase in goal conflicts or career involvement is also a matter of habitual behaviors and attitudes. Estimates of the autoregressive effects, however, differed across measurement points (with a tendency to increase over time) and were generally higher for career involvement than for goal conflicts. Subgroup analyses showed that, over time, the autoregressive effects of career involvement increased more for women compared with men, PhD students compared with PhD holders, parents compared with non-parents, and employees from the private sector compared with employees from other sectors. These findings, which emerged in post hoc analyses, point to the need for more in-depth subgroup analyses in the future.

Our study revealed constant gender differences in mean levels of goal conflicts across all measurement points, with women experiencing higher levels of conflict. This gender difference is remarkable because these women had not previously fallen off the “leaky pipeline.” This could be interpreted as a relatively high degree of stress resilience in this specific group of female professionals. However, and more importantly for this study, the cross-lagged pattern between career involvement and role conflicts is evident for both men and women. Thereby, our findings point to the importance of studying intraindividual changes over time.

Additionally, we did not find mean level differences with regard to career involvement between men and women. While other researchers have found female students to be less identified with their career than men (see, e.g., Seyranian et al., 2018), recent findings by Burleson et al. (2021) did not confirm these gender differences. From their findings, the authors concluded that “gender differences in professional identity in male-dominated STEM fields are not ubiquitous” (p. 9). Our results support this observation. Sometimes, gender differences might even run counter expectations as it was the case in a study by Myers and Major (2017) who found—based on a university students with STEM majors—that men experienced a stronger association between work-family balance self-efficacy and commitment to a STEM career than women. But, of course, experiences of undergraduates cannot be generalized to the experiences of young professionals, and work-family balance self-efficacy beliefs are different from interrole conflicts. For instance, in a sample of young professionals in their 30s as ours, conflicts between career goals and family-related goals might bear a different meaning than it is the case for undergraduates as, for instance, the developmental deadline for having a child is coming closer in the older group, especially for women. In our view, identification with the chosen career can protect from perceiving career-related goals as a threat to the fulfillment of private goals, while—at the same time—increases in conflicts between work and nonwork goals can pose a threat to a person's career flourishing. Gender differences that have been found with regard to professional identity in previous research might rather be a result of women perceiving their career goals to be incompatible with their nonwork goals than them being less committed to their profession than men.

9.1 | Strengths, limitations, and implications for future research

Our research complements previous investigations on goal conflicts and the identification with one's profession. By using the RI-CLPM (Hamaker et al., 2015), we were able to demonstrate that career involvement and goal conflicts have a reciprocal relationship at the within-person level. The inclusion of the eight-wave design and the advanced modeling approach for analyzing longitudinal data (i.e., Hamaker et al., 2015; Mulder & Hamaker, 2020) are clear strengths of the present study. Additionally, the study sample consisted of a large number of individuals from the STEM fields. From a content point of view, previous research mostly focused on other forms of commitment, such as organizational commitment. In our study, we focused on commitment to one's chosen career. This construct is deemed to be particularly relevant when it comes to not only leaving a specific company but to withdrawal from a chosen career path.

Most importantly, previous research on conflicts and commitment did not focus on the interplay of the constructs of career commitment and interrole conflicts over time, which is necessary to make causal interpretations (Dorenkamp & Ruhle, 2019; Hirschi, Keller, & Spurk, 2019). Within our research, we shed light on the longitudinal

interplay of goal conflicts and career involvement in a multi-wave design. This led to important new insights. First, our results support former research, indicating that goal conflicts both predict and are a result of changes in work-related commitment (Demerouti et al., 2004; Nohe et al., 2015) but we also demonstrated this association on the intraindividual level, that is, the level of interest when it comes to individual career development. Second—and in contrast to previous studies—we showed that increased career involvement does not result in higher but in a subsequent decrease in goal conflicts, thereby highlighting the possibility of upward spirals. The idea of gain and loss spirals is supported within two central corollaries of COR theory formulated by Hobfoll (2001): The first one is the assumption that resource losses will foster future losses, and the second one is the idea that gain will more likely lead to more gains in the future. Both processes are depicted in our study: We investigated the interaction of two variables from an intraindividual perspective and were able to show that positive and negative changes result in exactly these two spiral processes of gains and losses. This also highlights the importance of stopping a vicious circle of resource losses (here: increased goal conflicts or decreased career involvement) by becoming aware of and strengthening one's own identity. Future research should investigate how individuals who are trapped in a loss spiral can invest existing or accumulate new resources. Also, former studies on role conflicts and career commitment have mostly focused on career commitment as a buffer within the relationship of role conflicts and work-related outcomes. Dorenkamp and Ruhle (2019), for instance, argue that their findings reflect that “feelings of belonging to the academic profession and the joy and pride in working as an academic directly increased academics' job satisfaction but were also important in compensating for such conflicts.” (p. 19). However, in our study, career commitment is not a compensator but carries the potential to reduce conflicts between competing goals.

Within our study, we were able to show that, from a long-term perspective, people who experience increases in their career involvement report fewer work–nonwork conflicts. This conflict reduction can result from different causes. Following COR theory, it might be due to a resource allocation that leads to a decreasing commitment towards or even abandonment of those nonwork goals that stood in conflict with career-related goals. Also, goals could be revised, for example, by postponing nonwork goals in favor of professional goals. Both explanations are in line with the underlying assumption of identity theory which states that more relevant roles will guide behavior. Within COR theory, it is assumed that resource investment reflects the value one ascribes to a given resource. If a person experiences the career to become more self-defining, they will try to protect it against research loss, in this example by subordinating or even abandoning other goals. An alternative explanation that is in line with enrichment perspectives is that the resources gained by increases in career commitment might entail, for example, strengthened self-efficacy beliefs or material goods, which then are useful for the successful pursuit of nonwork goals.

As any study, the current study also has a number of limitations. Our study underlines that perceived goal conflicts put career

involvement at risk. Past research has shown that occupational commitment is distinct from withdrawal intentions (Hackett et al., 2001) though. Thus, future research should investigate whether the interplay of goal conflicts and career involvement predicts actual vocational turnover in the long run. Moreover, although our sample represents a highly relevant group for the job market, a replication with a non-STEM sample is highly recommended. In addition to career involvement, involvement in other life domains should be considered in future research. In our study, we focused on career involvement and demonstrated changes in career involvement to affect perceived goal conflicts and vice versa. We did not consider information on the relative importance of and changes in other life domains (Greer & Egan, 2012). This is something to be done in future research to provide further insight into the interplay of goal conflict and both career involvement and nonwork involvement. On the side of gain spirals, greater commitment to one's career does not necessarily diminish importance of other life domains. Instead, they could still be seen as important but people might try to temporarily put more importance on one life domain. Accomplishments in one domain could then be perceived as beneficial for other life domains because people might have gained resources (from this accomplishment or simply because goal attainment in one domain could mean to have more time for other life domains in the future). For example, a doctoral student might temporarily focus on achieving a PhD. Accomplishing this career step might increase the feeling of now being ready to start a family. This would go hand in hand with the idea of COR theory and work–family–enrichment perspectives. Hence, future studies should investigate whether and under which circumstances positive change or accomplishments in one domain lead to either a lower or higher subsequent involvement in other domains.

Future research would benefit from assessing career involvement in greater detail. Following self-concordance theory (Sheldon & Elliot, 1999), personal goals that are in line with personal beliefs, values, or interests, hence, self-concordant, will be most strongly manifested in people's identities. According to the authors, goal attainment of self-concordant goals leads to enhanced well-being while non-concordant goal attainment does not. In other words, whether the personal goal is intrinsically or extrinsically motivated is of utmost importance for goal attainment (and maybe also for the experience of conflicts with other goals) and for the personal evaluation of career success. In our study, the focus was on intrinsically motivated career involvement, though, of course, we cannot be completely sure about the extent to which this involvement is influenced by external expectations, too (see Ryan & Deci, 2000). Future studies should investigate intrinsic as well as extrinsic motivational orientations, their links to identity, and processes that evolve from intrinsic versus extrinsic motivation in greater detail. Our study has provided insight into the guiding power of highly relevant goals for goal alignment. Still, the question remains, how multiple self-concordant goals can be handled simultaneously. It might be helpful for people to know about their limited resources and the importance of setting priorities. Future research should study whether an in-depth reflection on personally relevant goals, potential conflicts, and limited resources can help to

(at least temporarily) set priorities, thereby reducing the experience of goal conflicts.

When it comes to sustaining career involvement over the long term, individuals must demonstrate adaptability to cope with changing working conditions and environmental demands, as postulated by career construction theory (Savickas, 2005). Career adaptability also means that people still feel in control when confronted with new demands and are able to integrate their adaptive behavior into a self-view of having a meaningful career that they feel committed to. But future research might also focus on how people could learn to manage the tension resulting from the pursuit of multiple goals, as some degree of interrole conflict is inevitable from a “whole-life”-perspective. Mild to moderate levels of conflict do not have to give rise to withdrawal from the involved identity domains. This is in line with Boudreaux and Ozer (2013), who argue that not all people are inhibited in goal attainment when experiencing goal conflicts. Future research should investigate interindividual differences between those whose goal strivings are impeded and those who still attain their goals when experiencing goal conflicts.

Finally, conflicts as conceptualized in our study referred to anticipated future goals, which might be different from daily struggles to meet role-related demands. These daily struggles might exert different effects on career involvement.

9.2 | Practical implications

Both perceived goal conflicts and career involvement mutually influence each other which can lead to an upward as well as a downward spiral. On the one hand, increases in career involvement lead to a reduction in perceived incompatibilities which, in turn, is followed by increases in career involvement. On the other hand, if the perception of goal conflicts increases, career involvement, which is relevant for subsequent goal conflict reduction, decreases. From a practical point of view, if the goal is to keep commitment to a chosen career path high, interventions could either try to reduce strain (i.e., sources for goal conflicts) or build up career resources (i.e., commitment to the career). Individuals would benefit from assistance in self-reflection of their personal identity at early stages of their career. Clarity about what is important to oneself could increase the ability to align and prioritize goals. Important additional suggestions have been made by Hirschi, Shockley, and Zacher (2019). Within their theoretical action regulation model, they have proposed four ways in which to achieve work–family balance: allocating resources, changing resources and barriers, sequencing goals, and revising goals. Resources that are relevant for the work domain might be identified and strengthened through counseling (Hirschi, 2012). At the same time, it should be acknowledged that individuals have multiple goals. Nowadays, men and women put emphasis on both work-related and family-related goals (Galinsky et al., 2013). This has been underlined by recent investigations in the United States showing that, within a group of first-time parents, both women and men drop out of STEM fields at a higher rate than those without children (Cech & Blair-Loy, 2019).

Workplace initiatives have the power to reduce work–family conflict (Kelly et al., 2011). Providing structural opportunities to increase the compatibility between work and nonwork goals could foster identification with the career and reduce the likelihood of professional withdrawal. This has also been proposed by Boucher et al. (2017) who have pointed to the relevance of perceived incompatibility between STEM occupations and communal goals and suggest that the opportunities provided in the STEM fields should be put to the fore. Considering that perceived conflicts still affect career commitment at an advanced stage as the PhD and the postdoctoral level, gives an idea of how many people have previously been lost on this career path. As women in particular are known to be underrepresented in STEM research and even those who enter these STEM careers to leave these careers more frequently (Huyer, 2015), efforts to reduce the perceived incompatibility between private goals and a dedication to a STEM career are highly required.

9.3 | Concluding remarks

We demonstrated that a reciprocal within-person relationship exists between goal conflicts and career involvement in a large sample of doctoral students and doctorate holders within the STEM fields. This extends previous research that mostly investigated the interplay of goal conflicts and commitment on the between-person level. The necessity of longitudinal research in career research has been acknowledged for decades. Clearly, conducting longitudinal data requires substantial effort. But implementing a longitudinal design is only a first step, we also need to use adequate modeling techniques in order to utilize the full potential of such data. The present study's combination of a longitudinal, multi-wave dataset with an advanced modeling approach gave more detailed insight into change processes within individuals.

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CONFLICT OF INTEREST

No conflict of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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