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Faculté des sciences sociales et politiques

FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES
INSTITUT DE PSYCHOLOGIE

# The contribution of individual and professional characteristics to general and work-related well-being

THÈSE DE DOCTORAT

Présentée à la

Faculté des sciences sociales et politiques
de l'Université de Lausanne

pour l'obtention du grade de
Docteur en Psychologie

par

CLAIRE JOHNSTON

Directeur de thèse
Professeur JÉRÔME ROSSIER
Institut de Psychologie, Université de Lausanne

Co-directrice de thèse
Professeure FRANCISKA KRINGS
Département de Comportement Organisationnel, Université de Lausanne

Jury

Professeur Fabien Ohl, Doyen de la Faculté SSP, Université de Lausanne, Président
Professeur Dario Spini, Université de Lausanne, Rapporteur
Professeure Anu Realo, Université de Tartu, Estonie, Experte
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- Anu REALO, Professeure à l'Université de Tartu
- Dario SPINI, Professeur à l'Université de Lausanne
- Hannes ZACHER, Professeur à la University of Groningen, NL

autorise, sans se prononcer sur les opinions du candidat, l'impression de la thèse de Madame Claire JOHNSTON, intitulée :

***« The contribution of individual and professional characteristics to general and work-related well-being »***

Lausanne, le 20 mars 2015

***Le Doyen de la Faculté***

Professeur
Fabien Ohl

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# The contribution of individual and professional characteristics to general and work-related well-being

Claire S. Johnston

**Résumé**

Cette thèse porte sur la contribution des caractéristiques individuelles et des situations professionnelles au bien-être. En combinant différentes perspectives théoriques, notamment la théorie de la construction de la carrière, la théorie de la justice organisationnelle, les modèles du bien-être au travail, et les conceptualisations de l'incivilité au travail, un certain nombre d'hypothèses sont proposées concernant le lien entre certaines caractéristiques individuelles et situationnelles et le bien-être général et professionnel.

Les deux premières études se focalisent sur la validation d'une échelle d'adaptabilités de carrière et sur le rôle médiateur de cette adaptabilité dans la relation entre des dispositions et le bien-être. La troisième étude évolue l'hypothèse d'un possible effet de médiation de l'adaptabilité mais cette fois de la relation entre insécurité professionnelle et charge de travail d'une part et le bien-être d'autre part. La quatrième étude adopte une perspective longitudinale et analyse les associations entre les dimensions de la personnalité, l'adaptabilité de carrière et le bien-être dans quatre parcours professionnels différents. La cinquième étude porte sur une autre caractéristique individuelle, à savoir la croyance en un monde juste. Cette étude illustre comment la croyance en un monde juste influence les perceptions de justice organisationnelle une année après, qui ont une incidence importante sur le bien-être. Enfin, la dernière étude se concentre sur une population spécifique, les immigrants en Suisse, et souligne qu'être la cible d'incivilité sur le lieu de travail est généralement liée au pays d'origine.

Globalement, cette thèse met en évidence que les caractéristiques individuelles ont des effets tant directs qu'indirects sur le bien-être et que ces mêmes caractéristiques expliquent en partie, les relations entre la situation professionnelle et le bien-être. Plus spécifiquement, des situations professionnelles peuvent influencer l'expression de certaines caractéristiques individuelles, soit en contribuant à leurs activations ou à leurs inhibitions. De plus, l'impact des caractéristiques individuelles sur le bien-être semble dépendre de la situation professionnelle. Il est donc important de considérer les influences simultanées et réciproques des caractéristiques individuelles et de la situation contextuelle et professionnelle pour rendre compte du bien-être général et professionnel.

**Summary**

This thesis explores how individual characteristics and professional situations correspond to well-being. Drawing from various theoretical backgrounds, such as career construction theory, justice theory, models of job strain, and theories on subtle discrimination, a number of specific hypotheses are put forward pertaining to a selection of individual and professional aspects as well as general and work-related well-being. The six studies presented in this thesis focus on specific aspects and adopt different methodological and theoretical approaches.

The first two studies concern the validation of the career adapt-abilities scale and test the potential of career adapt-abilities to mediate the relationship between dispositions and outcomes. The third study extends the hypothesis of career adapt-abilities as a mediator and finds that it mediates the effects of job insecurity and job strain on general and professional well-being. The fourth study adopts a longitudinal approach and tests the associations between personality traits and career adaptability and well-being in four different professional situations. Study five concerns another individual characteristic, belief in a just world, and illustrates how justice beliefs drive perceptions of organizational justice, which in turn impact, on well-being outcomes one year later. The final study focuses on the professional experiences of a specific population, immigrants in Switzerland, and confirms that being a target of incivilities is related to national origin.

Globally, this thesis finds that individual characteristics have direct and indirect influences on well-being and that these characteristics may also mediate the associations between professional situations and outcomes. In particular, the professional situation may alter the display of individual characteristics, either by contributing to their activation or their depletion, and the ways in which individual factors influence well-being does seem to depend on the professional situation. It is thus necessary to adopt a "both…and" perspective when studying the impact of individual and professional characteristics as these factors mutually influence each other.

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**Preface**

In thinking about how to compile this thesis, it became apparent that an understanding of the context in which this work was undertaken might enhance the reading of this thesis. Unlike some other doctoral students who propose their own project, I joined a project that had already begun and thus made decisions within the context of this project and with its objectives in mind. The project thus offered a framework in terms of methodology and general research questions, and within this structure, I was free to choose the aspects that I found interesting to base my research on. Forming the foundation of my work is my educational background. I have a Master's degree in Industrial and Organizational Psychology, which by its nature, is a field that draws from different psychological schools of thought and also borrows from the study of management. In my doctoral studies, I wanted to maintain this diversity and was afforded this opportunity by the project that I worked within. Being part of a project influenced my choice to do a thesis by article, rather than choosing to write a traditional manuscript.

The opportunities provided by the project to publish and collaborate with team members with varied expertise, allowed me to treat number of different themes and draw from diverse conceptual backgrounds and theoretical frameworks in my work. This was advantageous to me in terms of developing my profile as a young researcher and beneficial to the project with reference to research output, but nonetheless necessitated a slightly different approach. I did not have a global project with various aspects addressed by different chapters. Instead, I have a series of mini-projects that center around the same theme and offer a contribution to the subject at large.

In order to present an overall thesis, I was required to integrate my work by providing a general introduction and conclusion. In this task, I identified two main challenges. First, I wanted to avoid redundancy and repetition, and second, I needed to find a way to combine

numerous theoretical backgrounds found throughout my work. Accordingly, I chose to position my work within a larger research theme that permitted the treatment of different subthemes. Thus the coherence of this thesis is not found in the answer to a research question. Rather, it is found in a common theme underpinning all of the research that is presented in the thesis that follows.

# I. Introduction

## 1. The professional landscape

Words such as "work" and "career" are increasingly taking on new meaning and are no longer easily used as defining terms that correspond clearly to a particular position or predefined pathway. Rather, there is an increasing prevalence of alternative forms of work and employment (Cappelli & Keller, 2012) that have given rise to new career types, and pathways of development (Biemann, Zacher, & Feldman, 2012; Chudzikowski, 2012).

New ways of working have mostly evolved in response to global trends such as globalisation, the diversification of the labour market and economic pressure (e.g. Biemann, Fasang, & Grunow, 2011; Kurz, Hillmert, & Grunow, 2006). The macro context of the labour market affects the emotions, cognitions and behaviors of individuals (Oishi & Graham, 2010) as the demands of social change are translated into changes that are evident in the daily lives of individuals (Tomasik & Silbereisen, 2009). Changes include increased insecurity, a decrease in stable long-term positions, and increased demand for flexibility, skill transition, and quick knowledge acquisition (Cappelli & Keller, 2012; DeBell, 2006; Kalleberg, 2009). This necessitates more frequent career transitions and an increased likelihood of facing unemployment, but also changes in the content of work and the context in which it is performed, increasing the possibility of negative outcomes for the individual (Fouad & Bynner, 2008; Okhuysen, Lepak, Ashcraft, Labianca, Smith, & Steensma, 2013; Rudisill, Edwards, Hershberger, Jadwin, & McKee, 2010). The potential thus exists for individual health and well-being to be at risk as individuals navigate an increasingly complex labour market and face progressively more demanding work environments.

Progressively, researchers acknowledged that individuals do not passively respond to situations (Mischel & Shoda, 1995) which resulted in researchers giving joint consideration

to both individual factors as well as environmental factors or events as elements that contribute to well-being (Diener et al., 1999; Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). Adopting a somewhat over simplified perspective, three principles can be drawn from this work. First, individual differences and personality dispositions influence individual behavior and well-being (e.g. McCrae & Costa, 1999). Second, the context and events can also affect behavior and well-being (e.g. Matsumoto, 2007). Third, interactions between the individual and environment exist, such that it is no longer the person nor the situation that are the sole influencer of behavior and well-being, but rather the combination of the two (e.g. Mischel & Shoda, 1995; 1998).

These three principles from the basis of this thesis that explores how individual characteristics and professional situations correspond to well-being. Concerning the first principle, four types of individual differences are included in this thesis; the five factor model of personality (McCrae & Costa, 1999) with the personality traits of neuroticism, extraversion, conscientiousness, openness, and agreeableness; enduring beliefs about the justice of the world (Lerner, 1987); positive psychology dispositions in the form of orientations to happiness (Seligman, 2002); and regulatory characteristics in the form of career adaptability (Savickas, 1997; 2005). For the second principle, the professional environment is considered in terms of professional transitions (Biemann et al., 2012; Fouad & Bynner, 2008); the ways the individual perceives the work environment with reference to job insecurity (DeWitte, 2005a), job characteristics (Karasek, 1979), and organizational justice (Colquitt, 2001); and finally the individual experience of workplace incivility (Andersson & Pearson, 1999). The third principle as it pertains to the person-situation interface will be considered in different ways. First, individual characteristics may influence how individuals perceive and appraise situations. Second, situations may activate or alter certain individual characteristics. Individuals possess characteristic adaptations (McAdams &

Pals, 2006) or cognitive-affective mediating units (Mischel & Shoda, 1995) motivational, social-cognitive, and developmental adaptations that are sensitive to environmental and cultural influences and more likely to change over time (McAdams & Pals, 2006). Finally, personality theory (Buss & Cantor, 1989; Little, 1999; McCrae & Costa, 1999) suggests that individual dispositions can be mediated by other individual characteristics, and that this process is often in response to contextual factors. Thus, individual characteristics can be involved in regulation in response to the situation, but also in terms of behavioral expression of dispositions. The person-situation interaction can be grossly represented by either the situation prompting the individual response, or the individual influencing the situation, and indeed these interrelations between person and situation are constantly occurring.

The remainder of the introduction proceeds as follows. First the main aims of this research are presented. Following this, the importance of work for well-being is elaborated on, with attention given to each of the specific professional aspects included in the thesis. This essentially lays the groundwork in that the main effects of the professional situation on well-being are established. Then the importance of individual characteristics for well-being is presented. This permits the development of the links between the person and the professional situation, arguing for the joint consideration of both these factors. Brief mention is then made of the questionnaire validation aspect of this thesis. The introduction concludes with an outline of the structure of the thesis.

## 2. Main aims of this research

The main of this thesis is to explore the contribution of individual characteristics and professional factors to general and work-related well-being. In particular, special attention will be given to understanding how individual and professional factors work together by considering the processes linking individual and professional factors. Individual

characteristics, professional factors, and well-being outcomes are measured using a variety of indicators. Firstly, individual characteristics are considered on different levels. Personality dimensions are included with measures of neuroticism, extraversion, conscientiousness, agreeableness, and openness. Another individual difference from the positive psychology tradition, which is sometimes considered as a stable disposition, orientations to happiness, is incorporated. Career adaptability is included as an example of an individual regulatory process. Belief in a just world provides a measure of an individual's beliefs, in this case, specifically about the justness of the world. Secondly, for the professional factors, a distinction is made between individual perception and individual experience. Perceptions of job strain, job insecurity, and organizational justice capture how the individual views his or her professional situation. Individual experiences of unemployment, professional transitions, and workplace incivility provide a more direct way to consider the workplace. Finally, well-being outcomes are integrated on a general level with life satisfaction, self-rated health and psychological health, and on a professional level with job satisfaction and work stress. Each empirical chapter focuses on different above-mentioned aspects and contributes to the main aim in some way as is delineated in what follows.

Chapter 2 starts with the aim of validating a French-language version of the career adapt-abilities scale, further contributing to the construct validity of career adaptability. Chapter 3 extends this foundational work by validating the German version of the career adapt-abilities scale. A second aim of this chapter is to test the possibility that career adaptability is involved in the regulation of personality dispositions and that by mediating orientations to happiness, career adaptability contributes to a reduction of work stress. Chapter 4 tests the relationships between professional factors (job strain, job insecurity, and unemployment), career adaptability, and professional and general well-being, and has several aims. Firstly, this chapter tests if various professional situations correspond to different levels of career

adaptability. Secondly, it investigates the independent contributions of professional factors and career adaptability to well-being. Thirdly, it proposes that career adaptability mediates the relationship between professional factors and well-being outcomes. Chapter 5 aims to test the contribution of personality traits and career adaptability to well-being in different professional situations. It adopts a longitudinal approach and hypothesizes that professional situations correspond to varying levels of career adaptability and well-being. This chapter also tests if individual characteristics have differing importance for well-being based on the professional situation. Chapter 6, another longitudinal study, investigates the processes linking justice beliefs to organizational justice perceptions and the implication of this process for professional well-being. Its main aim is to test that personal belief in a just world, and not general belief in a just world, drives perceptions of organizational justice, in turn contributing to improved job satisfaction and reduced work stress. The final chapter focuses on a particular professional experience, that of workplace incivility, and proposes that one's nationality is an important predictor of incivility experiences. Its second aim is to test if, on the part of the target, these incivility experiences are perceived as subtle discrimination.

## 3. The importance of work for well-being

Subjective well-being (SWB) refers to people's evaluations of their lives and typically consist of positive and negative affect and satisfaction judgements which can be made in relation to different aspects or domains of life (Diener & Lucas, 1999; Diener, Suh, Lucas, & Smith, 1999). Although the work of Diener and colleagues considers specifically the aspects of positive and negative affect and life satisfaction, they also note that SWB is "a general area of scientific interest, rather than a specific construct" (Diener et al., 1999 p. 277). This is in line with other researchers who have concluded that well-being can be understood and defined using many different approaches (Kim-Prieto et al., 2005). Thus in this thesis, well-

being is used as an umbrella term including positive aspects of well-being such as life satisfaction, psychological health, and self-rated health, as well as negative aspects such as work stress that represent well-being in different life domains.

Broadly speaking, economic factors such as GDP, unemployment rates and perceptions of job market conditions matter for individual well-being (Tay & Harter, 2013). More specifically, work is central to psychological health, and provides opportunities for practical and psychological need fulfilment (Blustein, 2006; 2008; Brown & Lent, 2004; Hall, 1996; Spector, 2005). There is ample and convincing evidence for the main effects of employment status and work related factors on well-being, but these associations are complex, a notion that will be elaborated in the sections that follow.

3.1. (Un)Employment and well-being

Various theories have been proposed as explanations for why employment, or the lack thereof, has consequences for individual well-being. In particular, Jahoda's (1981) latent deprivation theory suggests that work provides benefits for the individual. Manifest benefits are financial, whereas latent benefits include time structure, social contact, collective purpose, status and activity. Similarly, Warr (1987) proposed that work provides access to factors necessary for mental health such as status and skill development. For both Warr and Jahoda, the decrease in well-being during unemployment is as a result of reduced access to the benefits of work, or to the factors provided by work that contribute to mental health. Indeed, research shows that unemployment is associated with worsening psychological and physical health (Creed & McIntyre, 2001; Ervasti & Venteklis, 2010; Paul & Moser, 2009).

Globally, our understanding is that work corresponds to well-being, whereas unemployment relates to reduced psychological health. However, complexities in these relationships emerge. Take for example that with regaining employment, well-being does not revert back to pre-unemployment levels, and that unemployment seems to have a long-term

"scarring effect" (Clark, Georgellis, & Sanfey, 2001; Lucas, 2004). The negative effects of unemployment also seem to vary significantly according to factors such as sample type (e.g. school leaver vs. mature unemployed), unemployment duration, and previous experiences of unemployment (Clark et al., 2001; McKee-Ryan, Song, Wanberg, & Kinicki, 2005). Unemployment even has consequences for those who are employed through feelings of guilt and shame, perceived insecurity and higher levels of workload (Clark, Knabe, & Ratzel, 2010). For those who are employed, underemployment (in terms of hours, income, skills, and status) also contributes to lower levels of health and well-being (Friedland & Price, 2003). Characteristics of employment such as repetitive work, high psychological demands, low social support (Borg, Kristensen, & Burr, 2000; Karasek, 1979), prejudice and discrimination (Petersen & Dietz, 2005), and perceived insecurity (DeWitte, 2005a) may also threaten well-being. Consider too that transitions from employment to other forms of non-employment (such as maternity leave) are also associated with an increase in psychological distress (Thomas, Benzeval, & Stansfeld, 2005).

The selection of considerations presented above suggests that the associations between employment status and well-being are not clear-cut, and that "employed" and "unemployed" are not homogenous groups. Any number of potential factors could be considered, but in this thesis particular attention is given to five specific aspects; professional transitions, job insecurity, job characteristics, organizational justice, and workplace incivility. The inclusion of these different situational aspects reflects the hierarchy of contexts in which the individual is situated from the macro to the micro, with these different contexts exerting an influence on the individual (Tay & Harter, 2013). These aspects differ also in how much they rely on individual perception; professional transitions are perhaps more objective, whereas perceptions of job insecurity and job characteristics are possibly more subjective. Nonetheless, these different situations are equally valid as they represent part of the

individual experience. Each of these aspects will be further developed in the sections that follow.

### 3.1.1. Professional transitions

Career development is reflected in a series of choices that an individual makes throughout the life-span and includes phases of stability and transition, and may also include periods of unemployment (Biemann et al., 2012; Fouad & Bynner, 2008). These phases and choices may be driven by individual or external factors (Hess, Jepsen, & Dries, 2011; Rudisill et al., 2010) and are either voluntary or involuntary (Fouad & Bynner, 2008). The move from one phase to another, or career transitions, may represent small discontinuities, but also major disturbances (Gunz, Peiperl, & Tzabbar, 2007) and are often considered as a psychological challenge for the individual (Fouad & Bynner, 2008; Rudisill et al., 2010). Positive outcomes such as satisfaction, career success, growth, and skill acquisition may also be consequences of career transitions (Chudzikowski, 2012; Verbruggen, 2011).

Career transitions can be broadly classified according to type of transition such as organizational (within or across organizations), horizontal (changes in function, division or department) or vertical (promotions and demotions) (Chudzikowski, 2012). Alternatively, career patterns can be identified according to defining features that characterise a particular pattern such as stability, full-time employment, part-time employment, self-employment, and career mobility (Biemman et al., 2012). In this thesis, a combination of the two approaches presented above is used, and professional pathways are broadly classified according to the defining feature of a state, such as unemployment, and the movement between states. A longitudinal perspective is adopted, in that individuals are classified based on their employment status at two points in time, one year apart. Thus four categories are considered; the *active no change group* (i.e. those who have remained in stable employment, whether part-time or full-time, or self-employed); the *active change group* (i.e. those who have

remained in stable employment, but have experienced a change whether this be organizational, horizontal or vertical); the *unemployed-active group* (i.e. those who moved from unemployment into employment (part-time, full-time, self-employed); and finally, the *unemployed-unemployed group* (i.e. those who have remained unemployed). In these classifications, not only is the "state" important (e.g. employed or unemployed), but also the movement from one state to another, and the stability in a state over time, as these all have clear implications for well-being.

The impact of professional transitions on well-being will be studied according to these four groups. These groups capture different elements of career pathways and provide a means to consider the effects of different employment situations and transitions on well-being. Having individuals in the four groups also provides a point of comparison between different professional situations that are situated in the same global context, that is the same time frame and country.

#### 3.1.2. Job insecurity

Job insecurity is defined as the "perceived threat of job loss and the worries related to that threat" (DeWitte, 2005a, p. 1). Job insecurity is a subjective perception, it is often involuntary and it involves a sense of powerlessness (DeWitte, 2005a; Greenhalgh & Rosenblatt, 2010). In the case of job insecurity, psychological loss seems to be a key aspect; the anticipation of loss of one's job results in strong psychological and behavioral reactions (Greenhalgh & Rosenblatt, 2010). These reactions are often captured in general and work related well-being outcomes. As such, convincing evidence exists for the relationship between job insecurity and various well-being outcomes (DeWitte, 2005a; 2005b Greenhalgh & Rosenblatt, 2010; Hellgrent & Sverke, 2003; Vander Elst, Richter, Sverke, Näswall, De Cuyper, & De Witte, 2014).

Three groups of variables relevant for the study of job insecurity have been identified; macro level aspects (such as region, organization or industry); individual background variables which determine an individual's position in the organization (e.g., age, education, tenure); and personality traits which are known to influence subjective appraisals (DeWitte, 2005a). These three groups of variables have been used in different ways in the literature. Firstly, some studies consider them as antecedents. For example, Näswell and DeWitte (2003) showed that individuals in jobs characterized by manual labour, a contingent workforce and lower levels of education displayed elevated levels of job insecurity. Similarly, organizational factors (company performance and type of contract) but also individual factors (negative affectivity and locus of control) are predictors of job insecurity (Debus, König, & Kleinmann, 2014). Secondly, others consider the moderating or mediating impact of the three types of variables in the relationship between job insecurity and outcomes. For example, the relationship between job insecurity and health-related outcomes seems to depend on tenure, age and gender differences (Cheng & Chan, 2008). Vander Elst and colleagues (2014) showed that the relationship between job insecurity and emotional exhaustion was mediated by perceived control. Thirdly, other studies interact the three categories of variables with each other. Unemployment rate and country of origin moderated the relationship between individual (age, gender, education) and organizational determinants (type of contract) of job insecurity and job insecurity itself (Keim, Landis, Pierce, & Earnest, 2014). Finally, locus of control moderates the relationship between type of contract and job insecurity (Debus et al., 2014).

The relevance of macro factors, individual background variables, and personality traits, along with interactions of these variables, for job insecurity makes it clear that job insecurity exists on different levels. It can exist in relation to large-scale labour market evolution or in relation to a particular industry or organization, and it is influenced by individual factors. In

this thesis, job insecurity is included as an aspect that characterizes the individual experience of the labour market. If individuals perceive job insecurity, this necessitates a response from the individual, and will likely have consequences for individual well-being.

#### 3.1.3. Job characteristics

Already in the 1970's Hackman and Oldham (1975) proposed in their job characteristics model that well-being is related to specific aspects of the job. This is an idea that has received significant attention in the literature with other models such as the Job Demands Resources Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and the Job Demands Control Model (Karasek, 1979) being proposed and tested. Globally, this body of work has confirmed the central idea that the way individuals perceive their work environment has clear implications for both general and work-related well-being.

In the work that follows, the Job Demands Control Model is used to capture how individuals appraise their work environments. Essentially, Karasek proposed that individuals in jobs characterised by high demands and low control have the highest risk of developing job strain. Demands are psychological and physical aspects of workload that require a response from the individual (Karasek, 1979; Schaufeli & Bakker, 2004). On the other hand, job control (also known as job decision latitude) is the control people have over their tasks and behavior during the work day and includes aspects such as skill discretion and participation in decision making (Karasek, 1979; van der Doef & Maes, 1999).

Two hypotheses accompany the Job Demands Control Model, the strain hypothesis and the buffer hypothesis (van Der Doef & Maes, 1999). The strain hypothesis posits that negative outcomes result from the additive effects of high demands and low control. As such the ratio of demands and control is important for the individual experience. The buffer hypothesis suggests that control moderates the relationship between demands and negative outcomes, and is thus a protective factor. Overall, studies have found convincing support for

the strain hypothesis and some mixed evidence for the buffer hypothesis for a number of different well-being outcomes (Dalgard, Sørensen, Sandanger, Nygard, Svensson, & Reas, 2009; DeLange, Taris, Kompier, Houtman & Bongers, 2003; Haüsser, Mojzisch, Niesel, & Schulz-Hardt, 2010; van der Doef & Maes, 1999; Verhoeven, Maes, Kraaij, & Joekes, 2003).

Considering the large body of research on the Job Demands Control Model, the contribution of part of this thesis is not to test the strain and buffer hypotheses, but rather to, firstly, consider the contribution of job characteristics, in relation to job insecurity, to well-being; and, secondly, and importantly, the novelty lies in the addition of an individual resource, career adaptability, to this model, an aspect that will receive attention later in this introduction.

#### 3.1.4. Organizational justice

Organizational justice refers to perceptions of fairness in the organization that are made in relation to organizational and supervisor behavior (Cohen-Charash & Spector, 2001; Cropanzano, Byrne, Bobocel, & Rupp, 2001; Greenberg, 2001). Frequently three dimensions are considered; the fairness of outcomes (distributive); the fairness of procedures used to reach these outcomes (procedural), and; the interpersonal treatment during these procedures (interactional) (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Organizational justice is important for a number of individual and organizational outcomes such as performance, counterproductive work behavior, attitudes and emotions, evaluations of authority, trust, organizational commitment, and job and outcome satisfaction (Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Viswesvaran & Ones, 2002). More recently, the use of overall justice perceptions as a parsimonious construct that captures individual justice reactions and relates to outcomes has gained popularity (Ambrose, 2005; Ambrose & Schmink, 2009; Lind, 2001).

Specifically concerning health and well-being outcomes, a large body of evidence exists showing the relationship between different aspects and indicators of (in)justice and outcomes such as self-rated health (Elovainio, Kivimaki, & Vahtera, 2002), emotional exhaustion, cynicism, health complaints, and sickness (Kalimo, Taris, & Schaufeli, 2003; Taris, Kalimo, & Schaufeli, 2002), workplace stress (Judge & Colquitt, 2004), job satisfaction (Loi, Yang, & Diefendorff, 2009), and to stress-related illnesses and increased absenteeism (Kivimaki, Elovainio, Vahetra, & Ferrie, 2003). The content and outcomes of organizational justice perceptions are subjects that have received significant research attention. Less attentions has been given to the characteristics of the individual that shape organizational justice perceptions. Knowing the significance of organizational justice for numerous individual and organizational outcomes, this thesis posits and tests an individual characteristics, belief in a just world, as a driver of these organizational justice perceptions.

#### 3.1.5. Workplace incivility

Socially, work is also a context that may include unfavourable experiences such as discrimination, prejudice and incivility. Characteristics of the individual, such as age, gender, or ethnic origin may make them targets for these damaging interpersonal behaviors (Glick & Fiske, 1996; Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2007; Krings, Sczesny, & Kluge, 2011). In particular, immigrants, according to their ethnic origin may be at particular risk in the workplace, even though this is a subject that has received little attention in work psychology (Bingelli, Dietz, & Krings, 2013a). Overall, there has been a move away from overt and direct forms of anti-social behaviors, but more recent subtle forms of these behaviors have emerged (Akrami, Ekehammar, & Araya, 2000; Pettigrew & Meertens, 1995; Swim, Aikin, Hall, & Hunter, 1995). One of these more subtle forms of anti-social behavior, that is relevant for immigrants, is that of workplace incivility, which is regarded as pervasive in the workplace (Cortina, 2008).

Incivility is “low intensity deviant behavior with ambiguous intention to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others” (Andersson & Pearson, 1999, p. 457). Workplace incivility has come to be seen as a modern form of subtle discrimination (Cortina, Kabat-Farr, Leskinen, Huerta, & Magley, 2013) that results in negative outcomes for the individual and necessitates a coping response (Cortina & Magley, 2009). For example, daily workplace incivility predicts end-of-work negative affect (Zhou, Yan, Che, & Meier, 2014). Immigrants of differing national origins are perceived differently in terms of aspects such as warmth and competence, and when perceived status and competition are considered, immigrants who are perceived as strong competitors in the labour market may be particularly disliked (Bingelli, Krings, & Sczesny, 2013b; Bingelli, Krings, & Sczesny, 2014), placing them at risk for incivility. As such, this thesis will also touch on the special case of immigrants in Switzerland, and investigate their experiences of incivility and the extent to which this is construed as discrimination on the part of the immigrants.

#### 3.1.6. Summary

As a brief conclusion to the sections above, it is fairly evident that the professional context has implications for individual health and well-being. If individuals experience certain events, or perceive the work situation in particular ways, then there are consequences for individual well-being.

The study of how work and aspects related to work affect well-being could stop here. And indeed there is an extensive and convincing body of evidence that supports the importance of work for well-being, but that also highlights nuances in these relationships. However that decision would reflect a definition of individuals who are passive respondents, who all experience professional situations in the same manner. Mischel and Shoda wrote in 1995 that individuals are “goal-directed, constructing plans and self-generated changes, and

in part creating situations themselves" (p. 252) suggesting a need to consider how the person and situation may interact.

## 4. The person-situation interface

The Cognitive-Affective Systems Theory of Personality (CAPS, Mischel & Shoda, 1995) provides an integrated explanation of how the person and the situation interact. Although not developed as model or theory of well-being, it is relevant in this context. In this theory, personality is construed as a system that consists of cognitive-affective units that interact with each other in response to psychological features of a situation, leading to patterns of behavior.

In the CAPS theory, features of situations, events or contexts are encountered both externally and internally and thus "what constitutes a situation in part depends on the perceiver's constructs and subjective maps, that is, on the acquired meaning of situational features for that person" (Mischel & Shoda, 1995, p. 252). Individuals use cognitive-affective units to encode and process information, which in turn generate behavior. These cognitive-affective units include encodings, expectancies, belief, affect, goals, values, competencies, and self-regulatory plans (Mischel & Shoda, 1995). These units are not separate from each other, but are in constant relation through mediation and interaction processes. Individuals differ in terms of activation of the units and also in how these units are organized. As a result of encountering situations over time with different psychological features, individuals develop patterns of "if...then" behavior. Thus, the CAPS theory is able to account for both variability and stability in individual behavior. This theory is attractive in that it is comprehensive general framework that does not restrictively define "person" or "situation". In this sense, CAPS is a meta-theory that can be applied to different contexts by using the main principles of the theory (Mischel, 2009).

Thus far the information presented in the introduction could be taken as an illustration of a rudimentary version of the "if...then" principle; if certain professional situations occur, then there are consequences for well-being. For workplace incivility, if individuals appraise uncivil behavior, then they may feel discriminated against. To summarize, we have seen that professional transitions, as well as perceived job insecurity, job strain, and organizational justice influence well-being, both positively and negatively. According to the CAPS theory, these reactions are a result of a series of cognitive-affective mediated processes using the cognitive-affective units. This suggests that the relationship between the professional situation and well-being might be partially explained or better understood by including other variables that could represent these cognitive-affective units. These units are also important for how they shape perceptions of situations.

## 5. The importance of individual characteristics for well-being

In investigating the factors that cause or contribute to well-being, two broad approaches can be identified; the so called "bottom-up" approaches which study the effect of situational factors on well-being; and "top-down" approaches that consider the role of individual characteristics (Diener et al., 1999). These two methods are not in direct opposition to each other, but neither is complete in their explanation. Other theoretical propositions, such as process-participation models, coping models (Lent, 2004; Robbins & Kliewer, 2000) and stage models of well-being (Kim-Prieto et al., 2005) acknowledge that well-being is a result of individual and situational factors, which often interact with each other. This is in line with other classical models of well-being, such as the transactional model of stress (Lazarus & Folkman, 1984) which proposes that the individual makes active appraisals in response to the situation, which shape the stress reaction. More specific to the work context, the person-environment approach to occupational stress (French, Caplan, & Harrison, 1982) emphasized

the “fit” or “match” between the individual and their environment as an important key to minimizing the stress experience. Thus, a dual consideration of the “individual” and the “environment” as potential contributors to well-being is a constant theme found in the work that follows.

In the sections that follow, the individual perspective is overlaid onto each of the situational aspects presented previously and reviewed with two goals in mind; 1) the relation of the individual characteristic to each particular contextual factor, and 2) what this means for both professional and personal well-being outcomes.

## 6. The role of individual characteristics in the professional experience and implications for well-being

### 6.1. Career adapt-abilities

Career adaptability has its origins in career construction theory (Savickas, 1997; 2005; Super & Knasel, 1981) and was proposed as a way to integrate the four key aspects of the life-span, life-space theory of careers; individual differences, development, self, and context (Savickas & Porfeli, 2012; Super 1957, 1990). According to Savickas (2005), career adaptability captures the “how” of vocational behavior. With its four dimensions of concern, control, curiosity and confidence, career adaptability is positioned as an important psychosocial coping resource, a set of self-regulation capacities or skills, important for problem solving, career transitions, responding to unexpected events, constructing a career reality, and participating in the work role (Savickas 2005; Savickas et al., 2009; Savickas & Porfeli, 2012). Three important conclusions have emerged from the studies on career adaptability; 1) career adaptability is situated at the intersection of the individual and environment, and thus does become activated in response to situations such as unemployment and career transitions (Duarte et al., 2012; Ebberwein, Krieshok, Ulven, & Prosser, 2004;

Guan et al., 2013; McMahon, Watson, & Brimrose, 2012; Savickas, 1997), 2) career adaptability is positively associated to a number of important outcomes such as work engagement, job satisfaction, successful job transitions, job search strategies or job tenure, self-rated career performance, and negatively associated to career anxiety, and work-stress, (e.g., Brown, Bimrose, Barnes, & Hughes, 2012; Koen, Klehe, VanVianene, Zikic, & Nauta, 2010; Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012; Zacher, 2014a); and, 3) career adaptability is implicated in regulatory behavior in relation to situations and dispostions (Rossier et al., 2012; Rossier, 2014; 2015). Based on these three conclusions, in the sections that follow, the relevance of career adaptability to professional and general well-being, in light of different professional situations and individual characteristics, will be outlined.

#### 6.1.1. Career adapt-abilities and professional transitions

The previous discussion on professional transitions focused on the way that particular situations, such as employment or unemployment, as well as transitions between these states influence well-being. One explanation for the association between employment status and well-being is captured in the deprivation model (Jahoda, 1981) that posits that the benefits of work are the important aspect for well-being, and it is these benefits that are comprised during unemployment or transitions. However, as Creed and Evans (2002) noted, "the deprivation model largely ignores the notion that people have different reactions to the same situations, and that they evaluate conditions based on their unique expectations, values, previous experience and temperament" (p. 1047). The same criticism could apply to any other explanation that only relies on situational determinants of well-being.

Research provides us with examples of when individual characteristics are important determinants of well-being in different employment situations. For example, during unemployment, individual aspects such as coping resources, work role centrality, and cognitive appraisals are important for mental health (McKee-Ryan et al., 2005), core self-

evaluations are important for job search intensity and subsequent re-employment (Wanberg, Glomb, Song, & Sorenson, 2005), and proactive personality is important too, especially for mature job seekers (Zacher & Bock, 2014). Career changes and transitions are also influenced by individual career concerns (Hess, Jepsen, & Dries, 2011) and in general the individual is seen as playing an increasingly important role in career management (King, 2004), and construction (Savickas, 2005).

It is known that career adapt-abilities are important in career transitions and during unemployment, and related to a number of key outcomes. However, it is not known how career adaptability relates to general well-being over time in different professional situations, where we could expect adaptability to be more or less activated. The expectation that career adaptability may become differentially activated is in line with the CAPS theory. The psychological features of different professional situations and transitions are not likely to be the same which may cause different units, in this case self-regulatory competencies, to be more or less activated. More specifically, the "psychological competency demands" (Shoda, Mischel, & Wright, 1993, p. 1024) of situations are triggers for different individual responses. It is also in line with the career adaptability literature that defines career adaptability as a psychosocial variable that is sensitive to changes in the environment (Savickas, 1997). Thus one aspect of this thesis is to consider the role of career adaptability for well-being over time in different professional situations mentioned earlier; individuals who remain employed (*active no change group*), individuals who remain employed but experience a change (*active change group*); individuals who move from unemployment to employment (*unemployed-active group*); and individual who remain unemployed (*unemployed-unemployed group*).

Bearing in mind that the concurrent validity of career adapt-abilities is still a growing field, it seems important to test the relationship between career adapt-abilities and well-being

while considering the impact of personality traits. This is important for two reasons. Firstly, the association between personality traits and well-being is a known fact (Diener et al., 2006; McCrae & Costa, 1991). Secondly, career adapt-abilities as a total score, but also the dimensions of concern, control, curiosity, and confidence are correlated with the big five traits (Rossier et al., 2012; Teixeira, Bardagi, Lassance, Magalhães, & Duarte, 2012). Thus, including both personality traits and career adapt-abilities as predictors of well-being in the different professional situations, allows for a clearer picture to emerge concerning the role of career adaptability. Career adaptability may also be involved in the regulation of more specific perceived aspects of the workplace such as job insecurity and job strain.

#### 6.1.2. Career adapt-abilities as mediator of job insecurity and job strain

Increased job insecurity and job strain are two challenges in the current professional context necessitating a response from the individual. It seems that individual resources, such as career adaptability, that help an individual to face insecure, fast-changing and demanding environments and that allow them to quickly adapt may be particular important for maintaining both personal and professional well-being (Hall & Chandler, 2005; Savickas et al., 2009). However, it seems necessary to adopt a more nuanced perspective concerning adaptability.

Yes, as presented above, we can expect career adaptability to be important for well-being and to be activated in situations where it is needed such as job search, unemployment and career transitions. Nevertheless, might it be, as is seen in the case of other self-regulation resources, that career adaptability becomes depleted with use or damaged by repeated challenging experiences? Self-regulation literature tells us that aspects of self-regulation, such as self-control, rely on a limited amount of energy or strength that becomes depleted (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister, Gailliot, DeWall, & Oaten, 2006). Furthermore, building on appraisal theory (Lazarus & Folkman, 1984) and

conservation of resources theory (Hobfoll, 1989; 2001) when situations such as job insecurity and job strain are appraised as threatening, they trigger resource loss (e.g. depletion of career adaptability), which can have further detrimental consequences such as compromised well-being. Indeed, both job insecurity and job strain are frequently appraised as stressors (DeWitte, 2005a, Debus et al., 2014; Häusser et al., 2010) and as individuals exercise their career adaptability resources in a constant process of readjustment to the professional context, we could expect that they too become depleted. Vander Elst and colleagues (2014) illustrated this principle and showed that job insecurity contributed to a reduction in the personal resource of perceived control over time. They argued that the appraisal of threat (job insecurity) led to an appraisal of the resource (perceived control) as insufficient to manage the threat.

Finally, CAPS theory suggests that psychological features of a situation may inhibit or deactivate certain mediating units (Mischel & Shoda, 1995), providing additional theoretical support for why some situations, but not others, may limit career adaptability resources. It seems possible that it is the psychological features of a situation are the targets of appraisals, and if these psychological features are appraised in a threatening light, then career adapt-ability is more likely to become depleted.

#### 6.1.3. Career adapt-abilities as a mediator of orientations to happiness

Rossier and colleagues (2012) found that career adapt-abilities mediated the relationship between personality traits and work engagement. They concluded that, "career adapt-ability mediates and contributes to regulating the relationship between intrinsic dispositions and work-related outcomes" (p. 741). Mediation models provide a way to test regulation hypotheses that consider how dispositional traits are expressed in a way that accounts for social and environmental expectations (Rossier, 2014; 2015). As an extension of this theoretical proposition, career adaptability as a mediator of the relationship between

orientations to happiness and work stress will be tested. This will add to existing theoretical knowledge on career adapt-abilities by showing its association to a positive psychology concept, and reinforcing its applicability to the professional environment by illustrating its negative effect on work stress.

6.2. Belief in a just world and organizational justice perceptions

Shifting focus slightly, the justice literature has shown that organizational justice and belief in a just world are important for well-being (Dalbert, 2007; Greenberg & Colquitt, 2013). However, two aspects require further investigation. First, little is known about the individual characteristics that drive perceptions of organizational justice, even though justice perceptions are closely linked to the self (Cropanzano et al., 2001; Greenberg, 2001; Skitka, 2003). Second, although belief in a just world seems to be an important resource for general and professional well-being, an explanation of the mechanism behind this relationship is still missing (Bobocel & Hafer, 2007; Dalbert, 2007). Combining theory on organizational justice and belief in a just world, and by fitting these two concepts together, answers to the two questions above can be found, which is another aspect of this thesis.

Essentially, belief in a just world is a pervasive belief that individuals hold about the justness of the world; outcomes, rewards and punishments should fit what individuals deserve (Lerner 1987; 1980). Early research considered aspects such as blaming innocent victims for their fate (De Judicibus & McCabe, 2001) and how individuals maintain their belief in a just world when it is challenged (Furnham, 2003; Hafer & Bègue, 2005). An alternative research stream focused on belief in a just world as a personal resource with adaptive functions that are important for health and well-being outcomes (Dalbert, 2001; 2007; Furnham, 2003). Through this research, a distinction was made between two spheres of belief in a just world; personal belief in a just world which refers to the events that happen directly in the individual's immediate world, and general belief in a just world that has larger boundaries

including events that happen in the world in general (Dalbert, 1999; Lipkus, Dalbert, & Siegler, 1996).

The addition of individual characteristics to the study of organizational justice is not new. Cohen-Charash and Spector (2001), in their meta-analysis, mentioned how individual characteristics are frequently included as moderators of the justice – outcome relationship, or as control variables. Although they mentioned that characteristics of the perceiver may be an antecedent of organizational justice perceptions, not much research has followed on this subject. However, when organizational justice is understood as a category of motivated behavior (Cropanzano et al., 2001) and belief in a just world as a "justice motive" (Lerner, 1977) which reflects in an individual's desire to see the world in just terms, it seems a natural step to posit belief in a just world as a driver of organizational justice perceptions. Another explanation for why belief in a just world may shape perceptions of organizational justice can be found within the CAPS theory. Expectancies and beliefs are included as units that individuals use when perceiving situations. Beliefs guide individuals in focusing on what is salient in situations and assigning meaning to different cues in situations (Lazarus & Folkman, 1984; Mischel & Shoda, 1995). Specifically, just world believers look for cues that support their belief in the justness of the world, and reinterpret other contradictory cues, so that perceptions of justice are maintained. Thus, individual characteristics are intertwined with how individuals experience events in the workplace. Thus, as events occur in the workplace, differing levels of belief in a just world lead individuals to select and focus on different aspects of the situation, leading to the formation of different organizational justice perceptions.

6.3. Summary

Broadly speaking, three ways that individuals and situations can relate to each other are included here. First, the individual characteristics can shape which features of the situation are focused on, which in turn lead to well-being (pathway a). Second, the professional situation can activate certain individual characteristics, which in turn relate to well-being (pathway b). Third, the effect of individual characteristics on well-being may be transmitted through a different individual characteristic variable (pathway c).

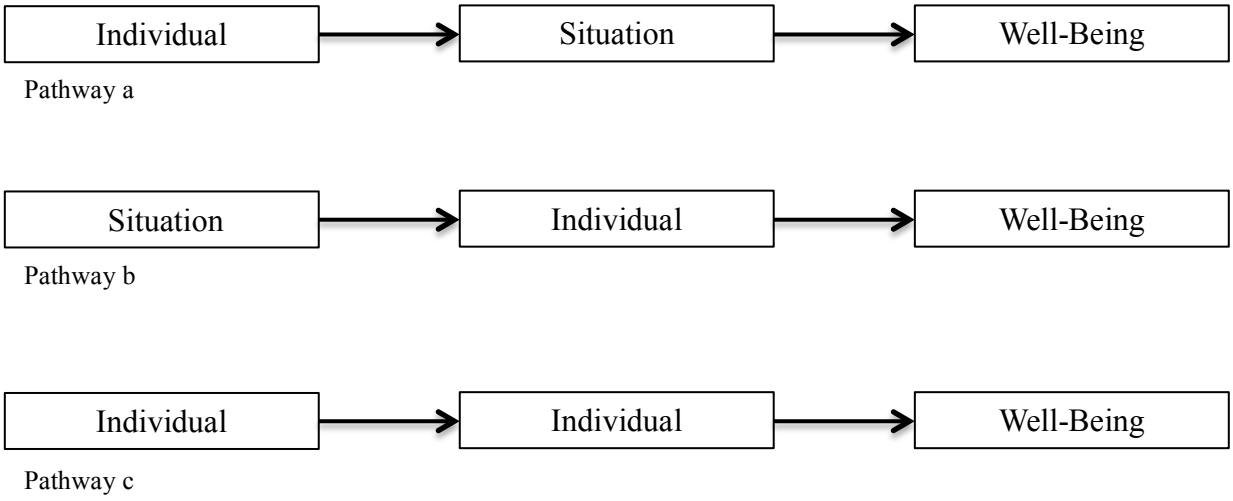


Figure 1. Illustrative figure of three possible pathways defining the person-situation interface.

This figure combines the main features of this thesis and illustrates the different ways that the person, situation, and well-being may relate to each other. These possibilities are in no way intended to be exhaustive, bur rather provide a foundation to include the different aspects in this thesis. Clearly, these processes may also be reversed in some circumstances with poor or strong well-being influencing an individual's capacity to mobilize resources and altering perceptions of the professional situation. To adequately measure this possibility, more than two measurement points would be needed. The distinction between well-being as an outcome and well-being as a predictor is discussed in the section that follows, after which

a few words on the use of the career adapt-abilities scale, a central feature of this thesis, are given.

7. Well-being as an outcome and not as a predictor

At this point, one may ask why well-being is seen as an outcome and not as a predictor? It is possible that an individual's well-being may be a predictor of certain professional experiences, may alter the perception of professional experiences, and may influence the individual's resources. For example, Luhmann, Lucas, Eid, and Diener (2013) found that life satisfaction predicts certain events in work and family life. Additionally, being dissatisfied in one's job leads individuals to look for a different job (Griffeth, Hom & Gaertner, 2000). Individuals under continued stress may react more severely to events (Stawski et al., 2008) and compromised well-being leads individuals to appraise resources as inadequate (Vander Elst et al., 2014).

There is also a convincing body of evidence where well-being is seen as the result of individual characteristics or certain experiences (e.g. Diener, Lucas, & Scollon, 2006; Diener, Suh, Lucas, & Smith, 1999; Luhmann, Hofmann, Eid, & Lucas, 2012). Thus a choice between using well-being as an outcome or as a predictor had to be made.

In the case of this research, this choice was informed by several considerations. Firstly, the work in this thesis is situated within the larger context of a project that aimed to explore the effects of individual characteristics, and professional conditions, on adult's career transitions and successful development. One way to measure this successful development is to investigate well-being outcomes. Thus, the work in this thesis contributes to the aims of the broader project. Secondly, considering the timeline of the thesis and the larger project, only two waves of data (with a one-year time lag) are included. Statistically, it was thus possible to test well-being as an outcome and to control for prior levels of well-being when

time 2 data was used. If well-being had been treated as a predictor, ideally three waves of data would have been needed. This would have allowed the causal effects to be more clearly disentangled by controlling for baseline well-being as well as an individual's prior status with relation to certain professional and individual variables of interest. In studies with well-being as a predictor, multiple data points are needed to distinguish temporary and stable mechanisms (e.g. Luhmann, Lucas, Eid, & Diener, 2013). Thirdly, this thesis is informed by the industrial-organizational psychology research tradition that frequently treats well-being as an outcome as seen in classic models such as the transactional model of stress (Lazarus & Folkman, 1984) and the person-environment approach to occupational stress (French et al., 1982). Finally, this choice is reflected in the main aim of this thesis.

Importantly, the main aim of this research is to explore the joint contribution of individual characteristics and professional experiences for well-being. This requires that well-being be treated as the outcome. Additionally, the foundation of this research is that individual characteristics, professional situations, and the interaction between these two, influence well-being, again pointing to well-being as an outcome and not predictor.

8. Validation of the career adapt-abilities scale

Although not a new concept, the scale to measure career adapt-abilities developed by Savickas and Porfeli (2012) is relatively new. To date, the scale has been validated and used in many different countries. An outcome of this thesis is a contribution to this growing international body of work through the validation of the German version of this scale and the development and validation of a French-language version of this scale. Through having more language versions of the scale available, the utility of the scale is improved permitting its use in many research and applied contexts. Validation studies that occur in different countries also extend the possibility for cross-cultural research (Matsumoto & Yoo, 2006; van de

Vijver & Tanzer, 2004). It is not possible to compare means or correlations across cultural groups without first testing for measurement equivalence (Spini, 2003).

9. Structure of the thesis

In this section, I will briefly present the structure of the thesis, and illustrate how each chapter addresses the objectives presented above.

Chapter 2, "Validation of an adapted French form of the Career Adapt-Abilities Scale in four Francophone countries" is the development and validation study on the French-language version of the career adapt-abilities scale using data from four French speaking countries. This chapter is a reproduction of the following article:

> Johnston, C. S., Broonen, J. P., Stauffer, S. D., Hamtiaux, A., Pouyaud, J., Zecca, G., ... & Rossier, J. (2013). Validation of an adapted French form of the Career Adapt-Abilities Scale in four Francophone countries. *Journal of Vocational Behavior*, *83*, 1-10. doi:10.1016/j.jvb.2013.02.002

Chapter 3, "Validation of the German version of the Career Adapt-Abilities Scale and its relations to orientations to happiness and work stress" covers two aspects. The first is a validation study of the German language version of the career adapt-abilities scale. The second aspect shows the relationships between orientations to happiness and career adaptability with work stress, and proposes that career adaptability mediates the relationship to orientations to happiness and work stress. Chapter 3 is a reproduction of the following article:

> Johnston, C. S., Luciano, E. C., Maggiori, C., Ruch, W., & Rossier, J. (2013). Validation of the German version of the Career Adapt-Abilities Scale and its relation to orientations to happiness and work stress. *Journal of Vocational Behavior*, *83*, 295-304. doi:10.1016/j.jvb.2013.06.002

Chapter 4, “The role of career adaptability and work conditions on general and professional well-being”, makes several contributions to the thesis by; 1) including two specific aspects of work, job insecurity and job strain; 2) including both personal and general well-being outcomes; 3) testing the effects of job insecurity and job strain, and unemployment, on career adaptability; and 4) proposing a mediating model between the work aspects and well-being outcomes. This chapter is a reproduction of the following article:

> Maggiori, C., Johnston, C. S., Krings, F., Massoudi, K., & Rossier, J. (2013). The role of career adaptability and work conditions on general and professional well-being. *Journal of Vocational Behavior*, *83*, 437-449. doi:10.1016/j.jvb.2013.07.001

Chapter 5, entitled, “Professional trajectories, individual characteristics and staying satisfied and healthy” considers the contribution of personality traits and career adaptability to personal well-being in different professional situations. Importantly, this chapter adds a new dimension by adopting a longitudinal approach. This chapter is a reproduction of the following article:

> Johnston, C. S., Maggiori, C., & Rossier, J. (in press). Professional trajectories, individual characteristics and staying satisfied and healthy. *Journal of Career Development.*

Chapter 6, “Believing in a just world helps maintain well-being at work by coloring organizational justice perceptions”, another longitudinal study, considers the role of belief in a just world for well-being at work by showing how it shapes perceptions of organizational justice which in turn influence professional well-being. This chapter is a reproduction of the following article:

> Johnston, C. S., Krings, F., Fiori, M., & Maggiori, C. (2014, under revision) Believing in a just world helps maintain well-being at work by coloring organizational justice perceptions. *Journal of Organizational Behavior.*

Chapter 7, the final content chapter, “Selective incivilities: Immigrant groups experience subtle workplace discrimination at different rates” considers the unique experience of immigrants in the workplace because of their exposure to a particular aspect of work; workplace incivility. This chapter is a reproduction of the following article:

> Krings, F., Johnston, C. S., Binggeli, S., & Maggiori, C. (2014). Selective incivility: Immigrant groups experience subtle workplace discrimination at different rates. *Cultural Diversity & Ethnic Minority Psychology, 20,* 491-498. doi:10.1037/a0035436

Chapter 8, the general discussion, summarizes and integrates the results, makes suggestions for future research and offers some concluding remarks.

## II. Validation of an adapted French form of the Career Adapt-Abilities Scale in four Francophone countries

Reproduction of the following article:

Johnston, C. S., Broonen, J. P., Stauffer, S. D., Hamtiaux, A., Pouyaud, J., Zecca, G., ... & Rossier, J. (2013). Validation of an adapted French form of the Career Adapt-Abilities Scale in four Francophone countries. *Journal of Vocational Behavior*, *83*, 1-10. doi:10.1016/j.jvb.2013.02.002

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Abstract

This study presents the validation of a French version of the Career Adapt-Abilities Scale in four Francophone countries. The aim was to re-analyze the item selection and then compare this newly developed French-language form with the international form 2.0. Exploratory factor analysis was used as a tool for item selection, and confirmatory factor analysis (CFA) verified the structure of the CAAS French-language form. Measurement equivalence across the four countries was tested using multi-group CFA. Adults and adolescents ($N$=1,707) participated from Switzerland, Belgium, Luxembourg, and France. Items chosen for the final version of the CAAS French-language form are different to those in the CAAS international form 2.0 and provide an improvement in terms of reliability. The factor structure is replicable across country, age, and gender. Strong evidence for metric invariance and partial evidence for scalar invariance of the CAAS French-language form across countries is given. The CAAS French-language and CAAS international form 2.0 can be used in a combined form of 31 items. The CAAS French-language form will certainly be interesting for practitioners using interventions based on the life design paradigm or aiming at increasing career adaptability.

Key words: Career adapt-abilities, adaptability, test adaptation, measurement invariance

1. Introduction

Career adaptability is a psychosocial construct comprised of the resources an individual uses to respond to tasks and challenges of vocational development (Savickas, 1997; Savickas & Porfeli, 2012). The four dimensions of adaptability -- concern, control, curiosity and confidence -- combine to represent a total adaptability score. Twenty-five items were created for each adaptability dimension, which were reduced to 11 items per dimension following pilot studies in the US. These 44 items became the CAAS research form (Savickas & Porfeli, 2012). The outcome of a subsequent large international data collection project was the CAAS international form 2.0 consisting of 6 items per scale. The French translation of the international form 2.0 of the CareerAadapt-Abilities Scale (CAAS) has been used in French-speaking Switzerland (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012b) and France (Pouyaud, Vignoli, Dosnon, & Lallemand, 2012). However, a comparison between the international form and this French translation suggested poor replicability on the translation and the need for further analysis (Savickas & Porfeli, 2012).

The international research conducted in 13 countries indicated that the underlying structure of career adapt-abilities was stable across countries. Metric invariance was usually reached across countries, signifying that item perception and interpretation is occurring similarly across different countries (Savickas & Porfeli, 2012). However, the CAAS international form 2.0 did not display scalar invariance. The authors offered the psychosocial nature of adapt-abilities as an explanation; adapt-abilities are not trait-like or context-independent. As such, for different countries, item selection can be adjusted to ensure that the CAAS reflects cultural uniqueness while still ensuring that individuals across countries interpret the CAAS in a conceptually similar manner (Savickas & Porfeli, 2012). Further, the same French translation of the international form 2.0 of the CAAS performed better in French-speaking Switzerland (Rossier et al., 2012b) than in France (Pouyaud et al., 2012)

suggesting that despite utilizing the same language version, influencing contextual factors may still be present. In this paper, we present the results of a study to develop the CAAS French-language form through a reanalysis of the item selection.

In the original international study, the items selected for the final inventory functioned best in all 13 countries. For any particular country, a slightly different set functioned slightly better. In addition to effectiveness, the international set of items were selected to maximize efficiency. Initially, it was determined that the four international scales could each include seven effective items. However, only the six best items in each set composed the final scales. While the seventh item in each set functioned effectively, they were not efficient in adding psychometric gain. Because the seventh item provided only minimal gain, compared to the substantial gain provided by each of the first six items in a set, they were not included in the final inventory. In short six items worked as well as seven items. For each country, an eighth and even ninth item may have offered substantial psychometric gains, but these items were not the same across countries. Each country could produce a slightly different version of the CAAS that functioned a little better than the single international version. Yet, the value of numerous unique inventories that functioned slightly better for each country did not offset the value of a common international set. However, given that the French language was used in four different countries, it makes sense to consider whether a French-language version of the CAAS might supplement the international version. The present study examined whether an improved version could be constructed for Francophone countries. The basic question was not whether a slightly more effective inventory could be constructed for each of the four Francophone countries. We already know that this is possible. The question under investigation herein is whether it is possible to construct a French-language version that generalizes across four Francophone countries.

### 1.1. Career adaptability

Savickas (1997) conceptualized career adaptability as an extension of Super's (1957) life-span, life-space theory and later as part of Savickas's (2005) own integrated career construction theory. Career construction requires four tasks, to 1) become *concerned* with one's future role as worker, 2) increase personal *control* over the professional activities one does, 3) display *curiosity* before making educational and vocational choices, and 4) build the necessary *confidence* to make and implement career choices (Savickas, 2002, 2005; Savickas et al., 2009). These dimensions of career adaptability represent general adaptive resources and strategies required at different career transitions, even those beginning in adolescence, as well as in daily general life (Savickas, 2005).

As a set of personal capacities and strengths, career adaptability has an important impact on various personal and work-related outcomes, such as quality of life (Soresi, Nota, & Ferrari, 2012), self-esteem (Van Vianen, Klehe, Koen, & Dries, 2012), and work engagement (Rossier et al., 2012b). Adapt-abilities assist individuals in adjusting their behaviors to specific situations, are evident at the intersection of the individual and environment, and thus are closely tied to specific contexts and roles and function as a type of self-regulation (Ebberwein, Krieshok, Ulven, & Prosser, 2004; McMahon, Watson, & Bimrose, 2012; Savickas & Porfeli, 2012). Relevant factors include the availability or lack of financial resources, the family situation, and the presence of support networks (Ebberwein et al., 2004). Further, there are indications that unemployed individuals respond to job loss with increased levels of adaptability (Maggiori, Johnston, & Massoudi, 2012).

### 1.2. Importance of the context for the development and activation of career adapt-abilities

Adapt-abilities represent a synthesis of the four key aspects of the life-span, life-space theory of careers: individual differences, development, self, and context (Savickas, 1997; Savickas & Porfeli, 2012). First individual differences in adaptivity, or the personality trait of

flexibility and willingness to change, shape how an individual responds to his or her environment (Savickas & Porfeli, 2012). Second, anticipated development tasks or career interventions may differ based on the context and timing (e.g. the age at which students must make career decisions) and require the individual to be an actor in his or her context (Guichard, 2003). Third, the individual develops a particular self-concept within the framework of a set of unique circumstances, and this self-concept affects vocational behavior (Savickas, 1997). Fourth, the interplay of work and life roles, such as those adopted in the family, is partly a function of context in terms of social norms, family make-up, and availability of resources (Savickas, 1997). Aspects unique to a particular context are strongly related to the formation and activation of an individual's career adaptability. Broader social structures or policies are further influencing forces: "Countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies" (Savickas & Porfeli, 2012, p. 663). Practical ways in which work, education and employment are distributed, as well as commonly shared beliefs about "career" and "work" (Guichard, 2009) specific to a particular context, may contribute to country differences in adaptability scores.

Life-cycle transitions, representing adaptive challenges, are situations in which contextual factors may be more pertinent (Savickas, 1997). Adolescents preparing for and negotiating the transition from school to work, where career discourses are forefront, are in the process of constructing their career-related identities (Guichard, Pouyaud, de Calan, & Dumora, 2012). Educational systems with associated variations in timing, flexibility, assistance provided, and opportunities for career interventions (Guichard, 2003; Savickas, 1997) may contribute to different country mean scores on adapt-abilities. School system organization is determined locally, whereas factors associated with work organization that influence career issues are

more similar across industrialized countries (Guichard, 2003). As such, the differences between adolescents across countries may be more evident than the differences between adults.

### 1.3. The necessity for equivalence in cross-cultural research

Establishing valid cross-cultural differences (or the lack thereof) is mainly interesting as a starting point for further exploration into the factors that can explain cross-cultural similarities and differences (Matsumoto & Yoo, 2006; van de Vijver & Tanzer, 2004). Measurement equivalence and the lack of bias are prerequisites for cross-country score comparisons (van de Vijver & Tanzer, 2004). Establishing measurement equivalence for the CAAS allows for cross-country comparisons to be made, creating the foundation for subsequent studies to explore these differences.

### 1.4. Aims of this research

Following the work on the CAAS international form 2.0 (Savickas & Porfeli, 2012), this was the first study to reanalyze the item selection of the CAAS. The aims of this study were: 1) to analyze the psychometric properties of the CAAS in a Francophone sample of adolescents and adults across Switzerland, Belgium, Luxembourg and France; and 2) to compare the international form 2.0 with a specific French-language form resulting from a reanalysis of the item selection. Following this, measurement equivalence of the CAAS French-language form across the different countries was tested.

## 2. Method

### 2.1. Participants

Data were collected in the French-speaking regions of Switzerland, Belgium, and Luxembourg and in France, resulting in a combined sample of 1,707 participants (57% female, 40% male, missing values are due to non-response) with an age range of 13-79 ($M$ =

24.22, *SD* = 12.33). The Swiss sample (*n* = 468) consisted of 54% female and 46% male participants with an age range of 14 to 79 (*M* = 35.92, *SD* = 13.37). Participants in the Belgian sample (*n* = 395) consisted of 54% females and 35% males with ages ranging from 16-21 (*M* = 17.49, *SD* = .87). The Luxembourgish sample is smaller with only 181 participants ranging in age from 16 to 75 (*M* = 33.61, *SD* = 12.90) with 68% female and 32% male participants. Finally, the French sample (*n* = 663) was 42% male and 58% female with ages ranging from 13 to 21 (*M* = 16.59, *SD* = .88).

2.2. Measures

The French translation of the CAAS research form contains a larger pool of items consisting of 11 items per scale for concern, control, curiosity, and confidence (Savikas & Porfeli, 2012). Participants responded to each item on a scale from 1 (*not a strength*) to 5 (*greatest strength).* As the items for the international form 2.0 were drawn from the research form item pool, it was possible to create total scores per dimension for each participant that correspond to those of the CAAS international form 2.0. Reliabilities of the research form (44 items) are .93 for adapt-abilities, .81 for concern, .81 for control, .81 for curiosity and .83 for confidence.

2.3. Translations

The CAAS research form was translated into French by Francophone career counseling experts in France, Belgium, and Switzerland, and then back-translated into English. Agreement on the final translation was reached through discussion between the original authors of the English version and the authors of the French version.

2.4. Procedure

In France, data were collected by career guidance counselors during school hours; students were assured of confidentiality and were debriefed after completing the paper-pencil questionnaires. All students were in their second-to-last year of high school, a grade in which

they were not forced to make career choices. They were recruited from public high schools both in the general and technological streams in French territories, both in urban and rural areas. In Liège, Belgium, data were collected in small groups ($n$ = 15-25) of voluntary participants in selected secondary schools, and targeted students in their last year of general or technological streams. The questionnaires were administered (paper-pencil) in the classroom after an information-discussion session on career choice and were immediately returned to the counselor who organized the session. Data was collected in two primary ways in Switzerland. First, convenience sampling took place at the Geneva Cité des Métiers where researchers invited participants in this event to complete the CAAS French research form and another instrument and return their packet immediately. Participants received a movie ticket for each instrument as an incentive. Second, psychology bachelor students at the University of Lausanne participating in a 3-credit statistical laboratory concerning multifactorial methods completed the questionnaire themselves and then had to recruit six other working people (3 males and 3 females) to complete the questionnaire. These recruited participants sent the completed questionnaires back to the researchers directly in a pre-addressed envelope. Participants from Luxembourg were recruited through an advertisement at the University of Luxembourg as well as classroom presentations requesting volunteers to participate in a study on adaptive capacities. Volunteers had the option to request individual feedback and had the chance to win a 100€ gift card from Amazon.

Participants responded to the CAAS French research form to yield data on 44 items measuring adapt-abilities. Using this pool of data, exploratory factor analysis (EFA) was conducted to select 24 items (6 per scale to match the international form 2.0) to develop the CAAS French-language form. EFA was used as a tool for item reduction (Gorsuch, 1997) and various approaches were used to select items. First, the six items with the highest factor loadings per scale were selected (Gorsuch, 1997). Second, items were removed one by one

that loaded onto more than one factor, and simultaneously items that failed to load onto any factor were removed (Raubenheimer, 2004). This process was continued until 6 items per scale remained. Third, items were removed based on their potential to improve reliability (Raubenheimer, 2004). Finally, a fourth approach involved selecting and combining items that performed well based on the above criteria. The result of this selection process was five possible options, each with six items per scale. These five options were then compared in terms of reliability, factor loading strength and pattern, as well as congruence coefficients. Based on these comparisons, one option, labeled the CAAS French-language form, was retained for further analysis and subjected to confirmatory factor analysis (CFA) to test the structural validity of the instrument. Item parceling was employed as a technique to increase stability of parameter estimates, improve the variable-to-sample-size ratio, increase the proportion of common variance relative to unique variance, and obtain a more continuous and normal distribution (Bandalos, 2002; Coffman & MacCallum, 2005; Little, Cunningham, Shahar, & Widaman, 2002). Items in both the CAAS French-language form and CAAS international form 2.0 are presented in Appendix 1. Finally, a multi-group CFA allowed for the testing of measurement equivalence across the four countries.

## 3. Results

### 3.1. Descriptive statistics

Reliabilities and normality data for the CAAS French- language form and CAAS international form 2.0 are given in Table 1. Overall, alpha values were slightly higher for the CAAS French- language form (α range from .74 to .90) than the CAAS international form 2.0 (α range from .68 to .89). For the CAAS French-language form, skewness values ranged from -.15 to .18 and kurtosis from -.26 to .07. Skewness values ranged from -.35 to .13 and kurtosis from -.09 to .33 for the CAAS international form 2.0. Thus the distributions were

similar for both versions and comparable to that found in Savickas and Porfeli (2012). Turning to gender differences, a series of ANOVAs were conducted to explore possible differences (Table 2). Concerning the French-language form, men had significantly higher scores on control, confidence, and adapt-abilities. Concerning the CAAS international form 2.0 in this data (not tabled), men had higher scores on control ($F$[1,1658] = 33.09, $p < .001$, $\eta^2 = .02$), curiosity ($F$]1,1658] = 7.02, $p < .05$, $\eta^2 < .01$), confidence ($F$[1,1658] = 14.64, $p < .001$, $\eta^2 < .01$), and total adapt-abilities ($F$[1,1658] = 11.82, $p < .001$, $\eta^2 < .01$). Accordingly, the gender differences on the two versions were quite similar, and of negligible to small amplitude.

Table 1. Descriptives of the CAAS French-Language Form and the CAAS International Form 2.0

| | *CAAS French-language form* | | | | | *CAAS international form 2.0* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $\alpha$ | *Mean* | *SD* | *K* | *S* | $\alpha$ | *Mean* | *SD* | *K* | *S* |
| Concern | .81 | 21.36 | 4.05 | -.135 | -.154 | .79 | 21.05 | 3.98 | .071 | -.149 |
| Control | .74 | 21.33 | 3.93 | -.113 | -.161 | .68 | 22.60 | 3.63 | .027 | -.352 |
| Curiosity | .77 | 20.70 | 3.87 | -.072 | .065 | .76 | 20.67 | 3.87 | -.019 | .068 |
| Confidence | .83 | 22.15 | 3.87 | -.261 | -.004 | .81 | 22.23 | 3.72 | -.087 | -.028 |
| Adaptability | .90 | 85.54 | 12.54 | .077 | .180 | .89 | 86.56 | 12.05 | .325 | .128 |

$N$ = 1,707

Considering age and the CAAS French-language form, age correlated significantly and positively with control ($r = .19$, $p < .01$), curiosity ($r = .22$, $p < .01$), confidence ($r = .11$, $p < .01$), and total adapt-abilities ($r = .17$, $p < .01$). However, all these correlations are of a small size. To explore differences in scores between adolescents (age 16-18, $n = 906$) and adults

(age 19-65, $n = 670$), a series of ANOVAs were conducted with these groups representing the median split of the sample (Table 2). Adults showed higher scores than adolescents on all dimensions of adapt-abilities. For the CAAS international form 2.0, small positive and significant correlations were found between age and concern ($r = .06$, $p < .05$), control ($r = .14$, $p < .01$), curiosity ($r = .22$, $p < .01$), confidence ($r = .15$, $p < .01$), and total adapt-abilities ($r = .18$, $p < .01$). For the international form 2.0 (not tabled), adults scored higher than adolescents on all the adapt-abilities dimensions: concern ($F[1,1574] = 31.98$, $p < .001$, $\eta^2 = .02$), control ($F[1,1574] = 34.62$, $p < .001$, $\eta^2 = .02$), curiosity ($F[1,1574] = 124.37$, $p < .001$, $\eta^2 = .07$), confidence (Welch's $F[1,1574] = 59.54$, $p < .001$, $\eta^2 = .04$), and adapt-abilities ($F[1,1574] = 93.49$, $p < .001$, $\eta^2 = .06$).

Table 2. ANOVA Results for the CAAS French-Language Form– Age and Gender Comparisons

| | *Males* | | *Females* | | | | | | *Adolescents* | | *Adults* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Dimension* | *Mean* | *SD* | *Mean* | *SD* | *F* | *df* | *p* | $\eta^2$ | *Mean* | *SD* | *Mean* | *SD* | *F* | *df* | *p* | $\eta^2$ |
| Concern | 21.19 | 4.20 | 21.47 | 3.95 | 2.10* | 1,1421 | n.s | .001 | 20.95 | 4.04 | 21.98 | 4.02 | 25.51 | 1,1574 | <.001 | .016 |
| Control | 22.02 | 3.80 | 20.83 | 3.94 | 38.60 | 1,1658 | <.001 | .022 | 20.63 | 3.84 | 22.33 | 3.81 | 76.31 | 1,1574 | <.001 | .046 |
| Curiosity | 20.88 | 3.90 | 20.57 | 3.85 | 2.51 | 1,1658 | n.s | .001 | 19.87 | 3.62 | 21.97 | 3.79 | 125.15 | 1,1574 | <.001 | .073 |
| Confidence | 22.82 | 3.85 | 21.64 | 3.81 | 37.74 | 1,1658 | <.001 | .022 | 21.68 | 3.90 | 22.79 | 3.71 | 32.90 | 1,1574 | <.001 | .020 |
| Adapt-abilities | 86.91 | 12.69 | 84.53 | 12.36 | 14.65 | 1.1640 | <.001 | .009 | 83.12 | 11.70 | 89.08 | 12.69 | 93.03 | 1,1574 | <.001 | .055 |

*Note.* *Assumption of homogeneity of variance was violated, therefore the Welch statistic is reported

3.2. Principle component analysis

Table 3 shows the factor loadings for both the CAAS French-language form and CAAS international form 2.0. After equamax rotation, four factors were specified to correspond with the four sub-scales of concern, control, curiosity, and confidence. For the CAAS French-language form these four factors explained 51% of the total variance. The first five eigenvalues were 7.56, 1.82, 1.58, 1.28, and .98. The first five eigenvalues for the CAAS international form 2.0 were 7.07, 1.79, 1.36, 1.19, and 1.00, with the first four factors explaining 47% of the total variance. Factor loadings were slightly higher, the secondary loadings slightly lower, and the four-factor solution explained slightly more variance for the CAAS French-language form compared to the CAAS international form 2.0. For both the CAAS French-language form and CAAS international form 2.0 the correlations between sub-scales and the components scores were inspected. One-to-one associations were observed with correlations ranging from .85 to .92 for the CAAS French-language form and from .87 to .93 for the CAAS international form 2.0.

The loading matrix of the CAAS French-language form was compared across the four countries, between men and women, and between adolescents (age 16-18) and adults (age 19-65) by calculating total congruence coefficients (CCs). CCs higher than .90 indicated an overall high structural equivalence and those below .80 indicated an overall poor structural equivalence (Rossier, Hansenne, Baudin, & Morizot, 2012a). The results indicated high structural equivalence of the CAAS French-language form with country comparisons ranging from .92 to .97 (*Mdn* =.94) and age and gender comparisons of CC = .97. The results for the CAAS international form 2.0 were similar, although slightly lower, with cross-country comparisons resulting in CCs ranging from .87 to .93 (*Mdn* =.90). The CCs for age and gender comparisons were .93 and .96, respectively.

Table 3. Factor Structure for the CAAS French-Language Form and CAAS International Form 2.0

| *CAAS French-language form* | | | | | *CAAS international form 2.0* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CAAS | COF | CON | CUR | COL | CAAS | COF | CON | CUR | COL |
| COF11 | **0.72** | 0.08 | 0.03 | 0.21 | COF08 | **0.74** | 0.18 | 0.21 | 0.14 |
| COF08 | **0.70** | 0.23 | 0.22 | 0.12 | COF07 | **0.73** | 0.22 | 0.22 | 0.09 |
| COF09 | **0.68** | 0.09 | 0.13 | 0.35 | COF09 | **0.64** | 0.09 | 0.15 | 0.37 |
| COF07 | **0.67** | 0.26 | 0.22 | 0.10 | COF10 | **0.58** | 0.10 | 0.20 | 0.32 |
| COF10 | **0.66** | 0.08 | 0.20 | 0.25 | COF01 | **0.57** | 0.20 | 0.10 | 0.24 |
| COF01 | **0.54** | 0.21 | 0.19 | 0.19 | COF06 | **0.53** | 0.27 | 0.22 | 0.04 |
| CON05 | 0.15 | **0.69** | 0.07 | 0.33 | CON06 | 0.14 | **0.71** | 0.14 | 0.06 |
| CON02 | 0.18 | **0.69** | 0.12 | 0.08 | CON05 | 0.20 | **0.69** | 0.09 | 0.19 |
| CON06 | 0.10 | **0.69** | 0.18 | 0.09 | CON02 | 0.18 | **0.68** | 0.11 | 0.06 |
| CON03 | 0.09 | **0.67** | 0.09 | 0.08 | CON03 | 0.09 | **0.68** | 0.04 | 0.11 |
| CON11 | 0.17 | **0.59** | 0.22 | 0.04 | CON11 | 0.15 | **0.61** | 0.13 | 0.17 |
| COL11 | 0.21 | **0.57** | 0.21 | 0.37 | CON07 | 0.14 | **0.49** | 0.33 | 0.16 |
| CUR05 | 0.13 | 0.01 | **0.72** | 0.23 | CUR05 | 0.12 | 0.11 | **0.77** | 0.12 |
| CUR04 | 0.03 | 0.21 | **0.69** | 0.12 | CUR06 | 0.17 | 0.10 | **0.66** | 0.16 |
| CUR06 | 0.21 | 0.01 | **0.66** | 0.15 | CUR04 | 0.04 | 0.31 | **0.62** | 0.07 |
| CUR07 | 0.15 | 0.33 | **0.58** | -0.01 | CUR01 | 0.23 | -0.01 | **0.60** | 0.18 |
| CUR09 | 0.30 | 0.27 | **0.52** | 0.12 | CUR02 | 0.32 | 0.13 | **0.55** | 0.17 |
| CUR08 | 0.40 | 0.16 | **0.45** | 0.08 | CUR08 | 0.35 | 0.12 | **0.42** | 0.19 |
| CON08 | 0.16 | 0.01 | 0.00 | **0.76** | COL06 | 0.19 | 0.07 | 0.13 | **0.71** |
| CON04 | 0.16 | 0.37 | -0.09 | **0.64** | COL01 | 0.05 | 0.20 | 0.08 | **0.67** |
| COL12 | 0.21 | 0.06 | 0.30 | **0.58** | COL05 | 0.18 | 0.03 | 0.19 | **0.59** |
| COL06 | 0.29 | 0.02 | 0.18 | **0.53** | CON08 | 0.22 | 0.06 | 0.07 | **0.52** |
| COL09 | 0.07 | 0.22 | 0.24 | **0.53** | COL03 | 0.05 | 0.15 | 0.26 | **0.50** |
| COL08 | 0.14 | 0.28 | 0.39 | **0.45** | COL09 | 0.19 | 0.26 | 0.12 | **0.39** |

3.3. Confirmatory factor analyses

CFAs with maximum likelihood rotation were performed using AMOS version 19 (Arbuckle, 2010) to assess the structural validity of the CAAS French-language form and compare this with the CAAS international form 2.0 (in this sample). In order to assess model fit, various goodness-of-fit indices were considered; χ2 per degree of freedom (χ2/df), the goodness of fit index (GFI), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA; Cheung & Rensvold, 2002; Fan, Thompson, & Wang, 1999; Vandenberg & Lance, 2000). A model is considered to have an acceptable fit if the $\chi^2$/df is equal to or below 3, if the GFI, CFI, TLI values are about .90 or above, and a RMSEA of about .05 or less would indicate a close fit (Hu & Bentler, 1999). A hierarchical model was considered with four second-order variables (concern, control, confidence, and curiosity) and one third-order latent construct: adapt-abilities.

Considering the CAAS French-language form, the results (Table 4) indicated a moderate degree of model fit with GFI, CFI, TLI values close to .90, RMSEA below .08, and a $\chi^2$/df of 8.66. On the whole, these results only were slightly less good than the model fit statistics for the CAAS international form 2.0. The standardized loadings for the CAAS French-language form ranged from .56 to .73 (*Mdn* = .61) for the items, and from .77 to .88 (*Mdn* = .81) for the second-order variables. These loadings were comparable to and even slightly better than those of the CAAS international form 2.0, with item loadings ranging from .46 to .72 (*Mdn* = .58) and from .69 to .89 (*Mdn* = .82) for the second-order variables. Our results are comparable to the Savickas and Porfeli's (2012) for the CAAS international form 2.0.

Two additional models that utilized item parceling were tested (Bandalos, 2002; Little et al., 2002). Three homogenous parcels per scale were created by pairing items with the highest correlations, and then using the mean score of the two items in the analysis (Coffman & MacCallum, 2005; Rogers & Schmitt, 2004). This technique provided some improvement on

the model fit, as seen in Table 4. Standardized item weights for the CAAS French-language form ranged from .58 to .83 (*Mdn* = .70) and loadings from second- order to third-order constructs between .77 and .91 (*Mdn* = .83). For the CAAS international form 2.0, item loadings ranged from .64 to .76 (*Mdn* = .68), and the second-order constructs loaded onto the third-order constructs with a range of .71 to .93 (*Mdn* = .84).

3.4. Multi-group CFA

In order to assess the measurement equivalence of the CAAS French-language form across four different Francophone countries, a multi-group CFA was conducted. Tests of measurement equivalence focus on aspects of observed variables and address the relationships between measured variables and latent constructs. Of interest here are factor loadings, intercepts and residual variances; but often invariance of residual variances (for both the items and second-order constructs) are not tested (Brown, 2006; Byrne & van de Vijver, 2010). There is a lack of consensus as to the order of testing for invariance, as well as to the nomenclature used, and thus we followed the recommendations of Vandenberg and Lance (2000). Along with overall model fit of each model, the changes in model fit statistics were also inspected (Cheung & Rensvold, 2002; Vandenberg & Lance, 2000). The change in CFI should be less than .01 (Byrne & van de Vijver, 2010; Cheung & Rensvold, 2002) and some authors have used $\Delta$RMSEA < .05 (e.g., Savickas & Porfeli, 2012), although no cut-off was provided (Vandenberg & Lance, 2000). The question becomes whether the constrained model represents a significant worsening in fit as each subsequent model corresponds to a different type of invariance test (Vandenberg & Lance, 2000).

Configural invariance, also called “equal form” invariance, refers to the comparability of the factors structure and requires that the same number of factors and the same factor loading pattern, and is evident across groups (Brown, 2006). In this stage, no equality constraints with reference to factor loadings were imposed, and this model provided the baseline for

subsequent model comparisons (Model 1; Byrne & van de Vijver, 2010). Metric invariance implies the equivalence of factor loadings, and these factor loadings are constrained to be equal across samples (Brown, 2006; Byrne & van de Vijver, 2010). This entailed constraining the regression/measurement weights from each item to the relevant factor to be equal (Model 2a), as well as constraining the structural weights from each factor ($2^{nd}$ order) to the third-order construct (Model 2b). Scalar invariance is a test of the equivalence of intercepts and requires that the intercepts be constrained to be equal (Brown, 2006; Byrne & van de Vijver, 2010). In Model 3a, the measurement intercepts (i.e. intercepts of the items) were constrained, and in Model 3b the intercepts of the second-order factors were constrained.

Table 5 contains the results of the measurement equivalence testing for the CAAS French-language form considering three parcels per each second-order variable. The results indicated that scalar invariance in terms of measurement intercepts was reached across countries with CFI and TLI at .90 and RMSEA at .04. Inspection of the $\Delta\chi2(\Delta df)$, $\Delta$CFI and $\Delta$RMSEA indicated that the changes in goodness-of-fit indices were acceptable, with the possible exception of $\Delta$CFI being slightly above the recommended .01 limit. Concerning the CAAS international form 2.0 in this data (not tabled), the results indicated that full scalar invariance was supported with the following overall model-fit statistics, $\chi^2/df = 3.08$, CFI and TLI = .91 and RMSEA =.035. In our results, $\Delta$RMSEA was always below .05, and $\Delta$CFI was below .01 with the exception of the change from the M3a (measurement intercepts) to M3b (structural intercepts).

Table 4. Confirmatory Factor Analyses of the CAAS French-Language Form and CAAS International Form 2.0

| *Career Adapt-Abilities Scale* | $\chi 2$ | *df* | $\chi^2/df$ | *p* | *GFI* | *CFI* | *TLI* | *RMSEA* |
|---|---|---|---|---|---|---|---|---|
| CAAS French-language form | 2148.663 | 248 | 8.664 | <.001 | 0.897 | 0.861 | 0.846 | 0.067 |
| CAAS international form 2.0 | 1575.305 | 248 | 6.3522 | <.001 | 0.924 | 0.888 | 0.875 | 0.056 |
| CAAS French-language (parcels) | 433.919 | 50 | 8.6783 | <.001 | 0.957 | 0.948 | 0.932 | 0.067 |
| CAAS international form 2.0 (parcels) | 208.660 | 50 | 4.1732 | <.001 | 0.98 | 0.976 | 0.968 | 0.043 |

Table 5. Multigroup Analysis – CAAS French-Language Form

| *Career Adapt-Abilities Scale – Item Parcels* | *χ2* | *df* | *$\chi^2$/df* | *p* | *CFI* | *TLI* | *RMSEA* | *Δχ2(Δ df)* | *ΔCFI* | *ΔRMSEA* |
|---|---|---|---|---|---|---|---|---|---|---|
| Model 1 Unconstrained (Configural Invariance) | 706.35 | 200 | 3.532 | <.001 | .933 | .912 | .039 | | | |
| Model 2a Measurement Weights (Metric Invariance) | 751.94 | 224 | 3.357 | <.001 | .931 | .918 | .037 | 45.58(24) | -.002* | -.002* |
| Model 2b Structural Weights (Metric Invariance) | 773.33 | 233 | 3.319 | <.001 | .929 | .920 | .037 | 21.39(9) | -.002* | -.002* |
| Model 3a Measurement Intercepts (Scalar Invariance) | 969.09 | 257 | 3.771 | <.001 | .906 | .904 | .040 | 195.76(26) | -.023 | .003* |
| Model 3b Structural Intercepts (Scalar Invariance) | 1150.29 | 269 | 4.276 | <.001 | .884 | .886 | .044 | 181.20(12) | -.022 | .004 |

** ΔCFI < 0.01 and ΔRMSEA < 0.05*

3.5. Country differences controlling for age and gender

Considering the effect of age and gender in the total sample, country differences were assessed using ANCOVAs. After adjusting for the effects of age and gender on the CAAS French-language form, country differences were significant for concern ($F$[3,1618] = 19.11, $p$ < .001, $\eta^2$ = .03), control ($F$[3,1618] = 14.01, $p$ < .001, $\eta^2$ =.02), curiosity ($F$[3,1618] = 24.30, $p$ < .001, $\eta^2$ =.04) and confidence ($F$[3,1618] = 8.90, $p$ < .001, $\eta^2$ =.02), as well as total adapt-abilities ($F$[3,1618] = 24.72, $p$ < .001, $\eta^2$ =.04). Consistently the mean scores were highest for Luxembourg, followed by Switzerland, Belgium, and France, except for curiosity and confidence where the French scored slightly higher than the Belgians. Although these results could be attributed to the cultural context within the four countries, the age composition of the samples should be considered; the French and Belgian samples contained young participants, whereas the Swiss and Luxembourgish samples contained older participants.

When the comparison was restricted to Switzerland and Luxembourg only, the effect of the country variable on differences in adapt-abilities scores became non-significant. If only French and Belgians were compared with each other, the only country effect which remained was for the concern scale, but this effect was small ($F$[1,971] = 10.58, $p$ < .001, $\eta^2$ = .01). When a subsample of adults was selected, aged between 35-55 (resulting in participants from only Switzerland and Luxembourg) there were no country differences. When only younger participants were selected (16-18 year olds) only France, Switzerland, and Belgium were represented. The country differences in total mean scores on the adapt-abilities dimensions remained with the exception of a non-significant difference for confidence. After adjusting for the effects of age and gender, country differences were significant for concern ($F$[2,894] = 13.77, $p$ < .001, $\eta^2$ = .03), control ($F$[2,894] = 9.40, $p$ < .001, $\eta^2$ = .02), curiosity ($F$[2,894] = 6.63, $p$ < .001, $\eta^2$ = .01) and total adapt-abilities ($F$[2,894] = 12.11, $p$ < .001, $\eta^2$ = .03).

The country differences might be explained by the differences in educational systems in these countries.

## 4. Discussion

This study reconfirmed that some items that were not included in the CAAS international form 2.0 function better in the Francophone regions studied. Although only seven items varied in the two versions, the contents of the items reflected some important differences. For the Concern scale, a general future orientation seemed to fit better than planning related directly to goals. On the Control scale, the three items in the CAAS international form 2.0 that were replaced represented a self-focused orientation (e.g. "making decisions by myself"); the new items in the CAAS French-language form corresponded more with a general positive view of the future (e.g. "expecting the future to be good"), perseverance, and learning how to improve decision making. The items on the Curiosity scale that were changed represented similar content in both versions, but the items in the CAAS French-language form could be considered as representing more specific behaviors (e.g. "searching for information about choices I must make"), rather than general ones (e.g., "exploring my surroundings"). This "searching" item was the seventh item that worked in all 13 countries but was not used in the international form because it offered little psychometric gain. Finally, on the Confidence scale, doing challenging things rather than doing things well seemed to be more important. Again, this "doing" item was the seventh item for the confidence scale in the international study which could have been included. Further explanations of the differences in item content could be offered by cross-cultural studies (Matsumoto & Yoo, 2006). Notably, the selection of these items allows for an improvement in reliability. The structures of both the CAAS International form 2.0 and CAAS French-language form are replicable in the countries of Switzerland, Belgium, Luxembourg, and France. Indeed, clear evidence for metric

invariance and scalar invariance were provided.

4.1. Cross-cultural utility of adapt-abilities

The results of the measurement invariance tests indicated that participants in the four countries have the same conceptual framework for understanding adapt-abilities, and that the scale used to measure the items is comparable across countries. Scalar invariance was necessary to conduct mean comparisons across countries, and would indicate that the measurement scales have the same origin, suggesting bias-free measurement (van de Vijver & Tanzer, 2004). In previous work on the CAAS, it was not expected for the CAAS to reach scalar equivalence, because the construct is psychosocial in nature and not independent from context (Savickas & Porfeli, 2012). However, the results of the multi-group analysis suggested that meaningful comparisons in mean scores could be made across these four Francophone countries that have similar cultures. This suggested that unique norms might be proposed for these four countries, but that age also should be taken into account. Further studies with culturally more different Francophone countries might give more information about the impact of the cultural setting on career adapt-abilities.

4.2. Adapt-abilities: An argument for activation

Country differences were significant only when the sample was restricted to adolescents, which suggests that there is something particular about this life-stage in each country that prompts these differences. We propose that differences in educational systems across the four countries may provide an explanation. Importantly, Savickas and Porfeli (2012) indicated that "psychosocial constructs, such as adaptability, are highly sensitive to context and age" (p. 666), influencing us to posit that educational system differences may contribute to mean score differences. Adolescents also are still in the stage of developing possible career selves, and exploring many possible options (Guichard, 2003; Guichard, Poyaud, de Calan, & Dumora, 2012). In Luxembourg and Switzerland, early vocational choices (before the age of

16) are requested for a large part of the population due to the dual vocational training system that combines apprenticeships in a company with training in a professional school. In Belgium and France, after compulsory schooling, most students continue their education in a high school.

Moreover, preliminary results (Maggiori et al., 2012) suggested that career adapt-abilities are resources that people might activate in some specific situations, such as being unemployed, and that adaptability levels may change with the duration of unemployment. Job loss, an imminent career transition, and the transition from work to retirement also prompted the display of adapt-abilities (Ebberwein et al., 2004; McMahon et al., 2012).

4.3. Limitations

Despite our interesting findings, our country samples are not equal; this may increase the chances of multivariate non-normality, which violates the assumption required for CFA (Byrne & van de Vijver, 2010). However, Cheung and Au (2005) argued that smaller sample sizes for a particular country should not matter, as long as the overall sample size is sufficiently large. Next, the use of various estimation methods in CFA has differing impacts on model fit statistics (Fan et al., 1999). The consideration of fit indices other than chi-square may be considered a limitation. However, our choice of goodness-of-fit indices, including both chi-square and other indices, was in agreement with common approaches (Vandenberg & Lance, 2000) and gave us confidence in the adequacy of our model-fit results. RMSEA seems most sensitive to model misspecification and less influenced by estimation methods, and CFI is minimally influenced by sample size (Fan, Thompson, & Wang, 1999). Item parceling techniques can have a differential impact on model fit, but the chosen parceling technique provided more accurate parameter estimates and was more sensitive to model misspecification than other techniques (Rogers & Schmitt, 2004).

Finally, the age distribution of the sample is a limitation, resulting in a confound between

age and country differences. Clearly there is a need to repeat this kind of analysis in more representative samples. However, the age distribution of the sample did allow us to replicate the factor structure (CCs) in different age groups, showing that it is viable to test adapt-abilities in adolescent samples. Further studies about the development of career adapt-abilities should certainly be conducted using other adolescent samples.

4.4. Implications for practice

Given the preponderance of recent research on the subject of adapt-abilities and the CAAS used to measure them, school guidance and other career practitioners can start by administering the instrument in order to explore the starting points for the interventions that they plan. School guidance personnel and career counselors are in unique positions to help clients activate all four career adapt-abilities (i.e., concern, control, curiosity, and confidence) through direct interventions and the use of homework assignments. Generally, these adapt-abilities could be activated through conversations about their meanings and applications, through activities assigned during and outside of sessions, and through role-plays. For adolescents, career guidance lessons can be used to inspire students' curiosity in the world of work, concern for their future careers in a global sense, control by helping students search for more specific careers information in line with their interests and abilities, and building confidence in their abilities to problem solve and make career decisions.

For adults, given that career adapt-abilities are at their highest within a four to ten-month period after job loss (Maggiori et al., 2012), a real window of opportunity exists for helping clients to activate their personal resources and career adapt-abilities in the career counseling setting. In addressing the meaning of the four adapt-abilities through conversation, clients can become more aware of their own strategies for enhancing their natural inclinations towards career concern, control, curiosity, and their own confidence in making career decisions. Then, career counselors can design activities that fit with the client's cultural and individual context

in order to bolster areas of adapt-abilities that present the greatest concerns. For instance, various Internet and government-issued programs can be explored during or outside of sessions in order to increase clients' curiosity about the ever-changing world of work in a highly global economy. For career transitioners, career concern may be addressed by considering the meaning that clients wish to realize in their new roles, contexts, or careers as they explore new career options. A greater sense of control and confidence can be inspired and bolstered through the use of role-plays in the career counseling setting. Additionally, homework activities given to clients can further reinforce in-session discussions and role-plays to help clients interact with others in the real world-of-work context. These activities may include making cold calls to potential employers, asking for pre-interviews to learn more about a company's philosophy and management style, and contacting others within their professional and personal networks to learn about job openings or the skills needed to compete in current job markets within the sectors that interest them.

### 4.5. Conclusion

Researchers and practitioners have the opportunity to use the items from the CAAS international form 2.0, as well as the CAAS French-language form, resulting in a 31-item scale. Using both sets of items would allow for agreement with measurement of adapt-abilities in different countries that use the international form 2.0, but also would contribute to more accurate measurement of adapt-abilities in Francophone countries. Measurement of adapt-abilities is definitely interesting and useful, but even more interesting is the possibility that adapt-abilities may be developed and activated through various interventions. Career adapt-abilities are important resources for navigating the ever-changing world of work throughout the professional trajectory and at the intersection of various life roles.

## III. Validation of the German version of the Career Adapt-Abilities Scale and its relations to orientations to happiness and work stress

Reproduction of the following article:

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Abstract

Career adaptability has recently gained momentum as a psychosocial construct that not only has much to offer the field of career development, but also contributes to positive coping, adjustment and self-regulation through the four dimensions of concern, control, curiosity and confidence. The positive psychology movement, with concepts such as the orientations to happiness, explores the factors that contribute to human flourishing and optimum functioning. This research has two main contributions; 1) to validate a German version of the Career Adapt-Abilities Scale (CAAS), and 2) to extend the contribution of adapt-abilities to the field of work stress and explore its mediating capacity in the relation between orientations to happiness and work stress. We used a representative sample of the German-speaking Swiss working population including 1,204 participants (49.8% women), aged between 26 and 56 ($M_{age}$ = 42.04). Results indicated that the German version of the CAAS is valid, with overall high levels of model fit suggesting that the conceptual structure of career adaptability replicates well in this cultural context. Adapt-abilities showed a negative relationship to work stress, and a positive one with orientations to happiness. The engagement and pleasure scales of orientations to happiness also correlated negatively with work stress. Moreover, career adaptability mediates the relationship between orientations to happiness and work stress. In depth analysis of the mediating effect revealed that control is the only significant mediator. Thus control may be acting as a mechanism through which individuals attain their desired life at work subsequently contributing to reduced stress levels.
Keywords: career adaptability, mediator, orientations to happiness, work stress

## 1. Introduction

Career adaptability has recently gained momentum as a psychosocial construct that not only has much to offer the field of career development, but also contributes to positive coping, adjustment and self-regulation through the four dimensions of concern, control, curiosity and confidence (Savickas, 2005). Orientations to happiness are part of the positive psychology movement that has shifted attention from all that is "wrong" to all that is "right" aiming to capture the aspects that add meaning to life and promote optimal functioning (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000). We test the capacity of adapt-abilities and orientations to happiness to contribute to lower levels of stress at work and thus furnish the literature on individual characteristics implicated in the stress response (Cooper, Dewe, & O'Driscoll, 2001; Lazarus & Folkman, 1984). Stress is expensive with the economic and social costs associated with strain-related consequences prompting an interest in the study of work stress (Bakker, van Veldhoven, & Xanthopoulou, 2010). We expect that both adapt-abilities and orientations to happiness function as personal resources and contribute to the reduction of work stress. An individual's endorsement of an orientation to happiness does not guarantee the enactment of a particular orientation (Peterson, Ruch, Beermann, Park, & Seligman, 2007) and thus an intervening variable may be required. Adapt-abilities are involved in the translation of individual dispositions into behavior (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012) and may act as the mechanism variable that explains the relationship between orientations to happiness and work stress. This research proceeds in two parts with each making a unique contribution. First, we add to the growing body of international work on adapt-abilities by validating the German version of the Career Adapt-Abilities Scale (CAAS). A team of international researchers jointly developed the CAAS (Savickas & Porfeli, 2012). A necessary subsequent step is the validation of this measure in different countries with this laying a solid foundation for the

continued utility of the CAAS. To date, the German version of the CAAS international form 2.0 is not yet available. Second, we test the capacity of adapt-abilities to function as a mediator in the relationship between orientations to happiness and work stress.

Adapt-abilities, as a part of career construction theory, are involved in the construction of a career reality and assist individuals in imposing meaning on their career related experiences (Savickas, 2005; Savickas et al., 2009). The adaptability dimensions of concern, control, curiosity and confidence assist individuals in preparing for and participating in the work role (Savickas, 1997). The application of adapt-abilities is not limited to career construction and career development. Career adaptability can be seen as a much broader concept consisting of one's readiness and resources to respond to the world of work through problem solving, coping and self-regulation (Savickas, 2005). Indeed, when faced with potentially stressful situations such as unemployment and career transitions, individuals respond with displays of adapt-abilities (Ebberwein, Krieshok, Ulven, & Prosser, 2004).

The adaptability dimensions of concern, control, curiosity and confidence are comprised of attitudes, beliefs and competencies (Savickas, 2005) that allow conceptual links between adapt-abilities and work related outcomes, such as work stress. Career concern, with the associated attitude of and competence in planning, fosters coping behaviors of awareness and preparation, assisting individuals to respond to the demands of the work environment. Control fosters personal responsibility for one's career and work experiences. A decisive attitude, engaging in decision-making and behaving in an assertive manner may assist individuals to create the desired work experience. Career curiosity facilitates a good fit between the self and the world of work, and through exploration and risk-taking suggests that individuals gain new knowledge and competences. Confidence has been likened to self-esteem and self-efficacy (Savickas, 2005) with this belief in the self to master challenges and solve problems suggesting a capacity to respond to stressful situations. Through preparation,

action, exploration, and problem solving individuals should perceive their work environment, and their capacity to respond adequately, more favorably and subsequently experience less work stress.

The term "stress" has been theorized differently in stimulus based models (Dohrenwend & Dohrenwend, 1974; Holmes & Rahe, 1967), response based models (Selye, 1982), and transactional models (e.g. Lazarus & Folkman, 1984). In this study, we focus on stress produced by the life domain of work, which is defined as "an uncomfortable state of psychological tensions that results from an appraisal that the perceived demands of the workplace exceeds the individual's perceived resources to successfully meet the demands" (de Bruin, 2006, p. 68). We focus on the psychological nature of the stress response (rather than the behavioral or physical) as a potential threat to well-being and consider that individual characteristics or resources may offer some protection against stress (Cooper et al., 2001; Lazarus & Folkman, 1984). Rather than only focusing on negative traits such as neuroticism (Schneider, 2004), some approaches to well-being have considered positive characteristics, such as optimism (Seligman & Csikszentmihalyi, 2000).

The main focus of positive psychology is what makes our lives most worth living (Seligman & Csikszentmihalyi, 2000) and the aspects that enable human flourishing and optimal functioning (Gable & Haidt, 2005; Giannopoulos & Vella-Brodrick, 2011). Three topics are at the center of positive psychology: a) positive subjective experiences, b) positive traits, and c) positive institutions (Peterson, 2006; Seligman & Csikszentmihalyi, 2000). Happiness is one aspect of well-being (Diener, 2000) and consequentially the positive characteristic of orientations to happiness that proposes different pathways to happiness may contribute to work-related well-being (Peterson, 2006; Seligman, 2002). Seligman (2002) first developed the concept of orientations to happiness, with Peterson, Park and Seligman (2005) later developing the Orientations to Happiness questionnaire. First, the pleasure

orientation suggests that the maximization of pleasure and the minimization of pain is the chief route to happiness. Engagement, or the experience of flow enabled by a good match between demands and competences at work, is another route to happiness. A third option suggests that true happiness entails identifying one's virtues, cultivating them, and living in accordance with them. There is first empirical evidence that orientations to happiness are pertinent at work and in the career context showing relations to subjective and objective career success (Proyer, Annen, Eggimann, Schneider, & Ruch, 2012). Further, the three orientations to happiness are related to vocational identity achievement (Hirschi, 2011). Vocational identity achievement together with career adaptability are defined as the major meta-competencies in career construction theory (Savickas, 2011; Stauffer, Maggiori, Froidevaux, & Rossier, 2014) and are empirically related to each other (Porfeli & Savickas, 2012). These relationships suggest that orientations to happiness and career adapt-abilities may be related to each other and simultaneously implicated in the stress response.

In this study, we propose that adapt-abilities will mediate the relationship between orientations to happiness and work stress. As individual use adapt-abilities to achieve their desired life, as framed by their orientations to happiness, we expect that they will experience reduced work stress. Orientations to happiness alone may not be enough to realize behavioral adjustments or changes to one's work environment. Adaptability, a behaviorally oriented individual characteristic, provides an important link between one's dispositions and experience of the work context (Rossier, 2014). Previous research indicates the mediating effect of adapt-abilities in the relationship between personality traits and work engagement, and suggests that "career adaptability might be considered as a process variable contributing to the adjustment to work-related contextual constraints" (Rossier et al., 2012, p. 742). In this sense, one's dominant orientation to happiness may prompt the use of adapt-abilities, which in turn may lower work stress.

Orientations to happiness predict the planning and pursuit of activities in different life domains (Ruch, Harzer, Proyer, Park, & Peterson, 2010), but adapt-abilities may be necessary to realize the required behavior. Adapt-abilities may assist individuals to find a job characterized by pleasant rather than unpleasant experiences. Curiosity may contribute to finding this match, whereas confidence enables the realization of this match (Savickas et al., 2009). Control and confidence, enable individuals to take responsibility for creating a favorable work environment conducive to engagement (Savickas, 1997). Stress results from a mismatch between challenges and skills, or demands and resources (de Bruin, 2006). Individuals with a meaning orientation aim to discover and realize their purpose through the application of their virtues and strengths. To find meaningful work where work is seen as a calling, or as a source of purpose (Dik & Duffy, 2009), career concern with the associated planning and exploration may be necessary. The presence of meaning in life has been linked to well-being in terms of life satisfaction, positive affect, optimism, and self-esteem (Compton, Smith, Cornish, & Qualls, 1996) and may thus contribute to reduced work stress.

## 2. Method

### 2.1. Participations

The representative sample of German-speaking working adults in Switzerland aged between 26 and 56 consisted of 1,204 participants ($M_{age}$ = 42.04, *SD* = 8.76) with 49.8% women (*n* = 599) and 50.2% men (*n* = 605). All participants were employed with a mean activity rate of 86% (*SD* = 19.7). The majority of the participants were Swiss (*n* = 1,003) and 16.7% were non-Swiss (*n* = 201).

### 2.2. Measures

#### 2.2.1. Career adapt-abilities scale

The 24-item CAAS international form 2.0 (Savickas & Porfeli, 2012) yields a total score indicating a person's adaptability. The response format consists of 5 options with 1 indicating "*I don't have the ability to…/ This is not a resource for me*" and 5 indicating "*I have a very strong ability to…/ This is a very important resource for me*". Items are divided equally into the four subscales of concern (e.g. "thinking about what my future will be like"), control (e.g. "taking responsibility for my actions"), curiosity (e.g. "exploring my surroundings") and confidence (e.g. "learning new skills). Reliabilities for this study are good with $\alpha = .88$ for concern, $\alpha = .87$ for control, $\alpha = .86$ for curiosity, and $\alpha = .87$ for confidence. The reliability of the total scale was also very high, with an alpha of .94. Items are presented in appendix 2.

#### 2.2.2. Orientations to happiness

A short 9-item version of the Peterson, Park, and Seligman (2005) Orientations to Happiness questionnaire was used (Ruch, Martinez-Marti, Heintz, & Brouwers, 2014). The endorsement of each orientation to happiness dimension is measured with three items: engagement (e.g., "I am always very absorbed in what I do"); pleasure (e.g., "Life is too short to postpone the pleasures it can provide"); and meaning (e.g., "My life serves a higher purpose"). Each item requires the respondent to answer on a 5-point scale the degree to which the item applies (1 = "*very much unlike me*" through 5 = "*very much like me*"). Reliability analysis provided the following alpha values; .72 for pleasure, .56 for engagement, and .68 for meaning. The three orientations to happiness are considered separately and not combined into a total score.

#### 2.2.3. Work stress

The 9-item General Work Stress Scale is a one-dimensional measure of the level of stress caused by work (de Bruin & Taylor, 2005). Individuals respond to items (e.g. "Do you become so stressed that you would resign?") using a 5-point Likert type scale ranging from 1 = "never" to 5 = "always". For this study, the Cronbach alpha is .86.

#### 2.2.4. Control variables

To isolate the effects of orientations to happiness and adapt-abilities on work stress, we included the control variables of age, gender, nationality and activity rate. Age, gender and ethnicity can influence well-being outcomes (Lent, 2004) and are thus included as controls. Age was measured as a continuous variable, and gender was coded as 1 = *man*, and 2 = *woman*. Nationality was coded as 1 = *Swiss*, and 2 = *non-Swiss*, with the Swiss category including those with a dual citizenship, one of which is Swiss. In Switzerland, a 100% activity rate corresponds to a 42-hour workweek. As such, total activity rate, assessed in percentages, was included as individuals who spend more time at work may experience more stress.

### 2.3. Procedure

A representative sample of the German-speaking Swiss working population was drawn based on a sampling list from the Swiss Federal Statistics Office. Instruments were translated into German and then back-translated into English. The back-translations were sent to the authors of the scales for their comments. Adjustments were made with subsequent checks from the scale authors. Concerning the German version of the CAAS, the author of the scale, Mark Savickas, suggested that the item "working up to my abilities" did not translate very well in German and proposed to consider an additional item "use the best of my competence" that could be compared to the original item.

#### 2.3.1. Analysis

To validate the structure of the German version of the CAAS, we conducted confirmatory factory analysis using Amos version 19 (Arbuckle, 2010) with maximum likelihood estimation. A hierarchical model was proposed with four second-order variables (concern, control, confidence, and curiosity) and one third-order latent construct: adapt-abilities. All of the items were specified to load onto their designated factor only. We tested two separate

models, one including the original items as specified in the international form 2.0, and one replacing the original confidence item "working up to my abilities" with the suggested item "use the best of my competence".

To predict work stress from the control variables, career adapt-abilities and orientations to happiness, a series of hierarchical regression analyses were done. Control variables of age, gender, nationality and activity rate were entered in the first step. In a first model, career adapt-abilities were entered in the second step, followed by orientations to happiness. In a second model, the orientations to happiness dimensions were entered first, followed by career adapt-abilities in the third step. This was done to test the incremental validity of each concept in relation to the other. Missing data was removed with list wise deletion.

A mediation model was suggested to better clarify the relationships between work stress, career adapt-abilities and orientations to happiness. The methodology proposed by Preacher and Hayes (2004; 2008) was adopted. This approach involves the use of bootstrapping with 1000 samples to obtain a point estimate of the indirect effect of the IV on the DV through the mediator(s) as well as 95% percentile based confidence intervals (CI) for this estimate. This technique permits the identification of an indirect effect even if X does not predict Y (Hayes, 2009; Preacher & Hayes, 2004). In these cases, the language of "indirect effect" is preferred over "mediator effect" (Hayes, 2009). In this analysis, various pathways are considered; pathway *c* (*X's* total effect on *Y*), pathway *a* (*X* predicts *M*), pathway *b* (*M* predicts *Y*), and pathway *c'* (*X's* direct effect on *Y,* when *M* is controlled). The product of pathways *a* and *b* (*ab*) represents the indirect effect of *X* on *Y* through *M*. All the pathways described above can be calculated whilst controlling for the effect of the control variables. See figure 1 for an illustration of this mediation model.

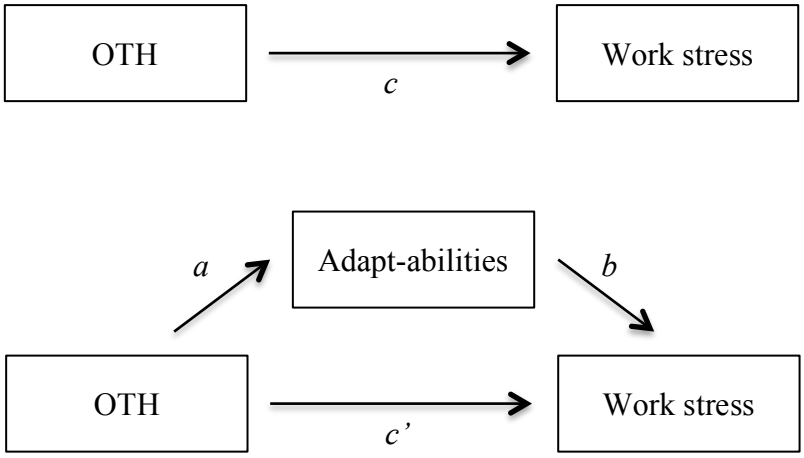


*Figure 2.* Career adapt-ability as a mediator between orientations to happiness and work stress

## 3. Results

### 3.1. Descriptives and correlations

Table 1 provides an overview of the means, standard deviations and correlations between the variables. Regarding the significant relationships between variables, age shows small negative correlations with nationality and activity rate. Gender correlates negatively and moderately with activity rate. Age has small positive correlations with control and curiosity, and a small negative correlation with engagement and meaning. Gender shows no significant relation to any of the study variables, whereas nationality only has a small positive correlation with concern. Activity rate is positively correlated with concern, confidence, engagement, pleasure, and work stress, but is negatively correlated with meaning. All of the adaptability dimensions correlate positively with the orientations to happiness dimensions. Total adapt-abilities correlates strongly and positively with the four separate adaptability dimensions and moderately with orientations to happiness. Lastly, considering work stress, we find a positive relationship with activity rate, and negative relationships between work stress and all the adaptability dimensions and the total score, as well as with pleasure and engagement. Work stress is not significantly related to meaning. The associations between

the study variables provide first indications that it is warranted to conduct further analyses in the form of a mediation model. Two dimensions of orientations to happiness, pleasure and engagement, are related to work stress, and the proposed mediator adapt-abilities is related to both work stress and orientations to happiness.

3.2. Validation of the career adapt-abilities scale German-form

As suggested by various authors (Cheung & Rensvold, 2002; Vandenberg & Lance, 2000), we chose to consider a variety of goodness-of-fit indices; $\chi^2$ per degree of freedom ($\chi^2/df$), the goodness of fit index (GFI), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). A model is considered to have an acceptable fit if the $\chi^2/df$ is equal to or below 3, the GFI and CFI values are about .90 or above, the TLI values are above .95 and the RMSEA value is .05 or less, with values less than .08 considered acceptable (Cheung & Rensvold, 2002; Vandenberg & Lance, 2000).

As seen in Table 2, the hierarchical four-factor model provided a moderate degree of fit to the data. The standardized loadings from the items to the corresponding factor ranged from .62 to .80 (*Mdn* = .74), and the loadings from the second-order variables (concern, control, curiosity and confidence) to adapt-abilities from .75 to .90 (*Mdn* = .84). A four-factor model that took into account modification indices (MI) greater than 20 associated with the covariances between the error terms within each dimension was also tested. This model accounts for the shared variance between items within a dimension. This resulted in a significant improvement in model fit with results indicating a substantial degree of model fit. The correlations between error terms were all below .47. The standardized loadings ranged from .60 to .81 (*Mdn* = .74) for the items, and from .75 to .92 (*Mdn* = .84) for the second-order variables. The degree of model fit as well as the loadings is comparable to the results of the international validation of the CAAS in 13 countries (Savickas & Porfeli, 2012).

Finally, the hierarchical four-factor model that utilized item parceling was tested (Bandalos, 2002). Items with the highest correlation were paired creating three homogenous parcels per scale, and then using the mean score of the two items in the analysis (Rogers & Schmitt, 2004). This technique provided good model fit for the CAAS French-language form (Johnston, Broonen., et al., 2013) and thus we tested this strategy with the German-language form. This model proved to have similar fit to the model with modification indices as seen in Table 2. Standardized parcel weights ranged from .71 to .88 (*Mdn* = .78) and loadings from second- order to third-order constructs between .74 and .94 (*Mdn* = .85).

As mentioned previously, due to translation reasons, the author of the CAAS suggested including an alternate item for the confidence scale. The use of this alternate item provided an improvement in model fit with the following model fit statistics; $\chi^2/df = 6.52$, $p < .001$, *GFI* = .89, *CFI* = .91, *TLI* = .90 and *RMSEA* = .068. The standardized loadings from the items to the corresponding factor ranged from .62 to .79 (*Mdn* = .74), and the loadings from the second-order variables to adapt-abilities from .75 to .90 (*Mdn* = .84). Although an improvement in model fit is gained by using this alternate item, there are no changes in scale reliability, and so for the sake of consistency with the international version, we chose to continue the analysis with the items originally specified in the international version.

Table 1. Descriptives and Correlations of Study and Control Variables

| | *M* | (*SD*) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 42.04 | (8.76) | | | | | | | | | | | | | |
| 2. Gender | 1.50 | (0.50) | -.01 | | | | | | | | | | | | |
| 3. Nationality | 1.16 | (0.37) | -.10** | -.10 | | | | | | | | | | | |
| 4. Activity rate | 86.00 | (19.70) | -.15** | -.52** | .06 | | | | | | | | | | |
| 5. Concern | 3.52 | (.64) | -.05 | -.04 | .07** | .08* | (.88) | | | | | | | | |
| 6. Control | 3.96 | (.59) | .06** | .00 | -.01 | .05 | .57** | (.87) | | | | | | | |
| 7. Curiosity | 3.63 | (.62) | .08** | .03 | .04 | .00 | .60** | .59** | (.86) | | | | | | |
| 8. Confidence | 3.91 | (.57) | -.01 | -.00 | .05 | .07* | .56** | .71** | .63** | (.88) | | | | | |
| 9. Adaptability | 3.74 | (.51) | .02 | -.01 | .05 | .06* | .82** | .85** | .84** | .85** | (.94) | | | | |
| 10. OTH Pleasure | 3.63 | (.74) | -.05 | -.01 | -.01 | .80** | .20** | .27** | .23** | .26** | .29** | (.87) | | | |
| 11. OTH Engagement | 3.48 | (.66) | .10** | -.04 | .01 | -.07* | .25** | .30** | .24** | .33** | .42** | .42** | (.56) | | |
| 12. OTH Meaning | 3.07 | (.84) | .10** | .04 | -.05 | -.06* | .28** | .18** | .35** | .24** | .31** | .20** | .38** | (.68) | |
| 13. Work stress | 1.81 | (.56) | -.02 | -.04 | .02 | .09** | -.14** | -.22** | -.10** | -.16** | -.18** | -.14** | -.12** | -.05 | (.86) |

*Notes*. Reliabilities are shown in parentheses along the diagonal. For all correlations, *n* between 1'184 and 1'204. Nationality is coded 1 = Swiss, 2 = non-Swiss. Gender is coded as 1 = man, 2 = woman. Activity rate is in percentages.

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

Table 2. Confirmatory Factor Analyses of the CAAS German

| *Career Adapt-Abilities Scale* | $\chi^2$ | *df* | $\chi^2/df$ | *p* | *GFI* | *CFI* | *TLI* | *RMSEA* |
|---|---|---|---|---|---|---|---|---|
| Hierarchical 4 factor model | 2028.35 | 248 | 8.179 | <.001 | .869 | .887 | .875 | .078 |
| Hierarchical 4 factor model (MI > 20) | 779.557 | 225 | 3.465 | <.001 | .949 | .965 | .957 | .045 |
| Hierarchical 4 factor model with parcels | 324.483 | 50 | 6.489 | <.001 | .957 | .966 | .956 | .068 |

*Note.* Only modification indices > 20 associated with covariances between error terms within each dimension were considered.

3.3. Predicting work stress from career adapt-abilities and orientations

For the results of the regression models, standardized beta coefficients from the final model are presented. The VIF collinearity statistics are close to 1 and therefore we are not concerned about multi-collinearity. First we present the results pertaining to the model in which the adaptability dimensions were entered before the orientations to happiness dimensions. Concerning the control variables, the only significant one is activity rate ($b$ = .13, $p < .001$), which shows a positive relation to work stress, $R^2 = .009$, $F(4, 1186) = 2.67$, $p < .05$. The addition of the four adaptability dimensions adds 5.3% to the explained variance with $F_{change}(4, 1182) = 16.64$, $p < .001$. Only the dimensions of control ($b$ = -.18, $p < .001$) and curiosity ($b$ = .08, $p < .05$) are significantly related to work stress. Adding the orientations to happiness to the model only adds 1.1% to the explained variance, $F_{change}(3, 1179) = 4.84$, $p < .01$. Only pleasure ($b$ = -.09, $p < .01$) is significantly and negatively related to work stress.

For the model with orientations to happiness entered first followed by career adaptability, once again only activity rate ($b$ = .13, $p < .001$) is significant, $R^2 = .009$, $F(4, 1186) = 2.67$, $p < .05$. Orientations to happiness is able to explain an additional 2.9% of the variance in work stress, $F_{change}(3, 1183) = 12.00$, $p < .001$. Pleasure ($b$ = -.09, $p < .01$) shows significant relationship to work stress. The career adaptability dimensions are able to explain an additional 3.5% of the variance in work stress, $F_{change}(4, 1179) = 11.11$, $p < .001$. Control ($b$ = -.18, $p < .001$) is negatively related to work stress and curiosity ($b$ = .08, $p < .10$) shows a marginally significant positive association.

Two points from the above results are important for further analysis; 1) only activity rate will be retained as a control variable, and 2) the mediation models will clarify the relationships between the variables and will be tested for all three orientations to happiness

dimensions. It is still possible to test for indirect effects in the absence of a significant IV-DV relationship (Hayes, 2009; Preacher & Hayes, 2004).

3.4. Mediating effects of adapt-abilities

Three separate mediation models were proposed; one for each orientation to happiness with total adapt-abilities as the mediator and work stress as the dependent variable. In all these models, activity rate was included as a control variable. Results of these mediation analyses are presented in table 3. For the pleasure and engagement dimension, results show that adaptability partially mediates the effect of pleasure and engagement on work stress; the direct effect (*c'*) of pleasure and engagement is diminished but remains significant. These mediating effects can be considered significant because the confidence intervals for the indirect effects (*ab*) do not include zero. Meaning shows no significant relationship with work stress (*c'*), but, as presented previously, it is possible to test for an indirect effect in the absence of this relationship. In this case, the confidence interval for the indirect effect of meaning on work stress through adapt-abilities does not contain zero. Thus, there is evidence that meaning does have an indirect effect on work stress, but only due to the presence of adapt-abilities.

3.5. Mediating effects of the separate adaptability dimensions

Further in depth analysis was conducted to test which adaptability dimensions carry the mediating effect. Models were set up as above, replacing the single mediator total adapt-abilities with the four adaptability dimensions resulting in a multiple mediator model for each orientations to happiness dimension. Table 4 contains the results of these analyses. First, for both pleasure and engagement, results suggest both control and curiosity as partial mediators of the relation between the dimensions of orientations to happiness and work stress (see column *b*). However, inspection of the confidence intervals of the indirect effect (*ab*) shows that only control is the significant mediator, as this confidence interval does not contain zero.

For the meaning dimension, the pattern of the results is the same as above, but considering the non-significant direct effect of meaning on stress, meaning is only associated to work stress through control. The other adaptability dimensions of concern, curiosity and confidence do not mediate the relationship between orientations to happiness and work stress.

Table 3. Mediating Effects of Total Career Adapt-Abilities in the Relationship Between Orientations to Happiness and Work Stress

| Independent variable | Effect of OTH on CAAS | Effect of CAAS on Stress | Total Effect | Direct Effect | Indirect Effect | |
|---|---|---|---|---|---|---|
| (IV) | (a) | (b) | (c) | (c') | (ab paths) | 95% CI |
| OTH-P | 1.55*** | -.065*** | -.346*** | -.245** | -.011 | (-.153; -.057) |
| OTH-E | 2.04*** | -.067*** | -.329*** | -.191** | -.138 | (-.206; -.075) |
| OTH-M | 1.54*** | -.080*** | -.083 | .041 | -.124 | (-.172; -.082) |

*Note.* All models include activity rate as a control variable. Confidence intervals are percentile based confidence intervals. OTH = orientations to happiness; CAAS = career adapt-abilities.

* $p < .05$. ** $p < .01$, *** $p < .001$

Table 4. Mediating Effects of the Career Adapt-Abilities Dimensions in the Relationship Between OTH and Work Stress

| Independent variable | Mediating variable | Effect of OTH on CAAS | Effect of CAAS on Stress | Total Effect | Direct Effect | Indirect Effect | |
|---|---|---|---|---|---|---|---|
| (IV) | (M) | (a) | (b) | (c) | (c') | (ab paths) | 95% CI |
| OTH-P | Concern | .350*** | -.085 | -.348*** | -.236*** | -.030 | (-.074; .006) |
| | Control | .423*** | -.265*** | | | -.112 | (-.179; -.052) |
| | Curiosity | .376*** | .120* | | | .045 | (-.002; .094) |
| | Confidence | .395*** | -.038 | | | -.015 | (-.075; .044) |
| OTH-E | Concern | .480*** | -.082 | -.329*** | -.176* | -.040 | (-.093; .012) |
| | Control | .528*** | -.277*** | | | -.146 | (-.237; -.078) |
| | Curiosity | .454*** | .112* | | | .051 | (-.003; .104) |
| | Confidence | .577*** | -.030 | | | -.018 | (-.104; .071) |
| OTH-M | Concern | .431*** | -.087 | -.085 | -.015 | -.037 | (-.085; .006) |
| | Control | .257*** | -.287** | | | -.074 | (-.119; -.037) |
| | Curiosity | .518*** | .115* | | | .060 | (-.001; -.125) |
| | Confidence | .334*** | -.053 | | | -.018 | (-.067; .034) |

*Note.* All models include activity rate as a control variable. Confidence intervals are percentile based confidence intervals. OTH = orientations to happiness; CAAS = career adapt-abilities.

$p < .05$. ** $p < .01$, *** $p < .001$

## 4. Discussion

This study had two main goals, to validate the German version of the CAAS and to test the mediating effect of adapt-abilities in the relationship between orientations to happiness and work stress. Results support both these aspects, and are discussed next starting with the validation of the CAAS.

### 4.1. Validation of the German version of the career adapt-abilities scale

The results of our validation study provide support for the use of the German version of the CAAS international form 2.0. The overall high levels of fit between the model and the data suggest that the conceptual structure of adapt-abilities is stable in yet another country and provides further evidence for the validity of the CAAS. Career adaptability is gaining international momentum (Savickas & Porfeli, 2012) and the results of this study advance our confidence in the usefulness and broad applicability of this construct. An alternative item for the confidence scale "use the best of my competence" can replace "working up to my abilities" in the German version. Although only one item difference, using this item does result in an improvement in model fit. Users of this scale in a German-speaking context may want to include both items to have congruence with the international form 2.0.

### 4.2. The relationships of orientations to happiness and adapt-abilities

We proposed that adapt-abilities would mediate the relationship between all the happiness orientations and work stress. Concerning engagement and pleasure, we found that adaptability partially mediates the relationship between these orientations and work stress. As such, part of the effect of pleasure and engagement on work stress is being transferred through the mechanism of adapt-abilities. However, pleasure and engagement still have an effect on work stress, independent of the effect through adapt-abilities. Considering the non-significant relationship of life of meaning to work stress, we found that meaning only has an indirect effect on work stress that is dependent on the presence of adapt-abilities. The absence

of a negative direct effect between an orientation towards meaning and stress might reflect different mechanisms underlying the connection between the two constructs. Further, in contrast to a life of engagement, which is more related to the work context, other spheres of life besides work offer the possibility to find meaning and purpose in (i.e. meaningful social relationships, helping others). Our results suggest that overall career adaptability plays an important role in implementing the endorsement of the orientations to happiness into practice in work life. Career adaptability seems to serve as one mechanism through which individuals attain their desired life at work.

4.3. Control as an important intervening variable

When we consider the mediating effects of the separate adaptability dimensions, we find that only control acts as a mechanism variable. Control represents a self-directed and self-reliant perspective that is aimed at taking responsibility and making decisions that reflect an individual's self-interest contributing to a positive rather than negative work experience. Our results indicate control's unique ability to function as a mediator even in the presence of concern, curiosity and confidence (Preacher & Hayes, 2008). When mediators are correlated (as is the case in our data), the unique effects of each variable may be attenuated (Preacher & Hayes, 2008) which may explain why concern, curiosity and confidence are not significant mediators.

4.4. Implications for theory and practice

Our results suggest that career adaptability and orientations to happiness are significantly and negatively related to perceiving stress at work. Given this relationship the question emerges whether these two constructs can be developed or increased by interventions, and if this increase would have further reductive effects on work stress. Promoting career adaptability may be one way to give individuals the tools necessary to accomplish their orientations to happiness in the work context. Career adaptability can be developed

(Savickas, 1997; Savickas et al., 2009); concern through orientation exercises, control through decisional training, curiosity through information seeking activities, and confidence through self-esteem building activities (Savickas, 2005). There are indications that adapt-abilities may change in response to different situations. For example, unemployed individuals respond to job loss with increased levels of adaptability (Rossier, 2014), and the transition from work to retirement prompted the display of adaptability (Ebberwein et al., 2004). Further, adolescents in France, Belgium, and Switzerland have different levels of career adaptability (Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013). It seems then that adapt-abilities are not independent of context, and that interventions aimed at the development of career adapt-abilities may result in favorable personal and work outcomes.

Regarding the orientations to happiness, Giannopoulos and Vella-Brodrick (2011) showed that interventions, which draw individuals' attention to pleasurable, meaningful or engaging aspects of their life, had the potential for increasing well-being. Some orientations may be more easily developed than others with Peterson and colleagues (2005) pointing out that the orientation towards meaning and the orientation towards engagement are the ones most under personal control. Since we found a strong direct but also a mediated effect of the engagement orientation, for interventions aiming to reduce stress by promoting the orientations to happiness, the engagement orientation might be a logical point to start.

4.5. Limitations and open questions

Common method bias is a potential risk as all data were collected using self-report methodology and at the same time. As this data is cross-sectional, there is always the possibility that perceived work stress contributes to changes in adapt-abilities or orientations to happiness. Further research is needed examine the direction of these effects, as well if interventions focusing on increasing the orientations to happiness and adapt-abilities are successful. The reliability of the engagement orientation may appear low, but considering

that the reliability score is similar to that found by others (Ruch et al., 2010), that the scale only has three items and that the sample size is large, we are confident that this has not jeopardized our results. Empirical studies of adapt-abilities do seem to support the theoretical conceptualization of adapt-abilities as a psychosocial variable involved in self-regulation (Rossier et al., 2012). But of course the question remains if adapt-abilities will show the same effects in relation to other work and non-related outcomes. This same question applies to orientations to happiness.

## 5. Conclusion

The literature on career adapt-abilities is growing and thus it is necessary to have tools available in different languages. The conceptual structure of career adaptability with concern, control, curiosity and confidence is replicable in German-speaking contexts. This research made the novel contribution of applying for the first time the concepts of adapt-abilities and orientations to happiness to the topic of stress at work. Adapt-abilities represent an important intervening variable between happiness orientations and work stress, suggesting that this mechanism is important for the translation of dispositions into behavior. Furthermore, this study provides evidence for the pertinence of positive psychology concepts such as orientations to happiness in the work environment. The different orientations of engagement, pleasure and meaning have different implications for work stress.

## IV. The role of career adaptability and work conditions on general and professional well-being

Reproduction of the following article:

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Abstract

This study, conducted with a representative sample of employed and unemployed adults living in Switzerland ($N$ = 2,002), focuses on work conditions (in terms of professional insecurity and job demands), career adaptability, and professional and general well-being. Analyses of covariance highlighted that both unemployed and employed participants with low job insecurity reported higher scores on career adaptability and several dimensions (notably on control) than employed participants with high job insecurity. Moreover, structural equation modeling for employed participants showed that, independent of work conditions, adaptability resources were positively associated both with general and professional well-being. As expected professional outcomes were strongly related to job strain and professional insecurity, emphasizing the central role of the work environment. Finally, career adaptability partially mediated the relationship between job strain and professional insecurity, and the outcome well-being.

Keywords: Career adaptability, professional insecurity, job strain, professional well-being, general well-being

## 1. Introduction

Several recent studies have examined the impact of the work situation, in terms of job insecurity and/or job strain, on professional well-being (e.g., Bakker, Demerouti, de Boer, & Schaufeli, 2003; Bosman, Rothmann, & Buitendach, 2005). However, the role and the impact of career adaptability resources (Savickas, 1997, 2005) in this process were not previously analyzed. Consequently, the main purposes of the current study were: (i) to evaluate the impact of job insecurity (past and future) and unemployment on career adaptability and well-being-related outcomes, and (ii) to investigate –within employed individuals– the relationships between career adaptability, professional insecurity and job strain and their effects on professional (i.e., job satisfaction and work-related stress) and general well-being (i.e., satisfaction with life and general health).

### 1.1. Labor market evolution and current context

Today's career and professional landscape is characterized by increasing instability and demands related to productivity, adaptation skills, flexibility and coping with constant uncertainty, fear of being laid off, and difficulties in finding a new and/or adequate job (Kalleberg, 2009; Rudisill, Edwards, Hershberger, Jadwin, & McKee, 2010). As a result of augmented organizational restructuring, downsizing or mergers, both job insecurity and the numbers of transitions throughout the working life have increased (Coetzee & de Villiers, 2010; Rudisill et al., 2010; Savickas, 2005). In other words, in this professional context employees can expect to more frequently encounter the risk of loosing one's job (Fouad & Bynner, 2008) and hence, periods of unemployment (or partial-unemployment). Hence, individuals have an increased necessity to develop and manage their own career paths and the possibility for increased job strain (Rudisill et al., 2010). As defined by the Demand-Control Model (Karasek, 1979), job-related strain results from a combination of low job control or decision latitude and a high level of psychological job demands. Several studies (e.g. Bakker

et al., 2003) reported that job resources and control (such as job autonomy) are associated with job involvement and professional satisfaction, whereas job demands influence burnout, health complaints and emotional exhaustion.

Unfavorable conditions at work and employment situations (such as unemployment, underemployment or employment instability) can have negative repercussions on the individuals' personal and professional development, and quality of life (DeFrank & Ivencevich, 1998; Klehe, Zikic, Van Vianen, & De Pater, 2011). Job loss and unemployment are frequently considered as major life stressors (Price, 1992) and their negative effect on well-being, individual functioning and general health is widely documented (e.g., McKee-Ryan, Song, Wanberg & Kinicki, 2005; Wanberg, 2012). In fact, several studies observed increased depressive symptoms, anxiety, social isolation, somatic complaints and lower self-esteem and perceived quality of life for unemployed workers and their families (e.g., McKee-Ryan et al., 2005). Compared to the employed, a number of studies showed that the unemployed reported diminished general well-being in terms of lower life satisfaction and self-esteem and increased anxiety and psychosomatic symptoms (e.g. Körner, Reitzle, & Silbereisen; 2012). However, Körner and colleagues (2012) point out that currently employed and unemployed individuals face similar labor market-related demands, such as difficulties in finding a new and/or appropriate job, career planning, and a lack of security in career paths. Moreover, the current profile of the employed is very heterogeneous, for example in terms of work activity rate (part-time vs. full-time), underemployment, type of contract (permanent vs. non-permanent), or job security. As a consequence of the growth of non-permanent employment contracts or underemployment situations, the work and career experience –with reference to expectation, career prediction and job security– is more and more varied (Coetzee et al., 2010). According to DeWitte (2005a, p. 1), job insecurity is "the perceived threat of job loss and the worries related to that threat" and involves a lack of certainty about

the future. Job insecurity, which is considered as one of the most common sources of job stress, affects several indicators of health and both professional and general well-being (e.g., Hellgren & Sverke, 2003; Rosenblatt, Talmud, & Ruvio, 1999). In this regard, similar to unemployment, recent studies highlighted that perceived job insecurity during employment has comparable negative psychological effects (see DeWitte, 2005a).

In this professional environment that is marked by high job insecurity, career and personal resources –such as regulation skills, adaptability and self-awareness– are essential to face continuously changing environments and to respond to new and frequent demands (Hall & Chandler, 2005). Individuals need to have skills that allow them to quickly adapt to a variety of situations and changes (Savickas et al., 2009), such as job-loss.

1.2. Career construction theory and career adaptability

The Career Construction Theory (CCT) of Mark Savickas (1997, 2005) presents a model for comprehending vocational behavior across life cycles. CCT incorporates and updates previous theoretical contributions and frameworks, such as Super's (1957, 1990), or Holland's (1997) concepts and presents three majors components: Vocational personality, life themes and career adaptability (that addresses the coping processes). So, the career adaptability represents the "how" of vocational behavior ("how an individual constructs a career") (Savickas, 2005). Given the dynamic nature of individuals and their contexts, peoples' adaptability is relative to the person–environment relationship and is in varying states of activation (Savickas & Porfeli, 2012). Savickas and colleagues (Savickas, 1997, 2005; Savickas & Porfeli, 2012) define career adaptability as the "individual's resources for coping with current and anticipated tasks, transitions and traumas in their occupational roles that, to some degree large or small, alter their social integration" (Savickas & Porfeli, 2012, p. 662). Career adaptability is a hierarchical construct comprised of four global dimensions of resources called adapt-abilities, i.e.: concern, control, curiosity and confidence. *Concern*

consists of the ability to be aware of and to plan for a vocational future. *Control* reflects the perceived personal control over the vocational future and the belief about personal responsibility for constructing one's career. *Curiosity* reflects the tendency to explore one's environment, for example by exploring possible-selves and future scenarios. Finally, *confidence* is the self-confidence in one's ability to face and to solve concrete vocational and career problems (for example by learning new skills) (Savickas et al., 2012). These psychosocial resources are considered by Savickas (2005) as self-regulation capacities or skills that a person may draw upon to face and solve everyday life challenges. They help to form the strategies that individuals use to direct their adaptive behaviors ("adapting responses").

As an important set of individual resources, career adapt-abilities influence several work or career related variables and outcomes to various extents, such as work engagement, job satisfaction, career anxiety, successful job transitions, work-stress, or job tenure (e.g., Brown, Bimrose, Barnes, & Hughes, 2012; Rossier et al., 2012). Moreover, the relationship between personality dispositions and several work-related attitudes (such as work engagement) seems to be partly mediated by career adapt-abilities (e.g., Rossier et al., 2012). Recent studies bring to light the positive relationship to quality of life and self-esteem (e.g., Soresi, Nota, & Ferrari, 2012; van Vianen, Klehe, Koen and Dries, 2012). Regarding the employment situation, in Duarte, Soares, Fraga, Rafael, Lima, Paredes and colleagues' study (2012), compared to employed individuals, unemployed reported higher scores on concern, control and curiosity dimensions. As argued by Zikic and Klehe (2006), job loss (and unemployment) as a life event is simultaneously stressful but may also trigger the use of adapt-abilities. During the job search process unemployed individuals have to activate and use a range of behaviors to face and cope with their current situation. In other words, they have to be active agents, by –amongst others– exploring professional opportunities, reflecting

and career planning. Finally, Fugate, Kinicki and Ashford (2004) stressed the central role played by Savickas' adaptability for individuals' employability, conceptualized as enhancing movement between jobs, and increasing the possibility of reemployment (McArdle, Waters, Briscoe, & Hall, 2007). In fact, employability was positively related to job search and reemployment six months later (McArdle, et al., 2007; McKee-Ryan et al., 2005). To conclude, career adaptability is a relatively recent concept and the research presented above highlights on the one hand, the usefulness of applying this concept in various employment situations and for understanding professional and general well-being. On the other hand, it is relevant to further study its roles and dynamic states of activation in relation to workers' situations (e.g., in terms of professional insecurity).

Based on the considerations emerging from the current literature presented above, we expected a negative relationship between job insecurity and both career adaptability and well-being. Furthermore, we assume an effect of career adaptability –independent of the relationship with professional insecurity and job strain– on workers' general and professional well-being. Finally, we expected to observe a mediation effect of career adaptability on the relationship between professional situation (in terms of job insecurity and job strain) and workers' well-being (both general and professional).

## 2. Method

### 2.1. Participants

Our representative sample consisted of employed and unemployed adults living in Switzerland and included 2'002 respondents from the French and German parts of Switzerland. The mean age was 41.99 (*SD* = 8.61), 1'033 participants were women (51.6%), and 1'070 were married or were living with a significant other (56.5%). Most participants had a Swiss citizenship (*n* = 1'662, 83.0%), and 1'268 participants were German speakers (63.9%). Regarding the professional situation, 1'884 participants were employed (94.1%) and

118 were unemployed (5.9%). The subgroup of employed individuals ($M_{age}$ = 42.01, *SD* = 8.60) consisted of 960 women (51.0%) and 1'070 were married or were living with a significant other (56.8%). Furthermore, 1'581 employed participants were Swiss (83.9%) and 1'204 were German speakers (63.9%). Within the employed subgroup, 1'247 participants had a full-time job (i.e., activity rate equal to or greater than 90%) (61.1%) while 372 worked at an activity rate equal to or below 60% (19.5%). Moreover, 266 employed participants indicated that, in the course of the last year, they faced at least once the risk of lay-off (13.3%). Concerning the future job insecurity, 160 individuals reported a fear (somewhat or often) of loosing their current job (lay-off) in the next year (8.5%). The subgroup of unemployed individuals ($M_{age}$ = 41.54, *SD* = 8.65) included 73 women (61.9%), and 56 participants were married or were living with a significant other (47.5%). As for nationality and language, 81 were Swiss (68.6%) and 64 German speakers (54.2%). Of the unemployed participants, 67 were looking for a full-time job (100% activity rate) (56.8%) and 38 for a job at an activity equal to or below 60% (32.2%). 54 individuals had been unemployed for 6 months or more (45.8%). Comparing employed and unemployed subgroups, the proportion of men and women ($\chi^2(1) = 5.29$, $p = .021$), of Swiss and non-Swiss ($\chi^2(1) = 18.37$, $p = .000$) and of German and French speakers ($\chi^2(1) = 4.47$, $p = .039$) were statistically different. In fact, within the unemployed subgroup the proportion of women, non-Swiss and French speakers was higher. This pattern corresponds to the current situation in the Swiss labor market. However the associated effect sizes were quite negligible (respectively $d = .10$, $d = .19$ and $d = .09$). Finally, there were no age differences between employed and unemployed participants, $t(2000) = 0.58$, $p > .05$.

2.2. Procedure

Data presented in this paper were part of the first data collection conducted from January to April 2012 of the 8-year longitudinal survey on professional trajectories (Maggiori, in

press) of the Swiss National Centre of Competence in Research "Overcoming Vulnerabilities: Life Course Perspective". More specifically in this article we used participants recruited on the base of a representative sample (26-56 years) drawn from the National register of the inhabitants and realized by the Swiss Federal Statistics Office (SFSO). When we consider the number of possible interviews and eligible individuals within the valid addresses, we can estimate the total participation rate at 48.6%. Participation in the study was voluntary and each participant completing the research protocol had the opportunity to choose a gift –from four options– for a total amount of 20 CHF. This research complied with the ethical rules of the Swiss Society for Psychology (SSP).

## 2.3. Measures

### 2.3.1. Career adaptability

Career adaptability was assessed using the Career Adapt-Abilities Scale Form 2.0 from Savickas and Porfeli (2012). The CAAS contains 24 items that yield a total score, which indicates a person's career adaptability. The items are divided equally into four subscales that measure the adapt-abilities resources of concern, control, curiosity, and confidence. A score for each of the four dimensions was calculated. All items were rated employing a scale from 1 (*Not strong*) to 5 (*Strongest*). The validated CAAS French (Johnston et al., 2013; Rossier et al., 2012) and German versions (Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013) showed alphas coefficients ranging from .75 to .86 for the French version, and from .86 to .88 for the German version. The reliabilities for the total scores were respectively .92 and .94.

### 2.3.2. Job strain

Job strain was measured with the Job Content Questionnaire (JCQ; Karasek, 1985). Two subscales from this questionnaire were used in the current study: psychological demands (5 items) and decision latitude (9 items). Each item was scored on a four-point rating scale (1 = *Strongly disagree*, 4 = *Strongly agree*). Internal reliabilities for psychological demands and

decision latitude were respectively, .73 and .81. A job strain score was calculated which represents a ratio term between psychological demands and decision latitude. Job demands are multiplied by 2, and then divided by decision latitude (Li, Yang, & Cho, 2006).

#### 2.3.3. Professional insecurity

To assess general professional security, we used two independent single-items developed for the purpose of this study. The first asked participants how many times they faced the risk of loosing their job in the course of the last year. The second item asked how they evaluate the risk of loosing the current job in the coming 12 months. The items were assessed respectively with five-point (1 = *Never*, 5 = *Constantly*) and four-point (1 = *Very low*, 4 = *Very high*) rating scales.

#### 2.3.4. Work stress

Work-related stress was measured with the nine-item General Work Stress Scale (GWSS; De Bruin & Taylor, 2005). The GWSS is a one-dimensional measure of the work-related level of stress and proposes a Likert scale ranking from 1 (*Never*) to 5 (*Always*). The internal reliability reported by the validation study was .92.

#### 2.3.5. Professional satisfaction

Professional satisfaction was assessed with six items from the JobSat Inventory of Rolland (1995, in Massoudi, 2009). The items were selected to cover different daily work domains (i.e., attitudes of the direct superior / boss, relationship with colleagues, salary, work conditions and professional security). Respondents indicated on a five-point scale their satisfaction with each work domain (1 = *Not satisfied at all* and 4 = *Very satisfied*). Exploratory factor analyses (with oblique rotation) confirmed the items were in a single dimension and its alpha coefficient in this study was .74.

### 2.3.6. Life satisfaction

Life satisfaction was measured with Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The five items assessed the individuals' overall judgment of satisfaction with their life as a whole. Each item was rated with a seven-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Regarding internal reliability, Pavot and Diener (1993) presented data emerging from six studies were coefficients ranged from .79 to .89.

### 2.3.7. General health

General health was measured using the 12-items version of the General Health Questionnaire (GHQ; Goldberg & Williams, 1988). This brief instrument was designed for assessing medical and psychiatric complaints. For each item participants evaluated their occurrence on a four-point response scale (i.e., *Better than usual*, *Same than usual*, *Less than usual*, and *Much less than usual*). This instrument has shown to be a reliable measure (e.g. Wang & Lin, 2011). As suggested by several authors, we used a modified dichotomous coding system (0-1-1-1), called the Goodchild and Duncan-Jones's method (CGHQ) (Goodchild & Duncan-Jones, 1985).

### 2.3.8. Demographic variables

Gender, age, nationality and language were used as control variables. Gender was coded 1 = male and 2 = female, age was measured with a fill-in-the-blank question as a continuous variable and nationality was coded 1 = Swiss and 2 = non-Swiss. Concerning nationality, double citizenship with Swiss nationality was categorized as Swiss and double citizenship without Swiss nationality was categorized as non-Swiss. Language was coded 1 = German and 2 = French. Furthermore, regarding unemployed people we measured the length of unemployment, in terms of months, using a continuous variable.

2.4. Analysis

All analyses were conducted using the Statistical Package for Social Sciences (IBM SPSS Statistics) version 19.0 (SPSS Inc., Chicago IL, USA) and AMOS version 19.0 (Arbuckle, 2010). Bivariate correlation analyses were conducted to assess the pattern of relationships between variables considered in this study. In addition to Pearson's coefficients ($r$), we used point-biserial correlations ($r_{pb}$) for discrete dichotomous variables (i.e., gender, nationality and language). The effects of professional insecurity and unemployment on career adaptability and well-being were explored with a series of analyses of covariance (ANCOVA). The partial eta squared (partial $\eta^2$) was calculated to estimate the magnitude of these effects. Furthermore, to verify that coefficients were not biased by differences in sub-sample sizes, we re-ran all ANCOVA analyses generating 95% confidence intervals (CI), based on 1'000 bootstrap samples. In order to explore the impact of work environment security, job strain and adapt-abilities resources on professional and personal well-being latent variables, for the employed group, we used structural equation modeling. Maximum-likelihood (ML) estimation method was used to examine the fit of the model. Following the recommendation by Kline (2010) several fit indices were considered to evaluate the model fit. More specifically the $\chi^2$ per degree of freedom ($\chi^2$/df ratio), the goodness of fit index (GFI), the comparative fit index (CFI) and the Tucker-Lewis index (TLI). A model is considered to have a reasonable fit if the normed chi-squares ($\chi^2$/df) is equal to or below 5 (Bollen, 1989), the CFI value is about .90 and, GFI and TLI values are about .95 or higher (Hu & Bentler, 1999). A RMSEA higher than .08 would suggest possible errors of approximation in the population and a value below .05 a good fit (Browne & Cudeck, 1992). Finally, a mediation analysis (with 1'000 bootstrap samples and CI of 95%) using structural equation modeling was conducted to analyze the possible indirect effect of work environment security and job strain on professional and general well-being through career adaptability.

## 3. Results

### 3.1. Descriptives, reliabilities, and correlations

The internal reliabilities based on the total sample ($N$ = 2'002), expect for JCQ job strain ($\alpha$ = .76) and JobSat ($\alpha$ = .74), were all above .85. The results were similar for the two languages. As can be seen from Table 1, regarding the relations between demographic characteristics and the other analyzed variables although results highlighted several significant correlations, overall –with the exception of the relation between the language and work stress (French speaker reported more stress at work)– these association were negligible. However, due the statistical impact of age, nationality and language, these were controlled for in further analyses. Finally, job strain correlated positively with both future and past professional insecurity and negatively with all career adaptability dimensions and the total score.

Table 1. Means, Standard Deviations, Reliabilities and Correlations

| | | *M* | *SD* | 1. | | 2. | | 3. | | 4. | | 5. | | 6. | | 7. | | 8. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Age[1] | 41.99 | 8.61 | – | | | | | | | | | | | | | | | |
| 2. | Gender[1] | 1.52 | 0.50 | -.02 | | – | | | | | | | | | | | | | |
| 3. | Nationality[1] | 1.17 | 0.38 | -.11 | *** | .00 | | – | | | | | | | | | | | |
| 4. | Language[1] | 1.37 | 0.48 | -.01 | | .03 | | -.02 | | – | | | | | | | | | |
| 5. | Past job insecurity[2] | 1.21 | 0.59 | -.02 | | .03 | | .07 | ** | -.01 | | – | | | | | | | |
| 6. | Future job insecurity[2] | 1.59 | 0.71 | .02 | | .01 | | .09 | *** | .03 | | .44 | *** | – | | | | | |
| 7. | CAAS – Concern [1] | 3.53 | 0.66 | -.06 | ** | -.03 | | .05 | * | .01 | | -.04 | | -.13 | *** | (.88) | | | |
| 8. | CAAS – Control [1] | 3.94 | 0.61 | .06 | ** | -.01 | | -.01 | | -.04 | | -.07 | * | -.15 | *** | .58 | *** | (.86) | |
| 9. | CAAS – Curiosity[1] | 3.65 | 0.63 | .06 | ** | .01 | | .02 | | .05 | * | -.01 | | -.09 | *** | .60 | *** | .63 | *** |
| 10. | CAAS – Confidence[1] | 3.89 | 0.59 | -.01 | | -.01 | | .05 | * | -.06 | * | -.05 | * | -.13 | *** | .58 | *** | .72 | *** |
| 11. | CAAS – Adaptability[1] | 3.57 | 0.53 | .01 | | -.01 | | .03 | | -.01 | | -.05 | * | -.15 | *** | .82 | *** | .86 | *** |
| 12. | JCQ – Job Strain[2] | 0.87 | 0.23 | -.08 | *** | .06 | * | .05 | * | -.06 | * | .15 | *** | .17 | *** | -16 | *** | -.18 | *** |
| 13. | SWLS[1] | 5.21 | 1.15 | .05 | * | .02 | | -.08 | *** | .02 | | -.18 | *** | -.23 | *** | .32 | *** | .35 | *** |
| 14. | GHQ-12[1] | 0.70 | 0.19 | -.03 | | .03 | | -.01 | | .07 | ** | .11 | *** | .17 | *** | -.20 | *** | -.30 | *** |
| 15. | JobSat[2] | 3.21 | 0.44 | .05 | * | .00 | | -.07 | ** | -.01 | | -.27 | *** | -.42 | *** | .17 | *** | .25 | *** |
| 16. | GWSS[2] | 1.87 | 0.58 | -.01 | | -.03 | | .02 | | .14 | *** | .15 | *** | .23 | *** | -.13 | *** | -.20 | *** |

| | | 9. | | 10. | | 11. | | 12. | | 13. | | 14. | | 15. | | 16. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9. | CAAS – Curiosity[1] | (.87) | | | | | | | | | | | | | | | | | |
| 10. | CAAS – Confidence[1] | .68 | *** | (.88) | | | | | | | | | | | | | | | |
| 11. | CAAS – Adaptability[1] | .85 | *** | .87 | *** | (.95) | | | | | | | | | | | | | |
| 12. | JCQ – Job Strain[2] | -.13 | *** | -.13 | *** | -.17 | *** | (.76) | | | | | | | | | | | |
| 13. | SWLS[1] | .23 | *** | .26 | *** | .35 | *** | -.29 | *** | (.89) | | | | | | | | | |
| 14. | GHQ-12[1] | -.22 | *** | -.26 | *** | -.28 | *** | .20 | *** | -.39 | *** | (.89) | | | | | | | |
| 15. | JobSat[2] | .13 | *** | .18 | *** | .21 | *** | -39 | *** | .38 | *** | -.27 | *** | (.74) | | | | | |
| 16. | GWSS[2] | -.09 | *** | -.16 | *** | -.17 | *** | .31 | *** | -.29 | *** | .45 | *** | -.39 | *** | (.87) | | | |

*Note*. [1] $N = 2'002$ (total sample), [2] $n = 1'884$ (employed); * $p < .05$, ** $p < .01$, *** $p < .001$; Gender: 1 = Men, 2 = Women; Nationality: 1 = Swiss, 2 = No-Swiss, Language: 1 = German speaker, 2 = French Speaker; For Gender, Nationality and Language point-biserial correlations coefficients ($r_{pb}$) are reported. For Past and Future job insecurity scale scores are proposed. Alpha coefficients are on the diagonal in parentheses.

3.2. Job insecurity (and unemployment) and career resources

The first aim of this article was to evaluate the impact of job insecurity (past and future) and unemployment on career adaptability. Considering the distribution, for both past and future job insecurity we decided to aggregate data into two dichotomous variables (i.e., Low past job insecurity vs. High past job insecurity; Low future job insecurity vs. High future job insecurity). Regarding past job insecurity (the risk of being dismissed during the last year), to evaluate possible differences in relation to adapt-abilities resources between employed with low job insecurity ($n$ = 1'595), employed with high job insecurity ($n$ = 266) and unemployed participants ($n$ = 118), we realized a series of ANCOVAs (with Bonferroni post-hoc), controlling for age, nationality and language (see Table 2). Results indicated an impact of professional insecurity on all CAAS dimensions –except for curiosity– and the total score. However, these differences were associated with negligible effect sizes. More specifically, except for curiosity, employed individuals with low past job insecurity reported higher scores on all career adaptability dimensions and the total score than employed with high past job insecurity. Interestingly, unemployed participants indicated higher scores on control, confidence and the CAAS total score than the employed with high past job insecurity. Moreover, analyses highlighted no differences between the low past job insecurity employed and unemployed. When we checked results emerging from the 95% CI, except for a now significant difference between unemployed and low insecurity employed on the confidence dimension, overall the patterns of results –in terms of sub-groups differences– was similar to those indicated previously in relation to past job insecurity.

Regarding the fear of loosing one's job in the next 12 months, another series of one-way ANCOVAs was utilized to compare low future job insecurity ($n$ = 1'720), high future job insecurity ($n$ = 160) and unemployed individuals ($n$ = 118). Analyses highlighted a main effect of future job insecurity on all dimensions and the total score of the CAAS (see Table

3). Bonferroni comparison revealed that, compared to employed with higher future job insecurity, employed with lower future job insecurity and unemployed participants showed higher values on CAAS total score and concern and control dimensions. Moreover, unemployed participants reported a higher score on confidence and curiosity dimensions than employed with high future job insecurity. As observed in relation to past job insecurity, analyses highlighted no significant differences between employed with low future job insecurity and unemployed individuals. The generated 95% CIs based on 1'000 bootstrap samples globally confirmed the pattern of results expect for the confidence dimension. In fact, these analyses highlighted a statistically significant difference between on the one side, high and low future insecurity employed, and on the other side between unemployed and lower future insecurity employed.

Table 2. Effect of Past Job Insecurity on CAAS and Well-being (Controlling for Age, Nationality and Language)

| | Past low insecurity | Past high insecurity | Unemployed | | | |
|---|---|---|---|---|---|---|
| | *M (SD)* | *M (SD)* | *M (SD)* | *F* | *p* | *partial* $\eta^2$ |
| Adaptability[1] | 3.76 (0.51) | 3.67 (0.51) | 3.84 (0.54) | 4.53 | .011 | .01 |
| Concern [1] | 3.54 (0.65) | 3.44 (0.71) | 3.58 (0.68) | 3.50 | .030 | <.01 |
| Control [1] | 3.96 (0.60) | 3.82 (0.63) | 3.99 (0.63) | 6.52 | .001 | .01 |
| Curiosity [1] | 3.65 (0.62) | 3.64 (0.67) | 3.75 (0.68) | 1.11 | ns. | <.01 |
| Confidence [1] | 3.90 (0.58) | 3.81 (0.66) | 4.02 (0.59) | 5.87 | .003 | .01 |
| SWLS [1] | 5.36 (1.03) | 4.75 (1.27) | 4.22 (1.51) | 80.03 | <.001 | .08 |
| GHQ-12 [1] | 0.68 (0.19) | 0.74 (0.20) | 0.75 (0.20) | 14.42 | <.001 | .02 |
| GWSS [2] | 1.83 (0.57) | 2.10 (0.63) | - | 49.73 | <.001 | .03 |
| JobSat [2] | 3.26 (0.42) | 2.92 (0.44) | - | 146.87 | <.001 | .07 |

Note: [1] $N = 2'002$ (total sample), [2] $n = 1'884$ (employed).

Table 3. Effect of Future Job Insecurity on CAAS and Well-being (Controlling for Age, Nationality and Language)

| | Future low insecurity | Future high insecurity | Unemployed | | | |
|---|---|---|---|---|---|---|
| | *M (SD)* | *M (SD)* | *M (SD)* | *F* | *p* | *partial* $\eta^2$ |
| Adaptability[1] | 3.76 (0.52) | 3.62 (0.56) | 3.84 (0.54) | 6.87 | .001 | .01 |
| Concern [1] | 3.54 (0.65) | 3.36 (0.68) | 3.58 (0.68) | 6.24 | .002 | .01 |
| Control [1] | 3.95 (0.60) | 3.76 (0.65) | 3.99 (0.63) | 7.28 | .001 | .01 |
| Curiosity [1] | 3.65 (0.62) | 3.56 (0.67) | 3.75 (0.68) | 3.15 | .043 | <.01 |
| Confidence [1] | 3.89 (0.58) | 3.78 (0.61) | 4.02 (0.59) | 5.08 | .006 | .01 |
| SWLS [1] | 5.33 (1.05) | 4.68 (1.28) | 4.22 (1.51) | 71.69 | <.001 | .07 |
| GHQ-12 [1] | 0.68 (0.19) | 0.77 (0.19) | 0.75 (0.20) | 18.74 | <.001 | .02 |
| GWSS [2] | 1.84 (0.56) | 2.17 (0.70) | - | 41.59 | <.001 | .02 |
| JobSat [2] | 3.26 (0.41) | 2.76 (0.43) | - | 208.44 | .000 | .10 |

Note: [1] $N$ = 2'002 (total sample), [2] $n$ = 1'884 (employed)

To further explore the impact of unemployment on the career adaptability resources, in a more exploratory way –considering the limited size of the unemployed sub-sample– we conducted a series of ANCOVAs (with Bonferroni correction for the post hoc comparisons), controlling for age and language (that were correlated with the length of unemployment, respectively, $r$ = .26 and $r$ = -.22) (see Table 4). Based on the length of unemployment at the time of the data collection, unemployed participants were divided into three subgroups, i.e.: (i) Less than 3 months of unemployment ($n$ = 34); (ii) 4-10 months of unemployment ($n$ = 30); (3) 11 months or more of unemployment ($n$ = 36). Results emphasized a significant effect of the length of unemployment on all CAAS dimensions –except for the confidence dimension– and the total resources. Post-hoc analysis indicated that, compared to the 0-3 month group, the 4-10 month group reported a higher score on the CAAS total score and concern, control and curiosity dimensions. Regarding the other comparisons (0-3 month vs. 11 month or more, and 4-10 month vs. 11 month or more) results showed no differences.

Table 4. Length of Unemployment and Adapt-abilities (Controlling for Age and Language)

| | 0-3 months[1] | 4-10 months[2] | 11 months or more[3] | | | |
|---|---|---|---|---|---|---|
| | *M (SD)* | *M (SD)* | *M (SD)* | *F* | *p* | *partial* $\eta^2$ |
| Adaptability | 3.61 (0.56) | 4.03 (0.58) | 3.84 (0.49) | 4.14 | .019 | .09 |
| Concern | 3.42 (0.72) | 3.83 (0.71) | 3.44 (0.61) | 3.55 | .033 | .07 |
| Control | 3.74 (0.72) | 4.18 (0.58) | 4.05 (0.59) | 3.20 | .046 | .07 |
| Curiosity | 3.47 (0.70) | 3.94 (0.72) | 3.82 (0.66) | 3.65 | .030 | .08 |
| Confidence | 3.80 (0.57) | 4.17 (0.64) | 4.06 (0.54) | 2.52 | .086 | .05 |

*Note*. [1] $n$ = 36; [2] $n$ = 33; [3] $n$ = 38

3.3. Job insecurity (and unemployment) and well-being

We conducted a series of one-way independent group ANCOVAs to evaluate the impact of past job insecurity and unemployment (low past job insecurity vs. high past job insecurity vs. unemployed) on general well-being, controlling for demographic variables (i.e., age,

nationality, and language) (see Table 2). Analysis conducted on the total sample ($N$ = 2'002) showed a main effect of professional insecurity during the past year both on life satisfaction ($\eta^2$ = .08) and general health ($\eta^2$ = .02). Post-hoc analysis (with Bonferroni correction) indicated that, compared to employed with low past job insecurity, employed with high past job insecurity and unemployed reported lower satisfaction with life and more general health problems. Moreover, unemployed participants were less satisfied than high job insecurity participants. Furthermore, we compared employed participants in relation to professional well-being ($n$ = 1'884) (see Table 2). Job insecurity during the past year had a significant main effect on professional satisfaction ($\eta^2$ = .07) and work-related stress ($\eta^2$ = .03). More precisely, employed with a lower past job insecurity reported a higher job satisfaction and lower level of work-related stress. To conclude, results emerging from the 95% CI confirmed all of these results.

Afterward we repeated analyses to assess the possible effect of future job insecurity (in terms of fear of loosing job in the coming 12 months) and unemployment on general and professional well-being. The results from the ANCOVA on life satisfaction and general health (age, nationality and language controlled for), shown in Table 3, yielded a main effect for the independent variable ($\eta^2$ respectively .07 and .02). The Bonferroni comparisons emphasized that employed with low future job insecurity reported significantly greater satisfaction with life and less health problems than employed with high future job insecurity and unemployed participants. Furthermore, results showed that employed with high future job insecurity reported a greater score on life satisfaction than unemployed individuals. No difference was highlighted between these two sub-groups in relation to general health. Concerning professional well-being, ANCOVA analyses within employed participants revealed that individuals with low future job insecurity reported higher score on JobSat scale ($\eta^2$ = .10) and lower score on GWSS ($\eta^2$ = .02) compared to individuals with higher future job

insecurity. In other words, employed participants with lower future job insecurity were more satisfied at work and less stressed. Regarding 95% CIs, the patterns of results regarding general and professional well-being –in terms of sub-groups differences– were similar to those indicated previously.

3.4. Impact of job demands, career resources and job insecurity on well-being

The two proposed models –including career adapt-abilities, job strain and professional insecurity and well-being– were tested within employed participants ($n$ = 1'819) with SEM-analysis to assess the association of professional context, career resources and well-being. More specifically, in the first model we tested the effect on general well-being (satisfaction with life and general health) (see Figure 3 – left side). In the second model we analyzed the effect on professional well-being (job satisfaction and work stress) (see Figure 3, right side). For these analyses we reverse coded the general health and work stress scales. In this way their scores are coherent with the others variables, such that higher scores indicate a better general health and lower levels of perceived work-related stress.

Regarding general well-being, the goodness-of-fit indices showed that the proposed model did not fit adequately to the data. In fact, the GFI, the TLI and the CFI were equal or greater than .95, however the $\chi^2$/df value was higher than 5 and the RMSEA was .06. Inspection of the modifications indices greater than 10 revealed an association between three of the measurement errors for the indicators of the resources dimensions. We included these covariations in a adjusted model (see Figure 3 – left side). As seen in Table 5, this adjusted model showed satisfactory values for all the fit indices considered in this study. More specifically, $\chi^2$/df value was lower than 4.50, RMSEA was .04. and GFI, TLI and CFI scores ranked between .97 and .99. As in the previously proposed model, in the adjusted model all observed variables loaded significantly on the relevant latent variables. Concerning latent factors, job insecurity and job strain covaried positively and significantly and both were

negatively associated with career resources. Career resources had a direct positive effect on general well-being. On the contrary, job insecurity and job strain predicted negatively general well-being. It is interesting to note that, based on the standardized coefficients, career resources represented the most important predictor. Overall, the adjusted model explained 47% of the variance in general well-being.

As seen in Table 5, except for $\chi^2$/df value (> 5.00), the proposed model for professional well-being showed an adequate fit with the analyzed data. RMSEA value was .05 and GFI, TLI and CFI were above .95. Next, based on indications emerging from the modification indices we introduced in the adjusted model three additional covariances between career resources errors. Considering the several indices analyzed, the goodness-of-fit of this new model was more than satisfactory. Compared to the previous model, the $\chi^2$/df value decreased to 4.15. Furthermore, RMSEA value was .04 and GFI, TLI and CFI values ranked between .98 and .99. As in the general well-being adjusted model, career adaptability positively predicted professional well-being, while professional insecurity and job insecurity were negative predictors (see Figure 3, right side). Based on standardized coefficients, job insecurity was the most important predictor for professional well-being. Overall, the revised model explained 61% of the professional well-being variance.

Table 5. Structural Equation Models for General and Professional Well-being within Employed Participants

| | $\chi^2$ | df | $\chi^2$/df | *p* | GFI | CFI | TLI | RMSEA |
|---|---|---|---|---|---|---|---|---|
| *General well-being* | | | | | | | | |
| Proposed model | 146.12 | 22 | 6.54 | <.001 | .98 | .97 | .96 | .06 |
| Adjusted model | 84.46 | 19 | 4.44 | <.001 | .99 | .99 | .97 | .04 |
| Control model | 134.15 | 45 | 2.96 | <.001 | .99 | .98 | .96 | .03 |
| *Professional well-being* | | | | | | | | |
| Proposed model | 122.24 | 22 | 5.56 | <.001 | .98 | .98 | .97 | .05 |
| Adjusted model | 78.83 | 19 | 4.15 | <.001 | .99 | .99 | .98 | .04 |
| Control model | 120.29 | 46 | 2.51 | <.001 | .99 | .99 | .98 | .03 |

*Note*. n = 1’819. Covariance between items' error terms associated with a modification index equal to or above 10 were taken into account in the adjusted and control models; GFI=goodness of fit index; CFI=comparative fit index; TLI=Tucker–Lewis Index; RMSEA=root mean square error of approximation. Control mode: We controlled for age, nationality, gender and language.

Furthermore, following the example of a procedure used by Bakker et al. (2003), to control for the possible effect of demographic variables, based on the correlations discussed previously (see Table 1), we introduced significant relationships in the adjusted models for general and professional well-being (i.e., the significant correlations between demographic variables and model variables). The control models for general and professional well-being – including demographic variables– did not modify the structural relationships and the model fit indices stayed satisfactory. This indicates that demographic variables (i.e., age, gender and nationality) did not have an influence on the analyzed relationships.

Finally, considering the direct effect of the work conditions variables, we adapted the two adjusted models presented above to assess possible mediation effects of the observed variable career adaptability resources (CAAS total score) on the relationship between job insecurity and job strain on the one hand, and general and professional well-being on the other hand (see Figure 4). Regarding the general well-being (see Figure 4, left side), analyses highlighted that career adaptability partially meditated the relationship between that

professional context and well-being outcomes. In fact both the indirect effects of job insecurity and job strain through career adaptability and their direct effects on general well-being were statistically significant ($p < .05$). With reference to the indirect effects, both job insecurity and job strain have a negative effect on career adaptability resources that are assumed to promote individuals' well-being. Compared to general well-being, analyses revealed a similar pattern of results for the professional well-being (see Figure 4, right side). In fact, job insecurity and job strain have both indirect –through career adaptability– and direct significant effects on professional outcomes. In other words, adaptability resources partially mediated the effect of work conditions on individuals' professional well-being.

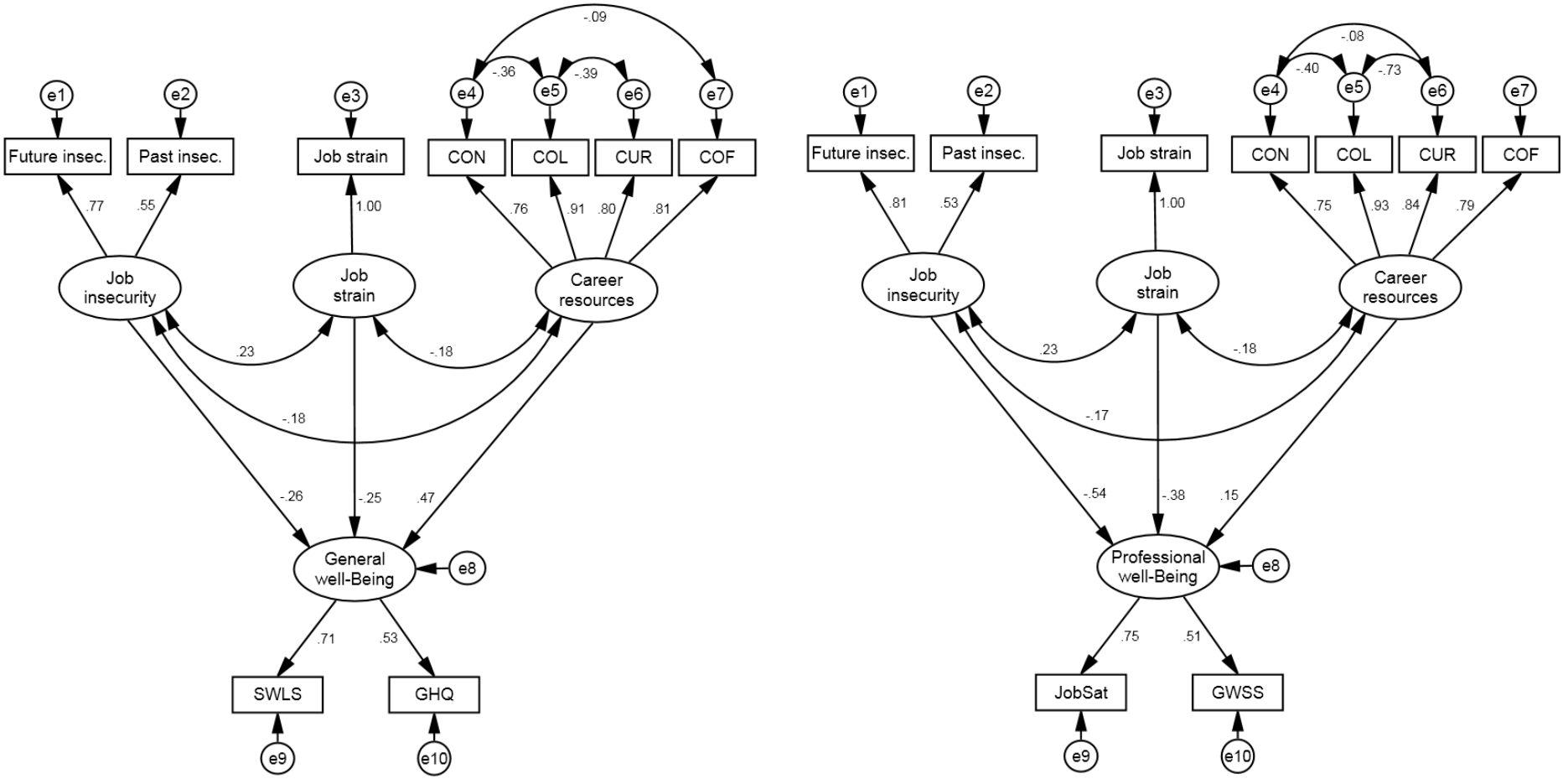


*Figure 3.* Structural equation model with standardized coefficients estimates of the Adjusted models for general well-being and professional well-being [CON = CAAS concern, COL = CAAS control, CUR = CAAS curiosity, COF = CAAS confidence, SWLS = Satisfaction With Life Scale, GHQ = General Health Questionnaire – 12, JobSat = JobSat questionnaire, GWSS = General Work Stress Scale].

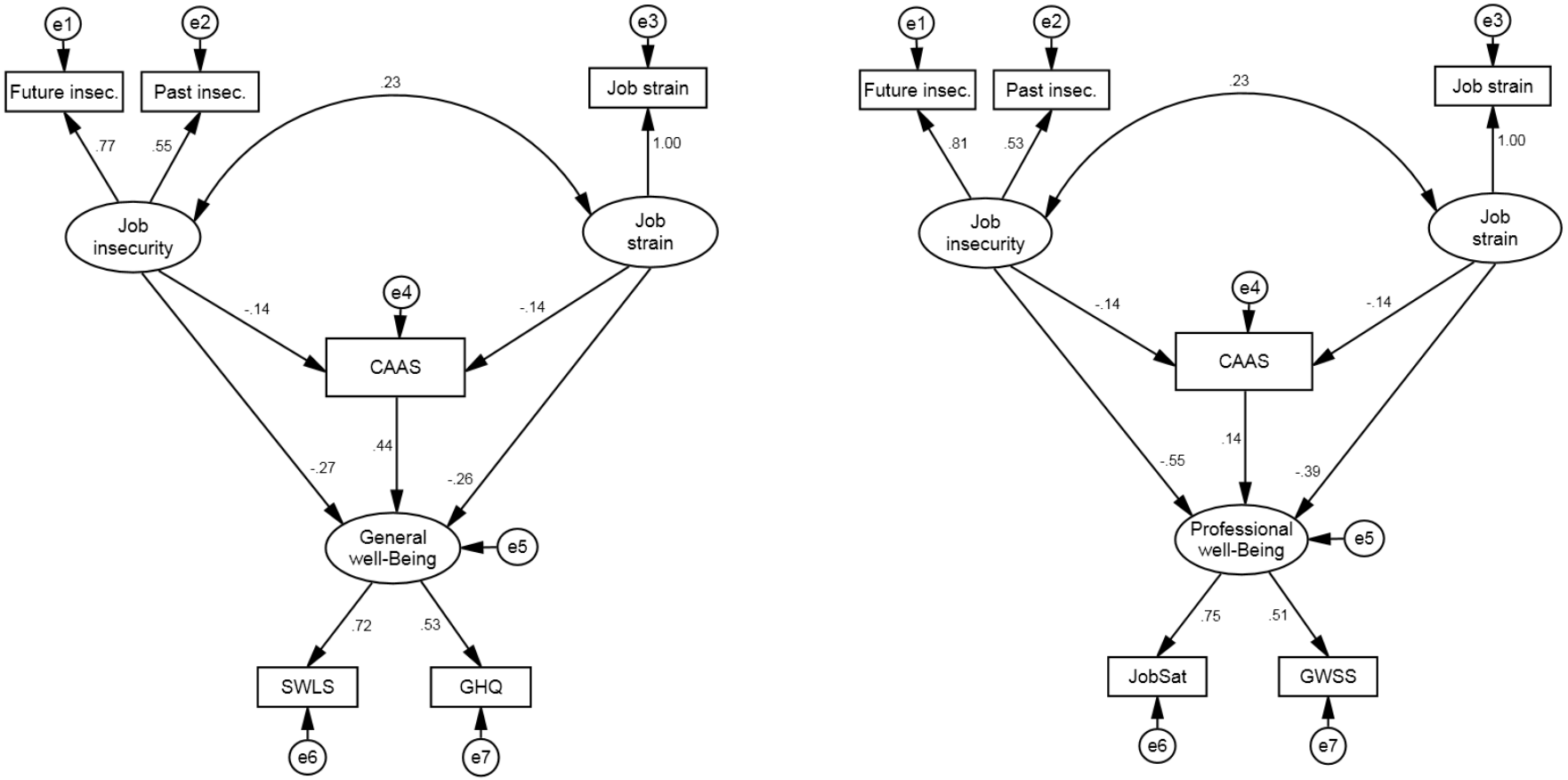


*Figure 4.* Mediation analyses using structural equation model with standardized coefficients estimates based on the adjusted models for general well-being and professional well-being [CAAS = CAAS total score, SWLS = Satisfaction With Life Scale, GHQ = General Health Questionnaire – 12, JobSat = JobSat questionnaire, GWSS = General Work Stress Scale]

## 4. Discussion

Considering the constantly changing and insecure professional context, workers need adaptability resources to face and manage professional demands and new career circumstances, such as working-time reduction, job-loss and finding reemployment (Fugate et al., 2004; Savickas et al., 2002). Based on a representative sample of employed and unemployed adults living in Switzerland, a first focus of this study was on the evaluation of the impact of job insecurity and unemployment both on career adaptability resources (as measured by the CAAS, Savickas & Porfeli, 2012) and well-being. Another focus was on the exploration of the relationships between career adaptability, professional insecurity and job strain and their repercussions on workers' general and professional well-being.

Regarding the first focus, analyses highlighted an impact of job insecurity (both past and future) and unemployment on career adaptability and their dimensions. Nevertheless, despite the statistically significant differences, the effects sizes seemed to indicate a moderate impact. Concerning the comparison between the employed and unemployed, these results are consistent with Duarte et al. (2012) study, which showed that unemployed participants reported higher scores on several adapt-abilities resources. However, with regard to employed individuals, Duarte and colleagues didn't consider the level of job security, which can provide a more detailed depiction of the professional situation and experience. In fact, when we observe the differences between the subgroups, our analyses revealed that, both unemployed individuals and employed with lower job insecurity reported higher values on the career adapt-abilities total score and several dimensions (notably on control) than employed with high job insecurity (both past and future perceived insecurity). In fact, individuals with a more insecure job situation reported less control over their vocational future. However, no differences was found between unemployed and employed with low insecurity. As proposed by Zikic and Klehe (2006), this pattern of results could partially be

explained by the fact that unemployed people have to (re)activate and upgrade some resources to manage and overcome their situation, due to the obligation of reemployment and the job search process. Furthermore, this interpretation seem to be supported by the differences –in terms of adapt-abilities resources– highlighted in relation to the length of unemployment. In fact, our data showed that after the first months of unemployment adapt-abilities resources increase and tend to remain stable. Nevertheless, it will be necessary to repeat analyses with a larger group of unemployed to confirm these tendencies. Globally, the entire pattern of results are coherent with Savickas' theory (1997, 2012) indicating that adapt-abilities resources are in varying states of activation (i.e., non-static structures), that can be triggered to face life and career challenges (such as professional transitions or work traumas) and are related to individuals' roles and contextual contingencies. However, the differences within employed people suggest that, on the one hand, greater adapt-abilities resources allow workers to find and/or stay in more stable professional situations. On the other hand, individuals in a more precarious situation face a more stressful and demanding professional context in which it is more difficult to activate and trigger the resources. Of course, further studies, notably based on a longitudinal perspective, will be necessary to test more adequately this assumption as to verify the stability and developmental trends of adapt-abilities resources of unemployed participants in the long-term and after a possible reemployment.

Concerning the well-being related outcomes, our results are coherent with previous research (e.g., Hellgren et al., 2003; Rosenblatt et al., 1999) and indicate differences both between employed and unemployed individuals, and within employed individuals in relation to the job security. In fact, the results presented in this article showed that both low and high job insecurity employed showed greater general well-being (as measured in terms of life satisfaction and general health) than unemployed individuals. However, it is also important to stress that, compared to high job insecurity individuals, employed individuals with a less

insecure professional situation reported greater life and professional satisfaction, less health complaints and lower work-related stress. Interestingly, this pattern of results was identical for both past and future job insecurity.

Concerning the second focus of this article, analyses conducted on the subsample of employed participants emphasized that career resources were negatively associated with professional insecurity and job strain. Furthermore, adapt-abilities resources positively predicted general and professional well-being latent variables, while job strain and job insecurity impacted negatively on reported well-being. These findings confirm previous studies (e.g., Brown et al., 2012; Rossier et al., 2012) showing a positive impact of career adaptability both on work-related outcomes and personal well-being even when including job strain and professional insecurity. More specifically, our models showed that career adapt-abilities had a stronger association with general well-being, of which it was the main predictor, while, as expected, work-related well-being was predicted mainly by professional insecurity and job strain. This last result is coherent with evidences highlighted by DeWitte (2005a) indicating that job insecurity has a larger impact on professional well-being than on general one. Moreover, and coherently with reference to the mediator effect observed between personal characteristics and several work-related outcomes (e.g. Johnston, Luciano, et al., 2013; Rossier et al., 2012), career adaptability partially mediated the effect of professional context (in terms of job insecurity and job strain) on general and professional well-being. Finally, to confirm the impact of career adaptability on individuals' well-being and their repercussions and roles in professional transitions (such as reemployment, as suggested by Fugate et al., 2004), and to assess context-related intra-individual variability, longitudinal data will be necessary.

The present study has, however, some limitations. First, job insecurity was assessed by two self-reported items provided at the same time as the other measures analyzed. Although

this procedure was used in several previous studies, as the other cross-sectional studies using self-report method, they are prone to possible common method bias and response bias. For this reason, it would be interesting to introduce some more objective information about employment security (such as, company downsizing intention) to compliment the self-evaluation. Furthermore, due to the data collection format and even though questions were kept as simple as possible, people needed sufficient knowledge of German or French to participate. This limitation is probably more important within unemployed individuals, where the rate of low skilled people is higher. Nevertheless, reaching less well-integrated people – for example due to language limitations– is a frequent problem in this kind of surveys (e.g. Laganà, Elcheroth, Penic, Kleiner, & Fasel, 2013).

To conclude, this study showed that firstly, the employment situation (in terms of job insecurity and unemployment) affected both career adapt-abilities resources and well-being-related outcomes. Hence, a simple comparison between employed and unemployed groups as homogenous entities is not adequate. It is important to identify and distinguish between more specific sub-groups in relation to professional characteristics, such as job insecurity or length of unemployment. In fact, unemployed individuals reported comparable career adaptability to employed individuals with low job insecurity and higher resources compared to employed with high job insecurity. Moreover, our analyses showed differences in well-being, not only between employed and unemployed individuals, but also within the employed people depending on their level of job security. Secondly, when we control for job strain and professional insecurity, career adaptability positively predicted workers' general and professional well-being. Furthermore, the relationship between professional context (in terms of job strain and professional insecurity) and individuals' well-being was partially mediated by adaptability resources. Finally, the different career adaptability and well-being trends in relation to the employment situation, seems to indicate that, on one hand adapt-abilities

resources react to environmental contingencies and can be (re)activated in a relatively short time. On the other hand a delayed positive effect of these resources is expected due to the more prominent effect of environmental factors (e.g., decreased income) on well-being during unemployment. This last consideration seems to be coherent with Lucas Clark, Georgellis and Diener's (2004) conclusions indicating that the unemployment experience can impact personal well-being in the medium- and long-term even after re-entering the labor market.

## V. Professional trajectories, individual characteristics and staying satisfied and healthy

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Abstract

Staying satisfied and healthy in the face of a complex and uncertain professional world is a priority for individuals. This paper examines the contribution of personality traits, career adaptability, and prior well-being as predictors of well-being over one year in four different professional trajectory groups; those who remained employed, those who experienced a professional change, those who moved from unemployment to employment, and those who remained unemployed. Results show meaningful differences between these groups in terms of well-being over one year; employed individuals have higher life satisfaction and self-rated health than unemployed individuals. Regaining employment contributes to improved well-being. Different professional situations correspond to varying levels of career adaptability suggesting it may be a precursor for career changes. Personality traits and career adaptability predict well-being over time, but the strongest predictor of future well-being is prior well-being. Results are discussed in light of career development, personality, and well-being theory.

Keywords: personality, career adaptability, life satisfaction, self-rated health, professional trajectories

## 1. Introduction

The professional world and labour market have changed drastically in recent years due to the emergence of new ways of working, a global economy, and financial crises (DeBell, 2006; Kalleberg, 2009). Possibilities for growth and skill acquisition exist, as does the increased possibility for layoffs, insecure, and temporary work (DeBell, 2006). Facing frequent career transitions, individuals need to display flexibility, adaptation, and the ability to cope with uncertainty (Kalleberg, 2009; Rudisill, Edwards, Hershberger, Jadwin, & McKee, 2010). These changes place the individual in the driver seat of his or her career, taking full responsibility for the development, management, and construction of their own careers (King, 2004). Practically, career practitioners can consider this new career reality so as to better equip individuals with skills and personal resources to successfully engage in career development (Rossier, 2015).

Career development is reflected in a series of choices that an individual makes throughout the life-span in relation to finding and maintaining a career and includes periods of stability and transition, and may also include periods of unemployment (Biemann, Zacher, & Feldman, 2012; Fouad & Bynner, 2008). In this paper, considering four different professional trajectories (for example individuals who remain employed, or those who move from unemployment to employment) provides four snapshots of career development.

Professional stability, transitions, and unemployment have consequences for well-being (e.g. Blustein, 2008; Paul & Moser, 2009). Life satisfaction, a central element of well-being, represents a cognitive evaluation of one's life (Diener, Lucas, & Scollon, 2006). Self-rated health, one's global evaluation of his or her health, is an important predictor of health outcomes (Jylhä, 2009) and correlates with other indicators of well-being (Benyamini, Leventhal, & Leventhal, 2004). Above and beyond the professional situation, undoubtedly individual characteristics may be resources or risk factors for well-being (Steel, Schmidt, &

Schultz, 2008). General characteristics, such as personality traits as defined by the Five Factor Model of Personality (McCrae & Costa, 1991) are related to outcomes such as subjective well-being, job satisfaction, and career satisfaction (Heller, Judge, & Watson, 2002; Steel et al., 2008). Work specific resources, such as career adaptability, contribute to professional and general well-being (Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013; Zacher, 2014a). This paper aims to consider the simultaneous ways that professional situations and individual factors, both general personality traits and specific career resources, contribute to well-being.

### 1.1. Professional changes, stability and staying well

Professional stability is found in continued employment, but can include organizational changes (Biemann et al., 2012). Transitions can be organizational, horizontal, or vertical (Chudzikowski, 2002) and individuals may transition into unemployment. Periods of professional stability or transition may be voluntary or involuntary (Fouad & Bynner, 2008) and vary in the degree to which they are influenced by external factors (Rudisill et al., 2010). Despite this complexity inherent in professional trajectories, clear associations to well-being exist. For example, continued employment is beneficial to well-being because work provides opportunities for need fulfilment, access to resources, and social interaction (Blustein, 2008). Alternatively, characteristics such as repetitive work, high psychological demands, low social support (Borg, Kristensen, & Burr, 2000), and incivilities (Krings, Johnston, Binggeli, & Maggiori, 2014) may contribute to reduced well-being. Unemployment corresponds to lowered well-being (Paul & Moser, 2009) which may be due to a lack of access to the functions of employment (e.g. time structure, social contact, and activity) as proposed in the latent deprivation model (Ervasti & Venetoklis, 2010; Jahoda, 1981).

Considering the research above, over one year, individuals who remain in stable employment are classified in this paper as the *no change active* group; individuals who remain employed but experience a change (i.e. change of employer, or a change of role while remaining with the same employer) are considered as *change active*; those who move from unemployment to employment are *unemployed-active;* and finally, the *unemployed-unemployed* are those who remain unemployed. Hypothesis 1 proposes that differences in self-rated health and life satisfaction should exist for the four different groups. Groups should also show different patterns of stability and change in life satisfaction and self-rated health over one year (hypothesis 2). More specifically, self-rated health and life satisfaction should improve between time 1 and time 2 for the *unemployed-active group,* as regaining employment is associated with improved well-being in general (Lucas, Clark, Georgellis, & Diener, 2004). Continued unemployment is associated with a decrease in well-being overall (Paul & Moser, 2009), thus the *unemployed-unemployed group* may show decreased life satisfaction and self-rated health. Life satisfaction and self-rated health are generally stable for most people (Bailis, Segall, & Chipperfield, 2003; Diener et al., 2006). When changes do occur, they are, in the case of self-rated health, as a result of health-related behaviours (Bailis et al., 2003) and changes in life satisfaction are as a result of severe events (e.g. widowhood, Lucas et al., 2004). Thus in the *no change active* and *change active* groups, no change in well-being over a one year period is expected. Although changes in work-related well-being (e.g. job satisfaction) accompany job changes (Boswell, Boudreau, & Tichy, 2005), changes in the more stable and general constructs of life satisfaction and self-rated health are less likely.

Models such as the latent deprivation model (Jahoda, 1981) are useful for explaining why employment is related to well-being and why unemployment worsens well-being. However, Creed and Evans (2002) found that personality traits explain variance in well-being

above and beyond the effects of the functions of employment. Thus, it seems necessary to consider how individual differences will be related to well-being. Top-down models of subjective well-being (Diener, Suh, Lucas, & Smith, 1999) suggest individual differences are important for explaining well-being, because not all individuals react to situations similarly, and thus individual differences in personality traits and specific career resources, may be important for well-being.

1.2. Career adaptability as a personal resource

Career adaptability has its origins in career construction theory and is defined as, " the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (Savickas, 1997, p. 254). With its four dimensions of concern, control, curiosity and confidence, career adaptability is as an important psychosocial coping resource, a set of self-regulation capacities or skills, relevant for career transitions, responding to unexpected events, constructing a career reality, and participating in the work role (Savickas 2005; Savickas & Porfeli, 2012).

Research on career adaptability suggests that it may rest at the intersection of the individual and the environment and is activated in response to the environment (McAdams & Pals, 2006; Rossier, Zecca, Stauffer, & Maggiori, & Dauwalder, 2012; Savickas, 1997). This would suggest that career adaptability is less stable than traits, more influenced by the environment, and involved in regulatory behaviour (Rossier, 2015). Research has shown that adaptability is crucial in the face of transitions (Guan et al., 2013; Koen, Klehe, Van Vianen, Zikic, & Nauta, 2010) and may be important for responses to unemployment (Duarte et al., 2012; Maggiori et al., 2013). For example, it predicts the use job search strategies which in turn relate to the quality of re-employment (Koen et al., 2010). Thus career adaptability seems to be an important resource for facing career transitions and challenging situations and

may be present to a different measure in the four professional groups. The *change active* and *unemployed-active* groups should show higher levels of adaptability than the groups who do not experience a change (hypothesis 3).

Additionally, research has shown career adaptability to be an important resource for both personal and professional well-being. It is positively related to psychological health, life and job satisfaction (Maggiori et al., 2013), and career satisfaction (Zacher, 2014a). Adaptability also mediates the relationships between, on the one hand, personal dispositions and job characteristics, and on the other hand general and professional well-being outcomes (Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013; Maggiori et al., 2013; Rossier et al., 2012). Based on this research, we expect career adaptability to be positively associated to life satisfaction and self-rated health over one year (hypothesis 4), thus extending the previous work that has focused on shorter time frames or work specific outcomes (e.g. Tolentino, Garcia, Lu, Restubog, Bordia, &, Plewa, 2014; Zacher, 2014a). By testing the contribution of adaptability to well-being in four different professional situations, we include the possibility that adaptability may function differently according to the situation because of its nature as a regulatory resource, sensitive to contextual influences.

### 1.3. Personality traits as resources and risk factors for well-being over time

Personality traits, in particular neuroticism and extraversion, are clear predictors of life satisfaction (e.g. Schimmack, Diener, & Oishi, 2002). Personality traits are related to life satisfaction because they partly determine the baseline of life satisfaction (Diener et al., 2006; Lucas et al., 2004) and also because they predispose individuals to certain life events which in turn are related to life satisfaction (Heller et al., 2002; Steel et al., 2008).

Personality is associated to self-rated health both in cross-sectional (Goodwin & Engstrom, 2002) and longitudinal studies with clear effects for neuroticism and extraversion (Svedberg, Bardage, Sandin, & Pedersen, 2006). Generally, neuroticism is negatively related

to well-being, whereas the other traits show positive associations (McCrae & Costa, 1991). Thus, in this study, neuroticism will be negatively related to life satisfaction and self-rated health; whereas extraversion, openness, agreeability, and conscientiousness will show positive associations to life satisfaction and self-rated health at time 2 (hypothesis 5). Importantly, after controlling for the effect of time 1 well-being, the effect of personality traits in predicting time 2 well-being (one year later) should be substantially reduced (hypothesis 6). This is because controlling for the time 1 outcome will account for the effect of stable individual dispositions (Boswell et al., 2005).

## 2. Method

### 2.1. Participants

A representative sample of the Swiss working population from the German and French speaking regions (aged between 26 and 56), including both employed and unemployed individuals, was obtained based on a sampling list drawn by the Swiss Federal Statistics Office (SFSO), with an oversample of unemployed participants targeted through the State Secretariat for Economic Affairs (SECO). Participants were provided with information on the Professional Trajectories project hosted by the Swiss National Centre of Competence in Research – LIVES and invited to participate. A completed research protocol was regarded as consent. Considering the structure of the random sampling lists obtained from the SFSO and the SECO and based on practical considerations the target sample for time 1 was 2,400 participants. This goal was reached as at time 1, an initial sample of 2,469 (49.3% male) employed and unemployed participants aged between 26 and 56 ($M_{age}$ = 42.5) was obtained. One year later, at time 2, all participants who started the research protocol at time 1 ($n$ = 2,956) were invited to participate in the study again. Of these 1, 944 participants (49.4% male) aged between 27 and 57 ($M_{age}$ = 43.5) responded, representing a response rate of

65.8%. Selecting only the participants who completed the protocol at both waves resulted in 1,702 participants (48.5% male) aged between 27 and 57 ($M_{age}$ = 43.4). The research protocol at time 2 was largely the same as time 1, except for the addition of some questions to track professional change and the substitution of some questionnaires based on the project's questionnaire rotation system. At both time points, participants received 20CHF (approximately 22 USD) as compensation.

For this paper, 56 participants who were not active in the labour market at time 2 (i.e. not employed, but also not actively looking for a job) were excluded; as were 26 participants who had become unemployed in the course of the last year; and 12 participants who had not provided sufficient information to be classified. The remaining 1,608 participants were further categorized into four different professional groups; *no change active* group (*n* = 1,041), *change active* group (*n* = 217), *unemployed-active* group (*n* = 189) and the *unemployed-unemployed* group (*n* = 161).

### 2.2. Measures

For all the scales, except for the German version of the career adaptability scale, the officially translated, internationally available versions were used. German-speaking psychologists translated the Career Adapt-Abilities Scale into German, and then the scale was back translated into English (see Johnston et al., 2013).

#### 2.2.1. Personality

Personality was measured using the NEO Five Factor Inventory Revised (NEO-FFI-R) (McCrae & Costa, 2004) which is an instrument based on the five factor model of personality that aims to capture differences in personality using five dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness. Questions were answered using a 5-point Likert-type scale (*1 = strongly disagree, 5 = strongly agree*). Across the four professional groups, all alpha values were acceptable and ranged between .79 and .84 for

neuroticism, .69 and .78 for extraversion, .68 and .78 for openness, .69 and .71 for agreeability, and .78 and .79 for conscientiousness.

2.2.2. Career adaptability

The Career Adapt-Abilities Scale (CAAS) (Savickas & Porfeli, 2012) that contains 24 items, yields a total score indicating a person's adaptability. The response format consists of 5 options with *1 = I don't have the ability to…/This is not a resource for me* and *5 = I have a very strong ability to…/ This is a very important resource for me*. Reliability of the scale in the four groups was between .93 and .95.

2.2.3. Life satisfaction

Life satisfaction was captured by the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Five items were assessed with a 7-point Likert-type scale (*1 = strongly disagree, 7 = strongly agree*). Reliabilities across the four groups were between .88 and .91 (time 1) and between .87 and .89 (time 2).

2.2.4. Self-rated health

A single item used in the World Health Organization Quality of Life (WHOQOL)-Group (e.g., WHOQOL-Skevington, Lotfy, & O'Connell, 2004) was used to assess self-rated health on a five point Likert-type scale (*1 = very bad to 5 = very good*). The item read, "How is your health in general?"

2.3. Analysis

Concerning the four professional groups, one way analyses of variances showed significant differences between the groups in terms of age ($F(3,1604) = 16.74$, $p < .001$) and income ($F(3,1556) = 55.04$ , $p < .001$). A chi-square test showed significant differences between the four groups relating to education, $\chi^2$ (3) = 24.82, $p < .001$, and non-significant differences for gender $\chi^2$ (3)= 2.94, $p = .401$. Thus, age, income and education were included in subsequent analyses as control variables. Correlation coefficients were computed to assess

the relationships between variables. Following this, a series of one-way analyses of covariance (ANCOVA) were conducted to examine group differences in life satisfaction, self-rated health, and career adaptability. A repeated measures ANCOVA gauged the changes in life satisfaction and self-rated health from time 1 to time 2. Hierarchical multiple regression analyses, repeated in the four professional groups, permitted the consideration of the effects of adaptability and personality (both from time 1) in predicting life satisfaction and self-rated health over time (time 2). Regression analyses were repeated separately for life satisfaction and self-rated health. Each model was set up as follows; step 1 contained control variables (age, income and education), step 2 contained career adaptability, step 3 the personality dimensions, and step 4 either life satisfaction or self-rated health measured at time 1.

Table 1. Correlation Coefficients Between Control Variables, Individual Characteristics and Well-Being Outcomes

| | | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Age | 42.58 | 8.50 | | | | | | | | | | | | | | |
| 2. | Gender | 1.51 | .50 | -.03 | | | | | | | | | | | | | |
| 3. | Language | 1.37 | .48 | -.02 | .03 | | | | | | | | | | | | |
| 4. | Education | 1.93 | .24 | -.02 | .03 | -.09** | | | | | | | | | | | |
| 5. | Income[a] | 102.12 | 40.56 | .10*** | .00 | -.08** | .25*** | | | | | | | | | | |
| 6. | N | 2.56 | .60 | -.12*** | .14*** | .15*** | -.09** | -.25** | (.83) | | | | | | | | |
| 7. | E | 3.42 | .48 | -.02 | .09** | .15*** | .05 | .09*** | -.33*** | (.75) | | | | | | | |
| 8. | O | 3.48 | .50 | .11*** | .15*** | .04 | .09** | .05* | .01 | .26*** | (.74) | | | | | | |
| 9. | A | 3.66 | .45 | .10*** | .19*** | .07** | -.03 | -.08** | -.12*** | .10*** | .16*** | (.71) | | | | | |
| 10. | C | 3.96 | .45 | .07** | .07** | .04 | .03 | .08** | -.34*** | .29*** | .07** | .16*** | (.79) | | | | |
| 11. | CAAS | 3.78 | .51 | .04 | .01 | .01 | .11*** | .13*** | -.36*** | .40*** | .34*** | .04 | .50*** | (.94) | | | |
| 12. | T1 SWLS | 5.15 | 1.18 | .06* | .05 | -.00 | .15*** | .38*** | -.49*** | .28*** | .06* | .01 | .23*** | .27*** | (.89) | | |
| 13. | T2 SWLS | 5.12 | 1.25 | .01 | .06 | -.01 | .14*** | .34*** | -.42*** | .22*** | .05* | .03 | .19*** | .23*** | .75*** | (.91) | |
| 14. | T1 SRH | 4.19 | .73 | -.07** | -.01 | -.05 | .14*** | .19*** | -.32*** | .17*** | .02 | .02 | .15*** | .15*** | .38*** | .36*** | |
| 15. | T2 SRH | 4.11 | .77 | -.11*** | -.01 | -.03 | .09** | .16*** | -.29*** | .18*** | -.00 | .02 | .12*** | .15*** | .35*** | .43*** | .65*** |

*Note.* [a] Income in thousands, reported in Swiss Francs
Age and income were measured as continuous variables. Language was coded as 1 = German, 2 = French. Gender was coded as 1 = men, 2 = women. Education was coded as 1 = Primary, 2 = Secondary/Tertiary. Point-biserial correlations were used for dichotomic variables. Alpha reliabilities are on the diagonal. CAAS = Career adaptability, SWLS = life satisfaction, SRH = self-rated health.
*$p < .05$, ** $p < .01$, ***$p < .001$.

## 3. Results

### 3.1. Correlations

Table 1 shows the correlation coefficients. Age was positively related to life satisfaction and negatively to self-rated health. Education showed small positive correlations with time 1 life satisfaction and self-rated health. Income was significantly and moderately positively related to both outcomes at both time points. The five personality dimensions showed the expected relationships with the outcomes; neuroticism was negatively related to life satisfaction and self-rated health; extraversion and conscientiousness were positively related to both outcomes; agreeability and openness were only positively related to life satisfaction. Finally, career adaptability was positively related to well-being.

### 3.2. Group differences in well-being and adaptability

ANCOVAs (controlling for age, education and income) to test for differences between the four professional groups were conducted for life satisfaction and self-rated health (at both time points) and adaptability (see Table 2). Post-hoc analyses, with bonferroni correction, were conducted to further explore differences between groups. Results showed significant differences between the four professional groups for life satisfaction, self-rated health, and adaptability, confirming hypothesis 1 and 3.

Post-hoc comparisons revealed that for time 1 and 2 life satisfaction, the *change active* and *no change active* groups were both significantly different from the *unemployed-active* and *unemployed-unemployed* groups. The *no change* group showed the highest level of life satisfaction, whereas the *unemployed-unemployed* group had the lowest level. In addition, for time 2 life satisfaction, the *unemployed-unemployed* group reported significantly lower life satisfaction than the *unemployed-active* group. Concerning self-rated health at time 1, the *change active* group was significantly different from the *unemployed-active* and *unemployed-unemployed* groups. At time 2, self-rated health was lower for the *unemployed-unemployed*

group in comparison to both the *no change active* and *change active* groups who had the highest self-rated health. In addition, the *unemployed-active* group reported lower self-rated health than the *no change active* group. Considering adaptability differences, the *no change active* group had lower levels of adaptability than both the *unemployed-active* and *unemployed-unemployed* groups.

Although not hypothesized, ANCOVA analyses revealed group differences in relation to personality. For neuroticism, the *unemployed-unemployed* group reported higher neuroticism levels in comparison to the *no change active* group. Considering openness, the *no change active* group had lower scores in relation to the *unemployed-active* group, although this difference is associated with a significance level of $p = .063$. Finally, the *change active* and the *no change active* groups both had lower levels of conscientiousness when compared to the *unemployed-unemployed* group.

Table 2. One-Way Analysis of Covariance Showing Differences Between the Four Professional Groups

| | No Change Active | Change Active | Unemployed-Active | Unemployed-Unemployed | | | |
|---|---|---|---|---|---|---|---|
| | *Mean (SD)* | *Mean (SD)* | *Mean (SD)* | *Mean (SD)* | *F* | *p* | $\eta^2$ |
| T1 SRH | 4.23 (.71) | 4.34 (.66) | 4.03 (.82) | 3.96 (.81) | 5.32 | <.001 | .01 |
| T2 SRH | 4.17 (.73) | 4.18 (.75) | 3.98 (.82) | 3.76 (.85) | 9.61 | <.001 | .02 |
| T1 SWLS | 5.39 (1.01) | 5.24 (1.07) | 4.51 (1.40) | 4.22 (1.35) | 44.93 | <.001 | .08 |
| T2 SWLS | 5.33 (1.08) | 5.25 (1.11) | 4.69 (1.45) | 3.96 (1.47) | 44.19 | <.001 | .08 |
| Neuroticism | 2.51 (.61) | 2.56 (.57) | 2.64 (.60) | 2.75 (.58) | 2.74 | .042 | .01 |
| Extraversion | 3.41 (.49) | 3.44 (.49) | 3.49 (.45) | 3.38 (.45) | 2.58 | .052 | .01 |
| Openness | 3.46 (.50) | 3.51 (.49) | 3.53 (.52) | 3.53 (.47) | 3.90 | .009 | .01 |
| Agreeability | 3.66 (.44) | 3.58 (.44) | 3.65 (.45) | 3.76 (.46) | 2.52 | .057 | .01 |
| Conscientiousness | 3.94 (.43) | 3.91 (.49) | 4.00 (.46) | 4.06 (.46) | 6.96 | <.001 | .02 |
| Adaptability | 3.74 (.50) | 3.83 (.48) | 3.91 (.49) | 3.86 (.57) | 12.96 | <.001 | .03 |

*Note.* No Change active group, $n$ = 1,041; change active group, $n$ = 217; unemployed-active group, $n$ = 189; unemployed-unemployed group, $n$ = 161. Age, education and income were controlled for. SWLS = satisfaction with life, SRH = self-rated health.

### 3.3. Differences between time 1 and time 2 for life satisfaction and self-rated health

Repeated measures ANCOVA (controlling for age, education and income) were performed to test for significant differences between time 1 and time 2 well-being for each professional group. Confirming hypothesis 2, the *unemployed-active* group showed an improvement in life satisfaction from time 1 to time 2 (Wilks Lambda = .96, $F(1,156) = 5.04$, $p = .026$), representing a small change (partial $\eta^2 = .03$). Life satisfaction for the *unemployed-unemployed* group worsened from time 1 to time 2 (Wilks Lambda = .97, $F(1,146) = 5.17$, $p = .024$) (partial $\eta^2 = .03$). As expected, there were no significant differences from time 1 to time 2 in life satisfaction for the *no change active* (Wilks Lambda = .99, $F(1,995) = .61$, $p = .435$), and *change active* groups (Wilks Lambda = .99, $F(1,201) = .73$, $p = .395$).

Contrary to hypothesis 2, time 2 self-rated health levels slightly worsened from time 1 to time 2 for the *unemployed-active* group (Wilks Lambda = .96, $F(1,154) = 6.73$, $p = .010$), with this change considered as small to medium (partial $\eta^2 = .04$). The *no change active* (Wilks Lambda = .99, $F(1,992) = 2.77$, $p = .096$), *change active* (Wilks Lambda = .99, $F(1,201) = .640$, $p = .425$) and *unemployed-unemployed* groups (Wilks Lambda = 1.00, $F(1,144) = .02$, $p = .894$) did not show any differences in self-rated health from time 1 to time 2.

### 3.4. Predicting time 2 life satisfaction and self-rated health with personality traits and career adaptability

#### 3.4.1. Life satisfaction

Results for the regression analysis predicting life satisfaction in the four professional groups are presented in Table 3. For the *no change active* group, step 1 showed a significant positive effect for income only. Career adaptability showed a significant positive effect in step 2 ($F_{change}(1,932) = 82.62$, $p < .001$). Adding the personality dimensions to the model in step 3 was significant ($F_{change}(5,927) = 31.88$, $p < .001$) with neuroticism a significant

negative predictor and extraversion and conscientiousness significant positive predictors. Finally, the addition of time 1 life satisfaction added substantially to the explained variance ($F_{change}(1,926) = 620.51$, $p < .001$) . Importantly, the addition of time 1 life satisfaction rendered the previous effects of extraversion, conscientiousness, and adaptability as non-significant and reduced the effect of income and neuroticism. The final model was significant ($F(10,926) = 115.68$, $p < .001$).

For the *change active* group, step 1 showed a positive effect for income. The addition of career adaptability to the model in step 2 was significant ($F_{change}(1,181) = 12.55$, $p < .001$). Neuroticism showed a significant and negative effect whereas openness had a positive effect in step 3 ($F_{change}(5,176) = 3.86$, $p = .002$). Adding time 1 life satisfaction to the model made all other previous effects non-significant and contributed an additional 30% to the explained variance ($F_{change}(1,175) = 118.95$, $p < .001$). The final model was significant ($F(10,175) = 21.23$, $p < .001$).

In the *unemployed-active* group, only income was significant and positive in the first step. The addition of career adaptability to the model was non-significant ($F_{change}(1,142) = 1.63$, $p = .203$). Of the personality dimensions in step 3, neuroticism was significant and showed a negative effect and conscientiousness a small positive effect ($F_{change}(5,137) = 3.00$, $p = .014$). Once again the addition of time 1 life satisfaction made all other previous effects non-significant and added substantially to the prediction of time 2 life satisfaction ($F_{change}(1,136) = 119.00$ , $p < .001$). The final model was significant ($F(10,136) = 19.46$, $p < .001$).

Finally, concerning the *unemployed-unemployed* group, results showed a similar pattern to those reported above. Income was the only significant predictor in step 1 and showed a positive effect. The addition of career adaptability in step 2 was significant ($F_{change}(1,134) = 8.88$, $p = .003$). Although neuroticism showed a significant negative effect

in step 3, the addition of the personality dimensions did not result in a significant change to the model ($F_{change}(5,129) = 2.12$, $p = .067$). As before, with the addition of time 1 life satisfaction in step 4 ($F_{change}(1,128) = 83.43$, $p < .001$), all previous significant effects became non-significant. The final model was significant ($F$ (10,128) = 12.57, $p < .001$).

3.4.2. Self-rated health

Turning now to self-rated health, results from the regression analyses in the four professional groups are presented in Table 4. Considering first the *no change active* group, age had a significant and negative effect, whereas income positively predicted self-rated health. Career adaptability had a positive significant effect in step 2 ($F_{change}(1,928) = 31.87$, $p < .001$). Step 3 showed the significant effects of some personality dimensions ($F_{change}(5,923) = 15.74$, $p < .001$); negative for neuroticism and openness, and positive for extraversion. Time 1 self-rated health was a significant and positive predictor in step 4 ($F_{change}(1,922) = 429.25$, $p < .001$), and made the previous effects of income and openness non-significant. The effects of age, neuroticism and extraversion remained significant but were reduced, especially in the case of neuroticism. The final model for time 2 self-rated health was significant ($F(10,922) = 62.90$, $p < .001$).

In the *change active* group, income was the only significant predictor in step 1 and showed a positive effect. The addition of career adaptability in step 2 had no significant effect ($F_{change}(1,181) = 1.74$, $p = .189$). In step 3, only neuroticism was significant with a negative effect ($F_{change}(5,176) = 2.58$, $p = .028$). Adding time 1 self-rated health in step 4 rendered all previous effects non-significant ($F_{change}(1,175) = 93.17$, $p < .001$). The final model was significant ($F(10,175) = 13.80$, $p < .001$).

For the *unemployed-active* group, age had a significant and negative effect in step 1. The addition of career adaptability in step 2 was non-significant ($F_{change}(1,140) = .86$, $p = .355$). Adding personality dimensions in step 3 resulted in a significant change ($F_{change}(5,135)$

= 2.79, $p$ = .020); neuroticism showed a negative effect. Time 1 self-rated health was an important addition to the model in step 4 ($F_{change}(1,134) = 134.66$, $p < .001$). The effect of neuroticism became non-significant and the effect of age was reduced. The final model was significant ($F(10,134) = 19.26$, $p < .001$).

Finally, for the *unemployed-unemployed* group, no control variables were significant. Career adaptability showed a positive significant effect in step 2 ($F_{change}(1,133) = 5.31$, $p$ = .023).

The only significant personality dimension in step 3 was agreeability that had a negative effect ($F_{change}(5,128) = 2.68$, $p$ = .025). The addition of time 1 self-rated health was important ($F_{change}(1,127) = 99.70$, $p < .001$). The effect of agreeability remained, and extraversion, and education became significant predictors in this final step. The final model was significant ($F(10,127) = 14.23$, $p < .001$).

Globally, the results for life satisfaction and self-rated health showed a similar pattern; career adaptability positively predicted well-being (hypothesis 4). Hypothesis 5 was confirmed; neuroticism negatively predicted life satisfaction and self-rated health. Extraversion and openness positively predicted both outcomes; whereas conscientiousness predicted life satisfaction and agreeability predicted self-rated health. The effects of personality were removed or significantly reduced with the addition of time 1 well-being (either life satisfaction or self-rated health) to the models (hypothesis 6).

Table 3. Hierarchical Multiple Regression Analysis Predicting Life Satisfaction with Adaptability and Personality in the Four Professional Groups

| Step / Predictor | No Change Active | | | | Change Active | | | | Unemployed-Active | | | | Unemployed-Unemployed | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Step 1 | | | | | | | | | | | | | | | | |
| Age | .01 | -.01 | -.04 | -.04 | -.05 | -.05 | -.08 | .00 | -.08 | -.09 | -.12 | -.10 | .02* | .00 | -.02 | -.11 |
| Education | .04 | .02 | .03 | .01 | .10 | .07 | .08 | .01 | .05 | .05 | .01 | .01 | .03 | .01 | -.02 | -.05 |
| Income | .22*** | .18*** | .13*** | .05* | .29*** | .25** | .19** | .09 | .35*** | .33*** | .32*** | .08 | .18 | .16 | .13 | .02 |
| Step 2 | | | | | | | | | | | | | | | | |
| CAAS | | .28*** | .08* | -.01 | | .24** | .10 | .01 | | .10 | -.04 | -.04 | | .25** | .13 | .06 |
| Step 3 | | | | | | | | | | | | | | | | |
| N | | | -.32*** | -.12*** | | | -.31*** | .03 | | | -.25** | -.02 | | | -.31** | -.02 |
| E | | | .10** | -.01 | | | -.06 | -.05 | | | .10 | .04 | | | -.05 | -.06 |
| O | | | -.01 | .02 | | | .16** | .07 | | | .02 | -.02 | | | .03 | .01 |
| A | | | .02 | .04 | | | .06 | .07 | | | .04 | .01 | | | -.09 | -.03 |
| C | | | .08* | .04 | | | -.01 | -.03 | | | .03** | -.01 | | | .03 | .01 |
| Step 4 | | | | | | | | | | | | | | | | |
| T1 SWLS | | | | .66*** | | | | .72*** | | | | .72*** | | | | .70*** |
| $\Delta R^2$ | | .08*** | .13*** | .30*** | | .06** | .08** | .31*** | | .01 | .08* | .36*** | | .06** | .07 | .33*** |
| Total $R^2$ | .05 | .13 | .26 | .56 | .10 | .16 | .24 | .55 | .14 | .15 | .23 | .59 | .04 | .10 | .17 | .50 |

*Note.* Standardized regression coefficients (β) are reported. Age and income were measured as continuous variables. Language was coded as 1 = German, 2 = French. Gender was coded as 1 = men, 2 = women. Education was coded as 1 = Primary, 2 = Secondary/Tertiary. SWLS = Life Satisfaction.

*$p < .05$, ** $p < .01$, ***$p < .001$.

Table 4. Hierarchical Multiple Regression Analysis Predicting Self-Rated Health with Adaptability and Personality in the Four Professional Groups

| Step / Predictor | No Change Active | | | | Change Active | | | | Unemployed-Active | | | | Unemployed-Unemployed | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Step 1 | | | | | | | | | | | | | | | | |
| Age | -.10** | -.11*** | -.12*** | -.08** | -.14 | -.14 | -.15* | -.06 | -.27** | -.28** | -.32*** | -.16** | -.11 | -.13 | -.09 | -.03 |
| Education | .01 | -.01 | -.01 | -.02 | .12 | .11 | .12 | .03 | .11 | .11 | .06 | .09 | .16 | .15 | .10 | -.01 |
| Income | .11** | .08* | .06 | .01 | .21** | .20** | .13 | .06 | .06 | .04 | .06 | -.05 | .01 | -.01 | -.02 | -.05 |
| Step 2 | | | | | | | | | | | | | | | | |
| CAAS | | .18*** | .08 | .06 | | .10 | .01 | .08 | | .08 | -.06 | -.03 | | .20** | .16 | .11 |
| Step 3 | | | | | | | | | | | | | | | | |
| N | | | -.22*** | -.07* | | | -.29*** | -.10 | | | -.22** | -.00 | | | -.19 | -.06 |
| E | | | .12** | .09** | | | -.04 | -.08 | | | .01 | -.10 | | | .16 | .13 |
| O | | | -.09* | -.05 | | | .06 | -.01 | | | .16 | .04 | | | .01 | -.02 |
| A | | | .03 | .00 | | | .02 | .06 | | | .09 | .06 | | | -.23** | -.13 |
| C | | | .02 | -.02 | | | -.05 | -.06 | | | .04 | -.01 | | | -.12 | -.09 |
| Step 4 | | | | | | | | | | | | | | | | |
| T1 SRH | | | | .56*** | | | | .60*** | | | | .74*** | | | | .65*** |
| $\Delta R^2$ | | .03*** | .07*** | .28*** | | .01 | .06* | .30*** | | .01 | .09* | .41*** | | .04* | .09* | .37*** |
| Total $R^2$ | .02 | .06 | .13 | .41 | .07 | .08 | .14 | .44 | .09 | .09 | .18 | .59 | .03 | .07 | .16 | .53 |

*Note.* Standardized regression coefficients (β) are reported. Age and income were measured as continuous variables. Language was coded as 1 = German, 2 = French. Gender was coded as 1 = men, 2 = women. Education was coded as 1 = Primary, 2 = Secondary/Tertiary. SRH = self-rated health.

*$p < .05$, ** $p < .01$, ***$p < .001$.

## 4. Discussion

### 4.1. Professional trajectories and life satisfaction and self-rated health

Not surprisingly, meaningful differences in life satisfaction and self-rated health exist between the four professional groups (hypotheses 1 and 2). At both time points, employed individuals, irrespective of if they experienced a change or not, had the highest levels of well-being that remained stable. Unemployed individuals reported the lowest well-being which is in line with previous research (Ervasti & Venetoklis, 2010; Paul & Moser, 2009). Importantly, the move from unemployment to employment was associated with the expected increase in life satisfaction, but a slight decrease in self-rated health, which could be explained by the stress associated with regaining employment. However, at time 2, well-being levels were still significantly lower than those for the individuals who remain employed, suggesting that after unemployment well-being may not return to prior levels, or at least not in the short to medium term (Lucas et al., 2004). This may indicate that a decrease in mental-health in unemployment is not only due to reduced access to benefits and functions of work (Jahoda, 1981), as these are regained with employment, but also possibly due to longer lasting changes in aspects of the self such as self-esteem (Paul & Moser, 2009). Studies have found that individual characteristics contribute significantly to the prediction of well-being, above and beyond the effects of the professional situation (Creed & Evans, 2002). Individual differences are implicated in how individuals appraise and respond to situations (Diener et al., 1999; Lazarus & Folkman, 1984) and thus individuals do not react uniformly to situations. Accordingly, our understanding of well-being is enhanced when situational and individual predictors are considered.

### 4.2. The role of individual characteristics for life satisfaction and self-rated health

Career adaptability positively predicted life satisfaction and self-rated health in the *no change active* and *unemployed-unemployed* groups, and had some positive effect on life

satisfaction in the *change active* group providing support for hypothesis 4. These findings extend previous studies that were cross-sectional and included measures of work specific well-being outcomes such as work stress and work engagement (Johnston et al., 2013; Rossier et al., 2012). Results of this study further confirm the importance of career adaptability as a personal resource that extends beyond only the domain of work. Career adaptability persisted as a resource over one year in a sample of adults building on prior studies that used university graduates or students with shorter time frames (Guan et al., 2013; Tolentino et al., 2014). These results suggest that career adaptability may be a resource for regulatory behaviour by helping individuals to adjust better to the work role and contextual influences (Rossier, 2015).

Adaptability had no effect on well-being in the *unemployed-active* group and very little effect in the *change active* group, partly disconfirming hypothesis 4. In these groups, adaptability may in fact be having an indirect effect on well-being through finding employment or adjusting to a new job. It is already known that adaptability, as contextualized by the setting and concerned with tasks of career construction and developmental adaptations (McAdams & Pals, 2006; Rossier, 2015; Savickas, 2005), is important in transitions and is associated with career outcomes such as re-employment (Guan et al., 2013; Koen et al., 2010). Additionally, the importance of work for well-being is widely accepted (Blustein, 2008), and thus in these transition groups, career adaptability is indirectly contributing to well-being through finding and adjusting to employment. Further support for this explanation is found in the group differences on adaptability; in particular the *unemployed-active* group showed the highest level of adaptability possibly suggesting that career adaptability was mobilized in the job search process, which in turn led to an indirect improvement in well-being. In the *change active* group, although career adaptability was not particularly elevated

in comparison to the other groups, well-being was high and stable for this group, suggesting that career adaptability may have contributed to well-being through work adjustment.

Globally, personality traits had less of an effect on well-being in the four groups than expected (hypothesis 5). Neuroticism predicted well-being in all the groups, with the exception of no effect in the *unemployed-unemployed* group for self-rated health, confirming the importance of neuroticism (Steel et al., 2008). However, adding time 1 well-being to the models substantially reduced the effect of neuroticism in the *no change active* group, and the effect disappeared in the other groups (hypothesis 6). Similarly, any effects for extraversion or conscientiousness were removed with the addition of time 1 well-being, contradicting some previous findings (Goodwin & Engstrom, 2002; Heller et al., 2002). Unexpectedly, agreeability, before the addition of time 1 self-rated health negatively predicted self-rated health in the *unemployed-unemployed* group, suggesting that higher levels of agreeability may correspond to worsened health in this group. This result appears counterintuitive, but may be driven by aspects of agreeability such as compliance and an acceptance of things as they are, even if the situation is not desirable. This is line with the instrumental view of personality, which suggests that a trait such as agreeability may lead people to encounter a specific situation, which in turn influences well-being (McCrae & Costa, 1991).

The collection of results concerning personality may warrant three conclusions. Firstly, the traits important for well-being may not be the same in different professional situations, highlighting again the necessity to jointly consider individual and professional predictors of well-being. This is corroborated by the differences on personality traits according to group membership. Secondly personality traits may have a more synchronous relationship to well-being, and this is captured when the time 1 well-being is entered into the model (Boswell et al., 2005). An intervening mechanism may be required to transmit the effect of personality onto well-being. This may be in the form of events, as personality traits

predispose individuals to experience certain events, which in turn influence well-being (Heller et al., 2002; Steel et al., 2008). Alternatively, cross-sectional evidence has shown that the relationship between personality and well-being outcomes is mediated by career adaptability (Johnston et al., 2013; Rossier et al., 2012) and thus a test of a longitudinal mediation model may provide further insight into how personality traits relate to well-being over time. Thirdly, the results point to the stability of well-being over time that is partly driven by personality traits (Diener et al., 2006). Rather than contributing to well-being over time, personality may be more implicated in setting the baseline, which in turn predicts future well-being.

### 4.3. Differences in adaptability and personality as contributors to the professional situation

It was expected, according to hypothesis 3, that the four professional groups would show meaningful differences with reference to overall levels of adaptability, and the data confirms this on a descriptive level. The *unemployed-active* group had the highest levels of adaptability, followed by the *unemployed-unemployed*, *change active*, and *no change active* groups. This result confirms and extends previous cross-sectional findings concerning group differences in adaptability (Maggiori et al., 2013) and showed, with a longitudinal perspective, that adaptability is a resource that individuals can activate in response to the professional environment, and may an important element in career development.

An interesting pattern of results pertains to group differences in neuroticism, openness, and conscientiousness. Individuals who remained unemployed over the last year displayed higher levels of neuroticism and conscientiousness than those who had remained in stable employment. Openness appeared to be an important trait for those who found a job in the course of the last year. Two possible explanations are offered for these differences. First, there is the likelihood of self-selection bias, such as that individuals with a particular profile

are more likely to create or experience particular situations (Steel et al., 2008). This is especially pertinent to the case of unemployed individuals displaying increased neuroticism as neuroticism predisposes individuals to more negative life events (Magnus, Diner, Fujita, & Pavot, 1993). Second, there is the possibility that the professional situation has altered the display of traits. Conscientiousness and openness are two traits with clear behavioural content (Pytlik Zilling, Hemenover, & Dienstbuer, 2002) and thus the behaviour associated with these traits is more strongly endorsed or activated in a particular context. During unemployment, adaptive behaviour associated with conscientiousness and openness such as organization and active exploration are important for coping during unemployment and may assist in finding a job. In this case, personality traits affect individual functioning and may indicate adjustment and a response to the environment (McAdams & Pals, 2006).

### 4.4. Limitations, implications, future research

This study has some challenges that need to be addressed in future research. Only having two time points one year apart may not be sufficient to capture the fluctuations in individual characteristics and well-being. Studies that have more time points and more frequent monitoring of well-being and individual characteristics before, during and after a change, would help to provide a clearer perspective. This is especially important in the case of adaptability, as Zacher (2014b) noted, a specific theory of change in career adaptability does not exist. Career adaptability is somewhat stable over time and is predicted by personality traits, temporal focus and some demographics. However, at the same time it is predicted by more transient states such as adaptivity or readiness (Tolentino et al., 2014). Thus the casual order of how situational factors, stable individual traits, and transient individual states effect career adaptability, and how this in turn influences career development, still remains an open question. A better understanding of how career adaptability develops would inform the design and application of interventions aimed at

enhancing this important resource. Career practitioners would thus be better equipped to help clients maximize their career adaptability resources in the process of career development.

In the case of personality, research at a facet level (Steel et al., 2008) may be better able to target behaviours activated in different situations, and how these may change over time in relation to well-being and experiences of certain events. This combined with a clearer focus on the role of time in personality development (Luhmann, Orth, Specht, Kandler, & Lucas, 2014) would provide clearer insight into how personality should be addressed in career interventions as both a resource for and risk to career development. Moreover, career interventions working on counselees' regulation processes might allow for an increase in the expression of context-specific positive behaviours associated with personality traits (Rossier, 2015).

This study reinforces again the importance of work for well-being, but also raises some important questions for how well-being can be maintained or improved in unfavourable situations such as unemployment. Becoming re-employed corresponds with an improvement in well-being, but not necessarily back to previous levels. This suggests that policies and interventions concerning unemployment need to take a more holistic view of well-being and attend to other factors that may provide an extra boost to well-being. For individuals desiring to make a change or forced to make a change, the possible consequences for well-being should be recognised, and consideration given to the change process to result in reduced risk for the individual.

Generally, the effects observed in this study are small, but are nonetheless promising. Some important control variables were included, and globally the results are as expected. In addition, considering the complexity that was not accounted for (i.e. (in)voluntary change), the results are encouraging in that they confirm overall trends and patterns. Finally, as in

most studies, a larger sample size for some of the groups would have been desirable to permit further detailed analysis.

### 4.5. Conclusion

Staying well and maintaining well-being in the face of complex and uncertain professional trajectories is no simple feat. Well-being is driven by a myriad of individual and contextual factors, making this a complex topic of inquiry. Despite this complexity, two clear patterns have emerged; 1) the professional situation, with periods of stability and transition, clearly matters for well-being, and 2) the best predictor of future well-being is current well-being, suggesting that all possible should be done to protect current well-being.

## VI. Believing in a just world helps maintain well-being at work by coloring organizational justice perceptions

Reproduction of the following article:

Johnston, C. S., Krings, F., Fiori, M., & Maggiori, C. (2014, under revision) Believing in a just world helps maintain well-being at work by coloring organizational justice perceptions. *Journal of Organizational Behavior.*

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Abstract

Justice is a core fundamental theme for individuals. This study suggests that believing that the world is just where one gets what one deserves and deserves what one gets is an important personal resource that helps employees maintain well-being at work. Further, it is proposed that belief in a just world exerts its influence on well-being through increasing fairness perceptions of the work environment. Using two waves of data drawn from a large representative sample of working adults in Switzerland, results showed that personal just world beliefs at time 1 indeed augment perceptions of organizational justice, and this in turn increases levels of job satisfaction and reduces work stress at time 2, i.e., one year later. In line with recent theorizing on the distinction between personal and general just world beliefs, this effect is only evident for personal and not general just world beliefs. This study highlights personal belief in a just world as an important yet largely overlooked resource for the work context, and suggests the need to consider individual differences in beliefs about justice as drivers of organizational justice perceptions.

Keywords: Belief in a Just World, Organizational Justice, Work Stress, Job Satisfaction.

## 1. Introduction

In his seminal work on justice, Lerner (1980) states that people have a fundamental need to believe that the world is a just place where good deeds are rewarded and bad deeds are punished. This so-called just world hypothesis has sparked considerable research interest in how individuals maintain their belief in a just world when it is challenged, i.e., in the face of blatant injustice (Furnham, 2003; Hafer & Bègue, 2005). More recently, a new theoretical conceptualization emerged that considers belief in a just world as a personal resource that has various adaptive functions and thus contributes significantly to positive outcomes related to mental health (Dalbert, 2001; 2007; Furnham, 2003). Furthermore, it became apparent that believing that justice reigns in one's own world (personal belief in a just world) needs to be distinguished from believing that justice reigns in the world in general (general just world belief; Dalbert, 1999; Lipkus, Dalbert, & Siegler, 1996). Initial evidence suggests that belief in a just world, in particular personal belief in a just world, is an important correlate of positive outcomes in organizational settings (e.g. Dalbert, 2007). However, this research is still in its infancy, relying on a limited number of mainly cross-sectional studies. Moreover, the mechanism that links belief in a just world to outcomes at work is not clear. Thus, the adaptive function of just world beliefs in an organizational context remains to be proven.

This is the starting point of our study. More specifically, drawing on just world theory and theories of organizational justice that link justice to core aspects of the self (Cropanzano, Byrne, Bobocel, & Rupp, 2001) we suggest and test in a longitudinal study, that personal, but not general belief in a just world augments organizational justice perceptions, a well-known antecedent of various positive work outcomes (e.g., Greenberg & Colquitt, 2013), which in turn positively influences well-being at work over time. We thus propose individual differences in personal just world beliefs as a driver of organizational justice perceptions, and that it is through this route that just world beliefs help maintain well-being at work.

This study offers several contributions. First, it contributes to the literature by identifying a key individual driver of justice perceptions, namely belief in a just world. Often, when studies on organizational justice include individual differences, they treat them as control (e.g. Cohen-Charash & Spector, 2001) or moderator variables (e.g. Irving, Coleman, & Bobocel, 2005) suggesting that organizational justice perceptions mainly vary as a function of the organizational environment. However, in accordance with just world theory, this study demonstrates that organizational justice perceptions are also driven by fundamental and stable beliefs about fairness. Second, by showing organizational justice perceptions as the intervening mechanism between personal belief in a just world and work-related well-being, this study adds to understanding of why justice beliefs matter in organizational settings. Third, it further highlights the distinctness of the two facets of just world beliefs, the personal and general belief in a just world. The two beliefs are related, yet they have separate implications. This study demonstrates that in work settings, personal but not general just world beliefs matter, through their clear impact on organizational justice perceptions.

1.1. Belief in a just world

Belief in a just world is a fundamental and pervasive belief that the world is a just place where a person's outcomes, rewards and punishments, fit what she or he deserves, i.e., are "caused by who they are or what they have done" (Lerner, 1987, p.108). Belief in a just world develops in childhood and is mostly stable during adulthood. It gives individuals a view of the world that is stable and orderly, where events are meaningful and outcomes match behaviors permitting commitment to long-term goals (Lerner, 1978; Lerner & Montada, 1998). It has also been described as a positive illusion that helps people deal with harsh realities of the world like unfairness or inequality. Various adaptive functions of belief in a just world have been proposed. These make belief in a just world valuable to individuals, who are thus motivated to defend when confronted with injustice, by restoring justice

behaviorally or cognitively. Cognitive restoration typically takes place when behavioral restoration (e.g., through compensating victims of injustice) is not possible. It implies a re-interpretation of the situation that is aligned with one's just world belief (e.g., through down-playing the injustice).

Three main adaptive functions of belief in a just world as a personal resource have been identified; the trust, assimilation and mental health functions (Dalbert, 2001). The trust function leads individuals to trust in the overall fairness of the environment (e.g. Furnham, 1995; Tomaka & Blascovich, 1994), to expect just treatment from others and to act justly themselves (Dalbert, 1998, 2001). This promotes goal-directed behavior and investment in long-term goals (Otto & Dalbert, 2005). The assimilation function allows individuals to protect their belief in a just world by assimilating experiences of injustice. This is done through various cognitive mechanisms such as playing down the injustice, appraising the perpetrators' actions as unintentional, forgiving (Strelan, 2007) or avoiding self-focused rumination (Dalbert, 1997). The mental health function is a consequence of the trust and assimilation functions. It posits that belief in a just world fosters well-being because it endows people with trust and a cognitive framework allowing them to interpret events in a meaningful (self-serving) manner (Bobocel & Hafer, 2007; Otto & Schmidt, 2007).

1.2. Personal and general belief in a just world

Two related, yet distinct, facets of belief in a just world need to be distinguished; personal and general beliefs in a just world (Dalbert, 1999; Furnham & Proctor, 1989; 1992, Sutton & Douglas, 2005). General belief in a just world is the belief that the world in general is just where people in general get what they deserve. It is more focused on others, and has most often been used in studies where events occurring in others' lives are emphasized, such as studies on blaming innocent victims for their fate (De Judicibus & McCabe, 2001). Personal belief in a just world is focused on the self, comprising the belief that one usually gets what

one deserves. It is more clearly related to mental health than general just world belief (Dalbert 1999; Lipkus et al., 1996; Otto, Glaser & Dalbert, 2009; Dalbert 2007; Otto, Boos, Dalbert, Schöps, & Hoyer, 2006; Sutton & Douglas, 2005).

By distinguishing personal and general belief in a just world, personal belief in a just world came to be considered as a personal resource that helps people to cope with events in their daily lives. It was applied in different settings, and initial correlational evidence supports the notion of personal just world as a resource, also in an organizational context. For example, personal belief in a just world was positively related to adjustment in terms of optimism and trust and reduced depression in targets of mobbing at work (Cubela Adoric & Kvartuc, 2007). In another study, organizational commitment and self-rated performance were related to personal belief in a just world positively, whereas emotional exhaustion, depersonalization and intention to quit showed negative associations (Otto & Schmidt, 2007). These studies support the adaptive functions of personal belief in a just world in organizational settings but their cross-sectional nature limits interpretability of their findings (for an exception see Otto et al., 2009). Moreover, they did not compare the effects of general and personal belief in a just world, leaving open the central question concerning the specificity of the two just world beliefs. Finally and importantly, none of these studies reveal what explains the relationship between belief in a just world and outcomes, i.e., they did not show the mediating mechanism. To unravel the mechanism, a longitudinal design that includes mediators proposed by theory and compares the effect of both personal and general belief in a just world is needed. This is applied in this study. The adaptive functions of belief in a just world suggest that one central way that the belief in a just world helps maintain well-being is by providing people with trust and a cognitive framework through which they assimilate daily (in)justice experiences. Thus, just world belief may contribute to well-being at work by coloring organizational justice perceptions positively. Indeed, Bobocel and Hafer

(2007) recently suggested that just world beliefs may augment perceptions of fairness in the workplace, providing a link between organizational justice perceptions and belief in a just world.

## 1.3. Belief in a just world and organizational justice perceptions

### 1.3.1. Organizational justice perceptions

Organizational justice perceptions include different aspects related to fairness in the workplace; distributive justice concerns decision outcomes; procedural justice the justice of decision making processes, and interpersonal justice refers to the justness of the relational treatment individuals in the workplace receive (Colquitt, Conlon, Wesson, Porter, & Ng, 2001, Cohen-Charash & Spector, 2001). Justice perceptions can be treated as one overall entity (Ambrose & Arnaud, 2005; Ambrose & Schminke, 2009; Hauenstein, McGonigle, & Flinder, 2001; Lind, 2001) as individuals are likely to be use whatever information is available and salient at that moment in making justice appraisals (Greenberg, 2001). Organizational justice is one of the most important approaches to work motivation – fair procedures promote acceptance of organizational outcomes, but when individuals feel unfairly treated, they respond affectively and behaviorally (Latham & Pinder, 2005). In fact, organizational justice perceptions have become considered as an important psychosocial predictor of employee health and well-being (Elovainio, Kivimäki, & Vahtera, 2002).

### 1.3.2. Belief in a just world as a driver of organizational justice perceptions

It is evident that organizational justice perceptions are made in relation to events occurring in the workplace such as supervisor behavior, decision procedures and receipt of rewards (Cropanzano et al., 2001). However, mechanisms involved in perception and appraisal of (in)justice vary significantly across individuals, suggesting that perceptions of fairness are not universal (Skitka, Aramovich, Lytle, & Sargis, 2010). Various explanations have been offered in considering how individuals make justice perceptions (see Cropanzano

et al., 2001). Instrumental models propose that justice is important to individuals because of its significance in ensuring favorable outcomes for the individual. Relational and moral virtue models proposed that justice matters to individuals because it affirms the individual identity within the valued group, and because individuals have a basic respect for human dignity and regard the pursuit of justice as a valued end in itself. Cropanzano and colleagues (2001) argued that these models overlap closely with fundamental psychological needs; needs for control, belonging, and meaning. The need for control is best captured by the instrumental model, the needs for belonging and self-regard by the relational model, and the need for meaning by the moral virtues model. This type of reasoning suggests that close links exist between aspects of the self and organizational justice perceptions, and that the appraisal of (in)justice is shaped by individual factors (Skitka et al., 2010). For example, when self-relevant goals and values are accessible people think about justice, and how people define fairness depends on which aspects of the self (i.e. material, social and moral) dominate the working self-concept (Skitka, 2003; Skitka et al., 2010).

As outlined above, belief in a just world is an indicator of an individual's disposition to strive for justice and as an overarching belief, may represent aspects of similar needs to those that influence justice perceptions. For example, personal belief in a just world reflects a motivation to see the world as certain, where the individual feels some control over the predictability of events and favorability of outcomes (Blader & Bobocel, 2005). Personal belief in a just world also results in individuals expecting just treatment from others and wanting to act justly themselves (Dalbert 1998, 2001), partly contributing to the fulfillment of relational needs. Finally, personal belief in a just world as an indicator of the justice motive, reflects an individual's need to strive for justice as a worthwhile end in and of itself (Dalbert, 2009, Lerner, 1977) suggesting a link to the need for meaning and to live a virtuous life.

More specifically, and in line with the assimilation and trust functions of belief in a just world, a strong belief in a just world corresponds to evaluations of events in the individual's life as just, which consequently leads to an evaluation of events in the workplace as just and to expect just treatment from co-workers, supervisors and the organization (Dalbert 2009; Otto et al., 2009). This is due to the basic need individuals have to maintain the belief in a just world and as a result are motivated to perceive events and outcomes as more fair than they actually are (Hafer & Correy, 1999). Indeed, for strong just world believers, receiving a favorable outcome increased perceptions of organizational justice, even when biased procedures were used (Hagedoorn, Buunk, & Van de Vliert, 2002).

Here, once again, the distinction between personal and general belief in a just world is important. Beliefs function by determining what is salient in any situation and assigning meaning (Lazarus & Folkman, 1984), with, specifically, personal belief in a just world relevant to the events that occur within the boundaries of one's immediate context. In the case of individual justice perceptions in organizations, and in terms of personal well-being responses, personal justice beliefs should be more relevant than general justice beliefs. Thus, we expect only personal belief in a just world, but not general belief in a just world, to influence perceptions of organizational justice.

### 1.4. Organizational justice and work related well-being: Relations with job satisfaction and stress

As outlined above, we suggest that personal belief in a just world positively and indirectly influences work-related well-being, through organizational justice perceptions. Well-being has several components with models of well-being, such as subjective well-being (Diener, 1984), indicating that it includes cognitive, such as satisfaction appraisals, and affective components, such as stress responses. Two central and often studied aspects of well-being at

work, job satisfaction and work stress, represent the cognitive and affective aspects of work-related well-being.

On a cognitive level, job satisfaction refers to an individual's overall evaluation of aspects related to his or her job (Judge, Heller, & Mount, 2002). A known relationship exists between the organizational justice facets and job satisfaction (Cohen-Charash & Spector, 2001; Loi, Yang, Diefendorff, 2009; Irving et al., 2005). Studies also support the relationship between overall organizational justice perceptions and job satisfaction (Sora, Caballer, Peiró, Silla, & Gracia, 2010) with meta analysis results showing that the correlations between job satisfaction and the dimensions of justice were all very similar (Cohen-Charash & Spector, 2001) and that overall justice is a better predictor of job satisfaction than individual justice dimensions (Ambrose & Schminke, 2009).

Affective well-being at work may be captured by work stress, which is an uncomfortable psychological state resulting from a perceived imbalance of demands and resources (de Bruin, 2006) The different dimensions of organizational justice are related to various stress and strain response; for example distributive injustice is associated with emotional exhaustion, cynicism, mental health complaints (Taris, Kalimo, & Schaufeli, 2002); perceived procedural injustice relates to increased levels of psychological distress and emotional exhaustion (Tepper, 2001); and experiencing interpersonal injustice relates to personal emotional distress (Bies & Tripp, 2002) and perceived stress (Judge & Colquitt, 2004). Overall justice should be related to work stress too or it should be an even better predictor than the different justice components. When outcomes are fairly general (such as overall notions of satisfaction or stress), they are better predicted by overall justice than by justice facets (Holtz & Harold, 2009).

In sum, in this study, we expected an indirect positive relation between personal (but not general) just world beliefs and job satisfaction and stress, passing through perceptions of

organizational justice. We tested our hypotheses, using longitudinal data of employees drawn from a large representative sample of working-age adults in Switzerland. Just world beliefs at Time 1 were expected to indirectly influence well-being at work one year later (Time 2), through organizational justice perceptions.

## 2. Method

### 2.1. Participants

With the assistance of the Swiss Federal Office of Statistics, a representative sample of the Swiss working age population was drawn from the national register of inhabitants of the two largest linguistic regions of Switzerland, i.e., the German and French speaking areas that together make up 89% of the population (for more details on the sample see Maggiori et al., 2013). The sample was representative in terms of gender, age, and linguistic region. Participants who agreed to participate responded to a survey twice. The two measurement points (T1 and T2) were one year apart.

To test our hypotheses, we included participants who were employed and who completed both surveys (T1 and T2), resulting in a sample of 1,131 employees (48.3% male), aged between 27 and 57 ($M$ = 43.41 years, $SD$ = 8.40), with an average work rate of 86.3% (36.3 average hours per week, $SD$ = 8.13), tenure of 9.17 years ($SD$ = 7.86) and 44.3% of the sample held a supervisor position. A small percent of the sample had a primary education (4.4%), most a secondary education (51.4%) and some a tertiary education (37.3%). The majority of the sample completed the questionnaire in German (65.5%), the rest chose French (34.5%).

## 2.2. Measures

Scales that did not exist in German and French were translated into French and/or German by a team of professional translators. These translations were independently verified to ensure equivalence of the questionnaires by a second team of translators.

### 2.2.1. Belief in a just world

To measure personal and general belief in a just world, the Belief in a Just World scale (Dalbert, 1999) was used. Seven items (e.g. "I believe that I usually get what I deserve") measure personal belief in a just world ($\alpha = .90$) and six items (e.g. "I am confident that justice always prevails over injustice") measure general belief in a just world ($\alpha = .81$). A six point response scale was used ranging from 1 "not true at all/strongly agree", to 6 "very true/strongly agree".

### 2.2.2. Organizational justice

Organizational justice was assessed with the short version of the questionnaire by Colquitt (2001), validated by Elovainio et al. (2010), that covers distributive (two items, e.g., "Does your work situation reflect the effort you have put into your work?"), procedural (three items, e.g., "Have you been able to express your views and feelings during those procedures?") and interpersonal justice (three items, e.g., "Has your supervisor treated you with respect?"). For the interpersonal justice, one item was omitted ("Has your supervisor seemed to tailor his/her communications to individuals' specific needs?") because the item was difficult to translate adequately into French and German. Responses were indicated on 5-point scales with 1 "to a small extent" and 5 "to a large extent". The overall score for organizational justice was used. Reliability at T1 was .82 and .83 at T2.

### 2.2.3. General work stress scale

The General Work Stress Scale (GWSS) was used to provide a measure of the level of stress caused by work (de Bruin & Taylor, 2005) at both time points. This nine-item scale is

designed to be a one-dimensional measure of work stress. Individuals responded to questions using a five-point Likert type scale ranging from 1 “never” to 5 “always” (de Bruin & Taylor, 2005). An example item is “Do you spend time worrying about your work?” T1 reliability for the scale was .87, and at T2 it was .89.

#### 2.2.4. Job satisfaction

Five items, similar to those found in the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967), were used to assess, at both time points, participants’ satisfaction with various aspects of the work domain including behavior of the supervisor, perceived security, salary, working conditions and relationships with colleagues. A four-point rating scale was used with 1 “not satisfied at all” and 4 “very satisfied”. At T1 the reliability was .67 and at T2 .72.

#### 2.2.5. Control variables

To isolate the effects of the focal variables, a number of control variables were included in a later step of the analyses (see below). First, we included age (measured in years), gender (coded as 1 “man”, and 2 “woman”), and survey language (coded as 1 “German”, 2 “French”). Second, we included supervisor status of the participant (coded as 0 “not supervisor” and 1 “supervisor”) because supervisors may be more satisfied at work, but also more stressed (Flanagan & Flanagan, 2002). Finally, we included participants’ core personality traits, i.e., the Big Five traits neuroticism, extraversion, agreeableness, openness and conscientiousness. The Big Five personality traits, especially neuroticism, are known to correlate substantially with work stress and job satisfaction (Judge et al., 2002; Mroczek & Almeida, 2004), but also with organizational justice (Colquitt et al., 2001) and belief in a just world (Lipkus et al., 1996). They were assessed by the French (Aluja, García, Rossier, & García, 2005) and German versions (Schmitz, Hartkamp, Baldini, Rollnik, & Tress, 2001) of the NEO Five Factor Inventory Revised (McCrae & Costa, 2004). Questions were answered

using a 5 point Liker-type scale ranging from 1 “strongly disagree” to 5 “strongly agree”. Reliabilities for the five dimensions ranged between .70 and .83. All control variables were measured at T1.

2.3. Data analysis strategy

2.3.1. Confirmatory factor analysis to determine distinctness of justice constructs

In a first step, in order to verify that organizational justice perceptions are distinct from belief in a just world and that general and personal belief in a just world are separate constructs, confirmatory factor analyses were conducted using T1 data. Three separate models were tested and compared; 1) a one factor model with all the items loading on the same factor, 2) a two factor model with one organizational justice factor and one justice beliefs factor (i.e. personal and general beliefs combined), and 3) a three factor model with one organizational justice factor, one personal belief in a just world factor and one general belief in a just world factor.

The following fit indices were considered; $\chi 2$ per degree of freedom ($\chi 2/df$), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). A model is considered to have an acceptable fit if the $\chi 2/df$ is equal to or below 5 (Bollen, 1989), the CFI value is .90 or above, the TLI values are above .95 and the RMSEA value is .05 or less, with values less than .08 considered acceptable (Cheung & Rensvold, 2002; Vandenberg & Lance, 2000). Additionally the change in chi square ($\Delta\chi 2(\Delta\ df)$) to test for differences between nested models was considered and the model with the lowest AIC value was considered the most parsimonious (Hu & Bentler, 1995).

2.3.2. Path analysis to test the hypotheses

In step two, we tested our hypotheses, using path analysis with observed variables (Farrell, 1994). The direct effect of belief in a just world on well-being independent of

organizational justice, as well as its indirect effect passing through organizational justice perceptions, were tested. We conducted bootstrap analysis with 1000 samples to obtain accurate point estimates of these effects as well as their 95% bias-corrected confidence intervals (CI) (Hayes, 2009; Preacher & Hayes, 2004). Models were evaluated using the fit indices presented above.

Path analysis also allows us to control for the effects of prior levels of job satisfaction and work stress (i.e. at T1) on current job satisfaction and work stress (i.e. at T2) as well as prior levels of the mediator, i.e., organizational justice perceptions. Importantly, also the unique effects of, and relations between, general and personal belief in a just world were modeled. To account for the relation between the two beliefs, personal and general belief in a just world were allowed to correlate, but they were also each unique predictors of organizational justice and the outcome variables. Including both just world beliefs in the model, also means that their respective effects can be tested when the effect of the other justice belief is constrained to zero. The final model is displayed in Figure 5.

In step three, a series of robustness checks were conducted. Following the procedure of Bakker, Demerouti, de Boer, and Schaufeli (2003) control variables were added simultaneously to the model, correlating them with the variables of interest based on the correlation matrix. Then finally, to ensure that pattern of results were not due to a change in participants' employment situation between T1 and T2, the models were reran with only the participants who did not experience significant changes in their employment situation between the two time points. This means that for this robustness check, participants who had changed jobs, or changed roles (e.g., were promoted or had new responsibilities) within their job were excluded.

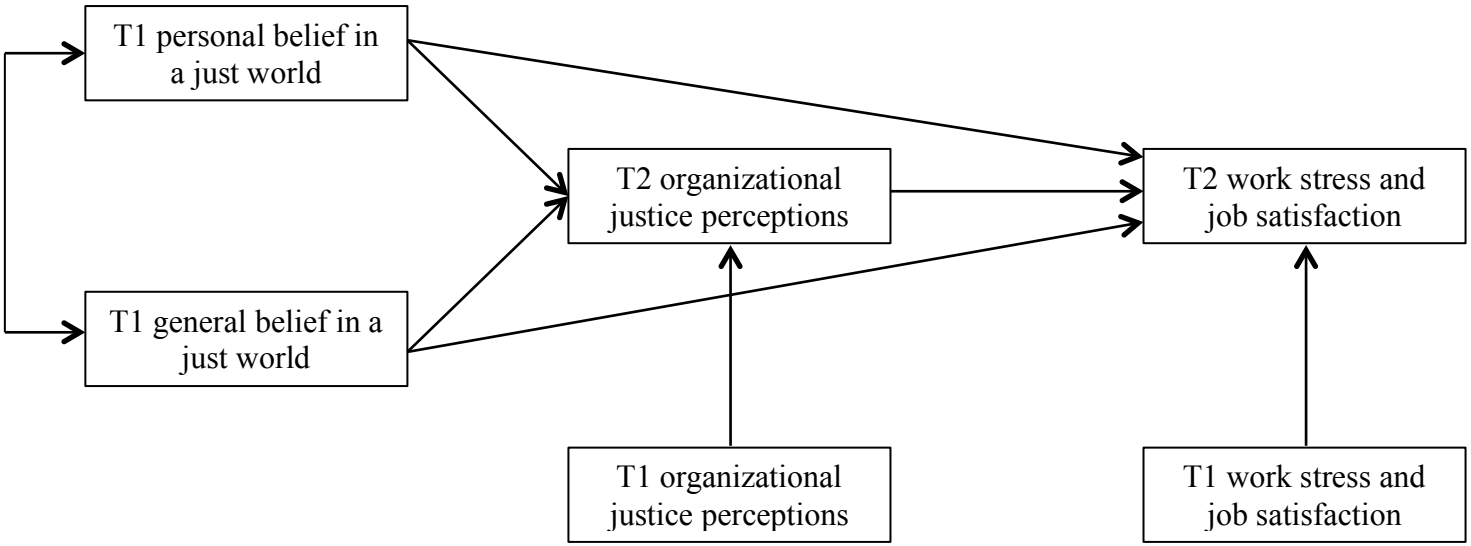


*Figure 5*. The predicted path model showing the direct and indirect effects of personal and general belief in a just world and organizational justice perceptions on the outcomes of work stress and job satisfaction one year later. Single headed arrows illustrate path effects, double headed arrows a covariance.

## 3. Results

### 3.1. Correlations

Correlations between the variables are displayed in Table 1. Concerning the focal variables, the correlations between personal and general belief in a just world, organizational justice perceptions, work stress and job satisfaction at both time points were as expected. Personal belief in a just world correlated positively with organizational justice perceptions and satisfaction, and negatively with work stress for both T1 and T2. General belief in a just world correlated positively with organizational justice perceptions, job satisfaction and negatively with stress at T1 and T2. Organizational justice perceptions were negatively related to work stress, and positively related to job satisfaction. Job satisfaction and work stress were negatively correlated with each other.

### 3.2. Confirmatory factor analysis

Results in Table 2 show that the three-factor model with separate factors for organizational justice, general belief in a just world and personal belief in a just world was the best fitting model in terms of all the fit indices. When comparing the model with two factors to the one-factor model, and the three-factor model to the two-factor model, in both cases the change in chi square was significant, indicating the model with the lowest chi square should be preferred. In addition, the AIC for the three-factor model was the smallest, suggesting that this is the most parsimonious model. Taken together, results supported the distinctness of the three focal justice concepts.

Table 1. Correlations between Study and Control Variables

| | | 1. | | 2. | | 3. | | 4. | | 5. | | 6. | | 7. | | 8. | | 9. | | 10. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Age | – | | | | | | | | | | | | | | | | | | | |
| 2. | Gender | -.03 | | – | | | | | | | | | | | | | | | | | |
| 3. | Language | -.01 | | .02 | | – | | | | | | | | | | | | | | | |
| 4. | Supervisor status | .03 | | -.20 | *** | .04 | | – | | | | | | | | | | | | | |
| 5. | Neuroticism | -.13 | *** | .19 | *** | .15 | *** | -.10 | ** | – | | | | | | | | | | | |
| 6. | Extraversion | -.01 | | .08 | *** | .13 | *** | .16 | *** | -.32 | *** | – | | | | | | | | | |
| 7. | Openness | .12 | *** | .16 | *** | .04 | | .01 | | .03 | | .29 | *** | – | | | | | | | |
| 8. | Agreeableness | .11 | *** | .18 | *** | .06 | * | -.15 | *** | -.13 | *** | .09 | ** | .17 | *** | – | | | | | |
| 9. | Conscientiousness | .05 | | .05 | | .05 | | .08 | ** | -.35 | *** | .29 | *** | .07 | * | .14 | *** | – | | | |
| 10. | T1 BJW P | .05 | | -.03 | | -.27 | *** | .13 | *** | -.35 | *** | .10 | ** | .02 | | .03 | | .15 | *** | – | |
| 11. | T1 BJW G | -.02 | | -.08 | ** | .01 | | .07 | * | -.10 | ** | .10 | ** | -.11 | *** | -.04 | | .08 | ** | .25 | *** |
| 12. | T1 Org. Justice | .05 | | -.01 | | -.12 | *** | .13 | *** | -.35 | *** | .18 | *** | .03 | | .03 | | .21 | *** | .34 | *** |
| 13. | T2 Org. Justice | .01 | | -.02 | | -.11 | *** | .13 | *** | -.29 | *** | .20 | *** | .08 | ** | .05 | | .14 | *** | .27 | *** |
| 14. | T1 Work Stress | -.02 | | -.01 | | .14 | *** | .02 | | .53 | *** | -.18 | *** | .03 | | -.10 | ** | -.25 | *** | -.27 | *** |
| 15. | T2 Work Stress | .00 | | .01 | | .16 | *** | .05 | | .43 | *** | -.13 | *** | .07 | * | -.08 | ** | -.18 | *** | -.19 | *** |
| 16. | T1 Job Satisfaction | .06 | * | .02 | | -.00 | | .07 | * | -.26 | *** | .19 | *** | .03 | | .10 | ** | .14 | *** | .28 | *** |
| 17. | T2 Job Satisfaction | .02 | | .06 | | -.01 | | .06 | * | -.22 | *** | .17 | *** | .01 | | .06 | * | .11 | *** | .21 | *** |

| | | 11. | | 12. | | 13. | | 14. | | 15. | | 16. | | 17. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11. | T1 BJW G | – | | | | | | | | | | | | |
| 12. | T1 Org. Justice | .10 | *** | – | | | | | | | | | | |
| 13. | T2 Org. Justice | .03 | | .53 | *** | – | | | | | | | | |
| 14. | T1 Work Stress | -.15 | *** | -.36 | *** | -.25 | *** | – | | | | | | |
| 15. | T2 Work Stress | -.12 | *** | -.24 | *** | -.39 | *** | .64 | *** | – | | | | |
| 16. | T1 Job Satisfaction | .08 | * | .54 | *** | .41 | *** | -.37 | *** | -.26 | *** | – | | |
| 17. | T2 Job Satisfaction | .06 | * | .39 | *** | .59 | *** | -.26 | *** | -.42 | *** | .50 | *** | – |

*Note.* Age was measured in years. Gender was coded as 1 = *man,* 2 = *woman,* survey language as 1 = *German*, 2 = *French* and supervisor status as 0 = *not supervisor*, 1 = *supervisor*. T1 = time 1. T2 = time 2. BJW P = personal belief in a just world. BJW G = general belief in a just world.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Results of Confirmatory Factor Analyses for Just World Beliefs and Organizational Justice Perceptions

| *Factors* | $\chi^2$ | *df* | $\chi^2/df$ | *p* | *CFI* | *TLI* | *RMSEA* | *AIC* | $\Delta\ \chi^2$ | $\Delta$ *df* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 factor | 5685.45 | 170 | 33.44 | <.001 | .495 | .436 | .169 | 5765.45 | | |
| 2 factors[1] | 3152.55 | 169 | 18.65 | <.001 | .727 | .693 | .125 | 3234.55 | 2532.9*** | 1 |
| 3 factors[2] | 1515.07 | 167 | 9.07 | <.001 | .877 | .860 | .085 | 1601.07 | 1637.48*** | 2 |

*Note.* [1]Model included belief in a just world and organizational justice as two separate factors. [2] Model included belief in a just world general, belief in a just world personal, and organizational justice as three separate factors. BJW P = personal belief in a just world. BJW G = general belief in a just world. OJ = organizational justice perceptions.
***$p < .001$.

3.3. Path analysis

Concerning the fit of the models showing the effects of justice beliefs on work stress through organizational justice, initial results suggested some problems with model fit; $\chi2 = 36.39$, $p < .001$, with $\chi2/df = 18.19$, CFI = .978, TLI = .833, and RMSEA = .123 (90% confidence interval CI .09; .16). Inspection of the modification indices greater than 20 (Byrne, 2009) suggested an effect from T1 organizational justice perceptions on T2 work stress. Including this pathway significantly improved model fit; $\chi2 = 3.91$, $p < .001$, with $\chi2/df = 3.91$, CFI = .998, TLI = .972, and RMSEA = .05 (90% CI .00; .10).

Similarly, initial results for the model predicting job satisfaction showed some problems with model fit; $\chi2 = 30.46$, $p < .001$, with $\chi2/df = 15.23$, CFI = .983, TLI = .872, and RMSEA = .112 (90% CI .079; .149). Including a pathway from T1 job satisfaction to T2 organizational justice perceptions, as suggested by a modification index greater than 20, considerably improved model fit; $\chi2 = 2.69$, $p = ns$, with $\chi2/df = 2.69$, CFI = .999, TLI = .985, and RMSEA = .039 (90% CI .00; .09).

Table 3 shows the results of the bootstrap estimates for the direct and indirect effects of personal and general belief in a just world through organizational justice perceptions on the

outcomes of work stress and job satisfaction. First, considering work stress, results showed, as predicted, a significant positive effect of personal belief in a just world and a non-significant effect of general belief in a just world on organizational justice perceptions. As expected, organizational justice perceptions had a significant negative effect on work stress. The direct effects for both personal and general belief in a just world on work stress were not significant. However, importantly and as expected, the negative indirect effect of personal belief in a just world on work stress through organizational justice perceptions was negative and significant whereas the indirect effect of general belief in a just world on work stress was non-significant. Second, considering job satisfaction, as predicted, personal belief in a just world, and not general, had a positive effect on organizational justice perceptions. Organizational justice perceptions positively influenced job satisfaction. Once again the direct effects of personal and general belief in a just world on job satisfaction were non-significant. However, as predicted, the indirect effect of personal belief in a just world on job satisfaction through organizational justice perceptions was positive and significant whereas the indirect effect of general belief in a just world was non-significant.

Table 3. Bootstrap Estimates for the Total, Direct and Indirect Effects of Personal and General Belief in a Just World and Organizational Justice Perceptions on Work Stress and Job Satisfaction

| Independent variable | Mediating variable | Effect of BJW on OJ | Effect of OJ on outcome | Direct effect | Indirect effect | 95% CI of indirect effect |
|---|---|---|---|---|---|---|
| *Dependent variable: Work Stress* | | | | | | |
| BJW P | OJ | .12** | -.33** | .018 | -.038*** | (-.062; -.018) |
| BJW G | OJ | -.05 | -.33** | -.034 | .016 | (-.002; .037) |
| *Dependent variable: Job Satisfaction* | | | | | | |
| BJW P | OJ | .10** | .47** | -.008 | .046** | (.017; .074) |
| BJW G | OJ | -.05 | .47** | .025 | -.022 | (-.049; .002) |

*Note.* Bootstrap estimates were generated with 1000 samples and 95% bias-corrected confidence intervals. BJW P = personal belief in a just world. BJW G = general belief in a just world. OJ = organizational justice perceptions.
* $p < .05$. ** $p < .01$, *** $p < .001$

To verify the independent effects of both personal and general belief in a just world, the pathway from these two variables to organizational justice perceptions were successively fixed to zero. After fixing the pathway for personal belief in a just world to zero, the effects pertaining to general belief in a just world were still non-significant. Additionally, fixing the path from general belief in a just world to organizational justice as zero, did not change the estimates or the significance of the results for personal belief in a just world.

As a first robustness check, the previous models for work stress and job satisfaction were estimated including the control variables, namely gender, age, survey language, supervisor status, neuroticism, extraversion, agreeableness, openness and conscientiousness (all assessed at T1). For both the work stress and job satisfaction models, modification indices greater than 20 suggested that some control variables should be allowed to correlate with each other. Adding the control variables to the models and allowing them to correlate did not substantially alter the path coefficients or the pattern of effects presented above. Model fit was as follows: work stress $\chi2 = 242.08$ , $p < .001$, with $\chi2/df = 5.50$, CFI = .935, TLI = .865, and RMSEA = .063 (90% CI .055; .071) and job satisfaction $\chi2 = 201.73$, $p < .001$, with $\chi2/df = 4.58$, CFI = .945, TLI = .887, and RMSEA = .056 (90% CI .049; .064).

As a second robustness check, we wanted to make sure that relations between the focal variables were not confounded by a change in participants' employment situation between T1 and T2. Therefore, only the participants who did not experience a significant professional change (i.e. those who remained in the same job and same role) between the two time points ($n = 931$, $M_{age} = 43.07$, 49% male, 63.8% German speaking) were selected and the models reran. Once again, there was no change in terms of the path coefficients and the pattern of results pertaining to indirect and direct effects. Model fit was as follows: for work stress $\chi2 = 4.46$, $p < .05$, with $\chi2/df = 4.46$, CFI = .998, TLI = .964, and RMSEA = .061 (90% CI; .013;

.123); for job satisfaction $\chi 2 = .830$, $p$ = ns, with $\chi 2/df = .830$, CFI = 1.00, TLI = 1.00, and RMSEA = .00 (90% CI .00; .084).

In summary, results confirmed our hypotheses. Personal but not general belief in a just world had an indirect effect on work stress and job satisfaction through organizational justice perceptions. Notably, this effect persisted over a one-year time frame, and after controlling for work stress and job satisfaction at T1. Moreover, it is robust, i.e., it was not altered by accounting for the impact of core personality traits, demographics, or changes in the work environment.

## 4. Discussion

Inspired by just world theory and theories of organizational justice, this study brings together two streams of research on justice, showing that believing that the world is a just place –where one gets what one deserves– augments perceptions of organizational justice, which in turn foster well-being at work. Importantly, this pattern of results persisted over a year and after accounting for the impact of core personality traits or significant changes in the work environment. It contributes to the literature in several ways, as delineated in more detail in what follows.

The fact that organizational justice perceptions are influenced by personal just world beliefs suggests that organizational justice perceptions do not only vary as a function of the organizational environment. In fact, they are shaped considerably by fundamental beliefs about how justice comes about in one's own life. This finding is line with previous conceptualizations of organizational justice as a category of motivated behavior (Cropanzano et al., 2001) that is linked to core aspects of the self (Skitka et al., 2010). It suggests that individual characteristics are significantly intertwined with how individuals experience justice related events in the workplace. Individuals who believe the world is just where they

get what they deserve may look for organizational cues that support their belief, re-interpret those cues that would contradict it, which in turns leads to favorable appraisals of organizational justice.

Importantly, this study showed that it is personal belief in a just world, and not general belief in a just world, that shapes perceptions of organizational justice and, indirectly, fosters well-being. This finding contributes to the growing body of literature reinforcing the distinction between personal or self-oriented and general or other-oriented just world beliefs (Dalbert 1999; Sutton & Douglas, 2005). Results from our study confirm that personal and general beliefs in a just world are specific in their effects. This is especially important in light of previous studies that have only tested the effects of personal belief in a just world and not compared personal and general belief in a just world (Otto et al., 2009). General belief in a just world had no effect on organizational justice perceptions nor indirect effect on well-being even when the effect of personal belief in a just world was constrained to be zero. Thus, results clearly demonstrate that the two just world beliefs are related but have distinct effects on outcomes one year later.

The indirect effects of personal just world beliefs demonstrate that personal just world beliefs are particularly adaptive and an important, yet distal, resource in the organizational environment. Effects are in agreement with the trust and assimilation functions of belief in a just world, which give it the character of personal resource and that have several positive implications for mental health. Indeed, the trust function implies a mechanism of expectations for just treatment (Dalbert 1998; 2001); the assimilation function implies cognitive mechanisms such as re-interpretations of unfavorable events (Dalbert, 1999), both contributing to increased mental health (Bobocel & Hafer, 2007; Otto & Schmidt, 2007). Results from this study may be best indicative of the trust and assimilation functions – individuals trust the overall fairness of their work environment, expect just treatment from

others, and assimilate experiences of injustice, all of which augment perceptions of organizational justice, and, eventually, foster job satisfaction and reduce work stress.

The effects of just world beliefs on organizational justice and work-related well-being were remarkably robust. Accounting for the impact of participants' core personality traits and significant changes in their work environment did not alter them. Of all the control variables, neuroticism had the clearest effect. This is in line with previous research demonstrating its strong impact on perceptions of organizational justice (e.g Cohen-Charash & Spector, 2001; Colquitt et al., 2001), belief in a just world (Dzuka & Dalbert, 2002; Lipkus et al., 1996) and well-being (Judge et al., 2002; Mroczek & Almeida, 2004). In this light, it is particularly noteworthy that the indirect effect of personal belief in a just world on well-being, through justice perceptions, persisted, after controlling for neuroticism. Finally, estimating the model in the sample of participants who had maintained the same professional situation between the two measurement points also did not alter the pattern of results. Thus, results were not due to changes in the work environment but rather reflect true relations between just world beliefs, perceptions of organizational justice, and well-being at work.

Results showed some different associations between organizational justice perceptions with job satisfaction and with work stress. Organizational justice perceptions and job satisfaction both represent more cognitive evaluations of the workplace. The presence of (in)justice may directly relate to the aspects that are evaluated in job satisfaction appraisals, as evidenced by a clear association between organizational justice and job satisfaction found in this study and elsewhere (e.g. Cohen-Charash & Spector, 2001). But it also seems that job satisfaction affects appraisals of organizational justice over time as indicated by the improvement in model fit when this pathway was included in the model.

Work stress represents a more affective aspect of well-being, and may therefore the organizational justice perceptions – work stress link may rest on organizational injustice

being appraised as a stressor, and organizational justice as a resource or element of job control (Judge & Colquitt, 2004) or on a specific component of justice known to provoke strong emotional reactions such as interactional injustice (see for example, Greenberg, 2006). Evidence for this is found in our study; when including a pathway between organizational justice at time 1, and work stress at time 2, the model fit was improved.

A final note on the relation between just world beliefs and organizational justice seems warranted. Based on theory and previous studies, we proposed that just world beliefs shape organizational justice perceptions. But is the reverse relation also possible? Given the fundamental nature of the belief that the world is a just place, representing an essential human need (Lerner, 1980), just world beliefs do not change easily as a function of experiences. In fact, previous research showed that changes in just world beliefs only occur in response to serious and persistent life events such as long-term unemployment, imprisonment, or becoming a victim of war (Cubela Adoric, 2004; Fasel & Spini, 2010; Otto & Dalbert, 2005). As such it seems unlikely that everyday experiences of workplace fairness alter the strength of just world beliefs, unless they are drastic and enduring. There is of course the possibility that justice beliefs and organizational justice, depending on the specific situation, mutually reinforce each other, such that a reciprocal relationship exists between these two constructs. Furthermore, belief in a just world may not only influence perceptions of organizational justice, but also promote the development of just environments. Belief in a just world reflects the justice motive; an individual's desire to strive for justice itself (Dalbert, 2009; Lerner, 1977) suggesting that strong just world believers may in fact create just environments by promoting practices that fulfill their basic need for justice. Such practices may in turn affect and strengthen their perception of fairness. Such effects could be explored in future research, as further outlined in what follows.

### 4.1. Limitations and future research

Every study has its challenges, and some aspects that should be considered when interpreting these results are mentioned here. First of all, the design is not fully longitudinal as only two waves of data could be used. This means that some of the limitations, such as biased estimates for the association between two variables measured at the same time point may apply. Even though we controlled for the association between variables measured as the same time point as well as for prior levels of the dependent variable and the mediator in our analyses, the design does not allow for making fully causal claims. In fact, in addition to the effect of just world beliefs in organizational justice, reciprocal effects between just world beliefs and organizational justice may exist where the two mutually reinforce each other. Future research should explore such effects using a fully longitudinal design, with at least three waves.

Although longitudinal designs overcome some problems associated with cross-sectional research, they have some unique challenges. The duration of the time lag between measurement points is one such aspect. Ideally, this should be as close as possible to the true underlying casual lag; if the study time lag is too short, there is the possibility that the effects have not yet had time to develop, and if the lag is too long, then the effect may no longer exist (Taris & Kompier, 2014). In this study, a one-year time lag seemed appropriate considering the aim to test the effects of a relatively stable individual difference. However, it is possible that the time lag was too long, as may be evidenced by the absence of direct effects of personal belief in a just world and the relatively small (albeit significant) indirect effects. Future longitudinal studies could use shorter intervals between measurement points and thus possibly unravel additional direct effects on well-being.

As mentioned above, effects of just world beliefs were relatively small. Nevertheless, they are robust as shown by the robustness checks that we conducted. Moreover, they were

tested with data drawn from a representative sample. While the sample is one of the strengths of this research this may also explain the relatively small effects, as the sample covers a wide range of working and personal conditions. Future research should replicate our findings using a more homogenous sample.

### 4.2. Conclusion

Results of this research suggest that individuals who believe that what happens in their life is just, and that they deserve what they get, are more satisfied with their job and less affected by work stress because they perceive more organizational justice. But the beneficial effects of strong personal just world beliefs may reach well beyond work-related well-being, because individuals who are engaged with their job and who are less stressed are more productive, more willing to help others, and display higher levels of organizational commitment. Ultimately, strong just world believers may contribute significantly to constructing more workplace fairness by treating others more fairly themselves. All in all organizations might want to consider belief in a just word as a desirable characteristic to find in future employees, a sort of foundation upon which to build fruitful work experiences.

## VII. Selective Incivility: Immigrant Groups Experience Subtle Workplace Discrimination at Different Rates

Reproduction of the following article:

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Abstract

Immigrants play an increasingly important role in local labor markets. Not only do they grow steadily in number but also in cultural, educational, and skill diversity, underlining the necessity to distinguish between immigrant groups when studying discrimination against immigrants. We examined immigrant employees' subtle discrimination experiences in a representative sample in Switzerland, controlling for dispositional influences. Results showed that mainly members of highly competitive immigrant groups, from immediate neighbor countries, experienced workplace incivility and that these incivility experiences were related to higher likelihoods of perceived discrimination at work. This research confirms recent accounts that successful but disliked groups are particularly likely to experience subtle interpersonal discrimination.

Keywords: discrimination, incivility, immigrants, diversity

## 1. Introduction

During the last decade, immigrants accounted for 70% of the increase of the workforce in Europe and for 47% in the United-States (US; OECD, 2012a). Currently, they make up 16% of the workforce in the US, 21% in Canada, and 27% in Switzerland, i.e., the country where the present study was conducted (OECD, 2012b; Swiss Federal Statistics Office SFSO, 2012). Immigrants have not only increased in number but also in cultural, educational and skill diversity. For example, in 2000, most immigrants to the US came from Hispanic countries, while in 2012 most immigrants came from Asia (Pew Research Center, 2012). Similarly, most of the earlier immigrants to Switzerland came from Southern Europe while today most immigrants come from Western European neighbor countries (Liebig, Kohls, & Krause, 2012). These new immigrants have higher education levels and work in higher-status positions than earlier immigrants, responding to many nations' increasing demand for highly skilled labor.

In research on workplace discrimination, immigrants have received little attention. However, theories of subtle prejudice and workplace discrimination suggest that immigrants are likely targets of subtle forms of prejudice and discriminatory behaviors (Cortina, 2008; Pettigrew & Meertens, 1995). Subtle, interpersonal discriminatory behaviors particularly target members of groups perceived as competent competitors (Cortina, 2008; Fiske, Cuddy, Glick, & Xu, 2002). Hence, members of recent, highly skilled immigrant groups may experience more subtle discrimination than members of earlier, less skilled immigrant groups.

This was the starting point of the present research. It studied the experience of subtle workplace discrimination of immigrants and locals in a representative sample of employees in Switzerland. We focused on the experience of incivility, that is, of being the target of low-intensity discourteous interpersonal behaviors (Andersson & Pearson, 1999). Incivilities are

general but if they selectively target a minority group, grounded in diffuse anti-minority feelings and stereotypes, they become a form of subtle interpersonal discrimination (Cortina, 2008). Because immigrants are targets of subtle prejudice and mainly associated with mixed, ambivalent stereotypes (Lee & Fiske, 2006; Pettigrew & Meertens, 1995), we expected immigrants to experience more incivility than locals. Further, theories of intergroup competition and stereotype content suggest that groups perceived as competitive, highly competent but as little likeable, experience more subtle discrimination (Esses, Dovidio, Jackson, & Armstrong, 2001; Fiske et al., 2002). Indeed, depending on their national origin, immigrant groups differ remarkably on perceived competence and likeability (Lee & Fiske, 2006). We hence expected immigrants belonging to groups perceived as highly competent but less likeable to be particularly frequent targets of incivility. Importantly, these differences are expected above and beyond other personal characteristics (e.g., neuroticism) related to experiencing incivility and discrimination.

In the remainder of the introduction, we first outline the concept of selective workplace incivility as subtle discrimination against immigrant employees. Then, we describe how differences in stereotypes of national/ethnic groups within the immigrant population may affect rates of experienced workplace incivility. Finally, we discuss possible relations between experiences of incivility and perceived discrimination.

### 1.1. Selective incivility as subtle discrimination against immigrants

At the base of subtle discrimination are subtle prejudice and stereotypes (Cortina, 2008; Dipboye & Halverson, 2004). Subtle prejudices encompass the belief that discrimination is a thing of the past, that minority groups' claims are unfair and that there are large (cultural) differences between social groups (Gaertner & Dovidio, 1986; McConahay, 1986; Swim, Aikin, Hall, & Hunter, 1995). These beliefs present a subtle, ostensibly rational form of expressing prejudice and help people preserve a non-prejudiced self-image. In a similar vein,

recent work on the content of stereotypes has shown that most group stereotypes are mixed, that is, contain positive (e.g., trustworthy) and negative (e.g., incompetent) elements (Fiske et al., 2002). Due to the positive elements, many stereotypical beliefs are subjectively experienced as non-prejudicial (Glick & Fiske, 1996; 2001). Subtle prejudices and mixed stereotypes result in interpersonal rather than in formal discrimination (Hebl, Foster, Mannix, & Dovidio, 2002). Interpersonal discrimination emerges in social interactions at work, including verbal, nonverbal and paraverbal behaviors, and is subtler and more compatible with a non-prejudiced self-image than formal, more direct discrimination, which occurs for example at hiring or promotion and is, in most countries, against the law.

Cortina (2008) recently proposed that workplace incivility may take the form of subtle, interpersonal discrimination. Incivility is "low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others" (Andersson & Pearson, 1999, p. 457). It encompasses behaviors such as interrupting, ignoring or using a condescending tone. Despite their low-intensity, these behaviors have several detrimental consequences for targets, such as greater levels of stress, lower commitment and job satisfaction, or higher quit rates (Pearson & Porath, 2004).

When incivility selectively targets members of minority groups, based on ambivalent anti-minority feelings and stereotypes, it becomes discrimination (Cortina, 2008). This discrimination is subtle; due to the ambiguous nature and apparent neutrality of the uncivil behaviors, instigators easily find (consciously or not) non-prejudicial explanations for their conduct (e.g., "I have too much work"). Selective incivility is hence a particularly well-suited means by which people may mistreat minorities without damaging their non-prejudiced image of themselves and towards others.

Recent studies provide first empirical evidence for such targeted incivilities: Women and people of color reported higher rates of uncivil treatment at work than men and Whites (Cortina et al., 2002; Cortina, Kabat-Farr, Leskinen, Huerta, & Magley, 2013). In this research, we examined incidence rates of incivility for immigrants, compared to locals. Incidence rates for immigrants have not been tested yet but several elements suggest that immigrants are likely targets. Firstly, immigrants are targets of subtle prejudice (Akrami, Ekehammar, & Araya, 2000; Pettigrew & Meertens, 1995). Further, immigrants are mainly associated with ambivalent or mixed stereotypes, which encompass positive and negative features: Most immigrant groups are either perceived as incompetent but nice (e.g., Irish immigrants in the US or Portuguese immigrants in Switzerland) or as competent but less likeable (e.g., Asian immigrants in the US or German and French immigrants in Switzerland) (Lee & Fiske, 2006; Binggeli, Krings, & Sczesny, 2014). Subtle prejudice towards immigrants and mixed immigrant stereotypes provide the attitudinal and cognitive basis for subtle mistreatments at work. Secondly, earlier research on employment discrimination has shown that subtle prejudice indeed fosters discrimination against immigrants (Krings & Olivares, 2007; Petersen & Dietz, 2005). Finally, immigrants themselves report feeling discriminated against at work (Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2007; Kravitz & Klineberg, 2000). So we expected the following:

*Hypothesis 1:* Immigrants report more experiences of workplace incivility than locals.

When analyzing differences between social groups, it is important to control for personality differences because certain characteristics of the target may contribute to the likelihood of experiencing discriminatory behaviors (Munson, Hulin, & Drasgow, 2000; Milam, Spitzmueller, & Penney, 2009). For example, people low in agreeableness or high in neuroticism tend to be distrustful and display discourteous, bothersome behaviors (Costa & McCrae, 1987). They may thus be more likely to perceive an event as rude, as well as to

provoke uncivil behaviors from others as a reaction to their own behaviors. Indeed, people low in agreeableness and high in neuroticism experience more incivility (Milam et al., 2009). As a consequence, for testing our hypotheses, we controlled for employees' level of neuroticism and agreeableness, to assure that effects of group membership would persist, above and beyond those of individual differences.

1.2. Some immigrant groups are more likely targets of incivility than others

The global stereotype of immigrants as a group is that they are untrustworthy and incompetent (Eckes, 2002). However, recent work suggests that immigrants should not be treated as one entity: Stereotypes of immigrants differ remarkably between groups depending on the group's country of origin. Drawing on the stereotype content model (Fiske et al., 2002), Lee and Fiske (2006) showed that perceptions of warmth (being good-natured, kind) and competence (being intelligent, skillful) of immigrant groups differed as a function of the groups' national origin. These perceptions result from socio-structural relations between locals and immigrant groups: Immigrant groups viewed as high status are perceived as high in competence and groups viewed as competing for resources are perceived as lacking warmth.

Importantly, different warmth and competence stereotypes give rise to more or less hostile behaviors (Cuddy, Fiske, & Glick, 2007; Sibley, 2011). As outlined above, mixed stereotypes provide the foundation for subtle behaviors undermining equality. Hence, most immigrants should be likely targets of subtle mistreatments at work. However, groups perceived as warm but incompetent should be somewhat less targeted than groups perceived as cold but competent because the latter elicit more hostility, especially when they gain more status or power (e.g., when they are successful in the labor market) than the former (Cuddy, Fiske, & Glick, 2008; Fiske et al., 2002). Their clear competence and ability makes it difficult to blatantly discriminate against them. However, their perceived lack of

interpersonal warmth and sociability makes it easier to subtly discriminate against them, in everyday social interactions at work (e.g., by addressing them in unprofessional terms). Similarly, Cortina (2008) argued that professionally successful women and black professionals are particularly prone to experience selective incivility because they are considered (excessively) competent and ambitious, ultimately threatening the dominant position of the majority.

These considerations suggest that immigrants belonging to national/ethnic groups perceived as competent but cold are more likely targets of workplace incivility. In Switzerland, it is immigrants from the immediate neighbor countries (Germany and France) that receive this stereotype. They are perceived as highly competent but less likeable, as demonstrated by a recent analysis of warmth and competence stereotypes of the most salient immigrant groups in Switzerland (Binggeli et al., 2014). Four groups emerged from this analysis: (1) immigrants perceived as low in competence and low in warmth, comprising immigrants from the Balkans, Turkey and Eastern Europe, (2) immigrants perceived as moderately warm but incompetent, with immigrants from Africa, (3) immigrants perceived as highly warm but moderately competent, comprising immigrants from Southern Europe, and, finally, (4) immigrants perceived as highly competent but lacking warmth, consisting of German and French immigrants. Warmth perceptions of German immigrants were particularly low in the German-speaking region of Switzerland, whereas warmth perceptions of French immigrants were particularly low in the French-speaking region.

The number of German and French immigrants has multiplied since Switzerland introduced freedom of movement for people from European-Union member states in 2002 (Liebig et al., 2012). Since then, no other immigrant group has increased in size as considerably and as rapidly as they have. Today, these immigrants are among the three largest immigrant groups in Switzerland. Compared to immigrants from other nations, they

have a strong competitive advantage: They speak one of the two main national languages of Switzerland (i.e., German or French) and tend to be highly educated. Hence, it is no surprise that they have higher employment rates and are more likely to work in high status positions than any other immigrant group, and even than locals (SFSO, 2012). The competitiveness of these groups has lead to a heated public debate, revealing that they are perceived as a threat and strong competitors for desirable resources such as jobs. Indeed, the perceived competitiveness of these groups explains their low levels of likeability or perceived warmth (Binggeli, Krings, & Sczesny, 2013b). Taken together, in certain ways, German and French immigrants are comparable to Asians in the US, which is a group that too is very successful on the labor market and that too is stereotyped as excessively competitive and highly competent, but as lacking sociability (Lin, Kwang, Cheung, & Fiske, 2005; Lee & Fiske, 2006).

In sum, based on German and French immigrants' high-competence/low-warmth stereotype as well as their strong competitiveness, we expected the following:

*Hypothesis 2*: Immigrants from France and Germany report more experiences of workplace incivility than immigrants of other nations, so that German and French immigrants report the highest rate of incivility, followed by other immigrants, followed by locals.

1.3. Linking selective incivility and perceived discrimination

To what extent incivility experiences fuel perceptions of discrimination by the target is an open question. On the one hand, given the apparently neutral and ambiguous nature of incivility, it may be difficult for targets to recognize it as discrimination (Cortina, 2008). Targets may be just as ready to find non-prejudicial explanations for receiving uncivil treatment as instigators do for acting uncivil. On the other hand, over time, targets may realize that they are mistreated more frequently than their colleagues and come to realize that being the target is related their minority status. Moreover, if incivility selectively targets their

group, they are likely to observe that other members of their group are treated similarly, further highlighting the discriminatory component and increasing the probability of feeling discriminated against.

To our knowledge, the relation between selective incivility and perceived discrimination has not been empirically tested yet. In the light of the considerations above, we analyzed the relation in an exploratory manner.

## 2. Method

### 2.1. Participants and procedure

This study is part of a larger, longitudinal project, hosted by the National Centre of Competence in Research LIVES. Data for this study are from the first data collection wave in 2012. A representative sample of the working age population living in Switzerland was drawn based on a random sample from the Swiss Federal Statistics Office. Sampling was targeted at the two largest linguistic regions, the German-speaking and the French-speaking regions, and was representative in terms of age, gender, linguistic region, and nationality.

Participants ($n$ = 2001) completed a research protocol consisting of two steps. The first part, completed by a computer-assisted telephone interview or as an on-line questionnaire, aimed to explain the goal of the study, verify the inclusion criteria (e.g., age between 25 and 55, living in Switzerland) and determine the participants' professional situation and biography. The second part, completed via a paper-pencil or as an on-line questionnaire, assessed aspects of the work and social environment, personal characteristics and general outcomes. Most participants (79%) completed both parts online. Most (67%) of the local and immigrant participants answered the questionnaire in German. This proportion corresponds to the percentage of people living in the German part, i.e., in Switzerland's largest linguistic region.

The University of Lausanne does not have an institutional review board for psychology or social science research. This research thus applied the ethical standards of the Swiss Psychological Society. Accordingly, the survey avoided any treatment that might have a detrimental effect on the well-being or integrity of participants. During the first part, participants were informed about the purpose of the study and were ensured their data would remain confidential. Agreement to participate by responding to the questions and filling out the questionnaire was taken as consent.

For the present research, we included only employed participants. The resulting sample consisted of 1661 employees, of which 1359 were Swiss and 302 were immigrants. Hence, 18% of participants were immigrants. This is somewhat lower than the current percentage of immigrants in the Swiss workforce (27%) and can be explained by the study's inclusion criteria (e.g., only workers between age 25 and 55 were included) and by the fact that participants needed sufficient proficiency in French or German to participate.

Of the immigrant participants, 43.4% came from France or Germany. The remaining immigrants, grouped into one category for the analyses, came from various countries: 24% came from Southern European countries (e.g., Portugal, Spain), 11% from Northern European countries (e.g., Norway, Sweden), 8% from the Balkans (e.g., Bosnia, Croatia) or Turkey, 4% from countries in Eastern Europe or central Asia (e.g., Ukraine, Russia), and the rest (9.6%) from various countries in Asia, Northern or Southern America. Most (63%) had permanent residence permits, 37% had annual residence permits that are easily renewed if immigrants are still employed.

Half of the local (49%) and immigrant participants (48%) were women. Locals were on average 42.15 years ($SD$ = 8.63) and immigrants 40 years ($SD$ = 7.87) old. Mean educational levels (ranging from 1 = *obligatory schooling*, 4 = *degree in higher education*) were 2.80 ($SD$ = 0.97) for locals and 2.90 ($SD$ = 1.14) for immigrants. Furthermore, educational mean level

comparisons suggest that immigrants from Germany and France were better educated, *M* = 3.31, *SD* = 0.91, than immigrants of other nationalities, *M* = 2.61, *SD* = 1.21, or locals, thus mirroring the current Swiss labor market (Liebig et al, 2012). However, these numbers should be interpreted with caution, for two reasons. Firstly, 120 participants (95 locals and 26 immigrants) did not indicate their education. Secondly, participants indicated their educational level with predefined categories that are used in the Swiss education system, which can be problematic because of differences in educational systems between countries.

The majority of locals (75.5%) and immigrants (84.9%) were employed at an activity rate of 80% and more, that is, they worked between 36.2 (80%) and 42 hours (100%) per week. A bit less than half of the participants (43% and 44% of locals and immigrants respectively) indicated holding a supervisory position. German and French immigrants were more likely to hold a supervisory position (54.2%) than other immigrants (36.3%) or locals (43%).

### 2.2. Measures

Descriptive statistics, correlations, and reliabilities (alpha coefficients) for the measures are reported in Table 1. Unless specified otherwise, a team of bilingual (French- and German-speaking) researchers translated scales that only existed in English into French and German. A second team of bilingual researchers independently verified the translations, to make sure that the German and French versions were equivalent. The entire questionnaire was pre-tested for comprehensibility of instructions and items in a sample of 50 adults between the ages of 25 and 55 (25 women; 25 German-speaking; 25 French-speaking).

#### 2.2.1. Workplace incivility

Workplace incivility was measured with four items of the incivility measure developed by Cortina, Magley, Williams and Langhout (2001; see Table 2, p.70), choosing those items that showed the highest factor loadings in the initial validation study. More specifically, participants were asked to indicate how often during the past 12 months they had been in a

situation where any of their co-workers or supervisors (1) had put them down or was condescending, (2) paid little attention to their statement or little interest in their opinion, (3) made demeaning or derogatory remarks about them, (4) addressed them in unprofessional terms, either publicly or privately. Responses were indicated on 5-point scales, ranging from 1 = *never* to 5 = *most of the time*.

#### 2.2.2. Perceived discrimination

Perceived discrimination was assessed with a single item, similar to the one of the Gallup Survey, analyzed by Avery and McKay (2008). Participants were asked if they had been discriminated against, based on their ethnicity/nationality, within their workplace during the past 12 months. Responses were indicated as *yes* or *no*.

#### 2.2.3. Control variables

To isolate the effects of immigrant status and nationality on incivility, we included control variables related to participants' personality, demographics, and work context. Firstly, we controlled for participant agreeableness and neuroticism because people low in agreeableness and high in neuroticism experience more incivility (Milam et al., 2009). Traits were assessed with the 12 item-scales of neuroticism (e.g., "I often get angry at the way people treat me") and agreeableness (e.g., "I tend to assume the best about people") of the French (Aluja, García, Rossier, & García, 2005) and German versions (Borkenau & Ostendorf, 1993; Schmitz, Hartkamp, Baldini, Rollnik, & Tress, 2001) of the NEO Five Factor Inventory Revised (McCrae & Costa, 2004). Participants responded on 5-point scales, ranging from 1 = *strongly disagree* to 5 = *strongly agree.* Secondly, we controlled for gender and age. Women experience more incivility than men (Cortina et al., 2013). Older employees are more discriminated against than their younger counterparts (Gordon & Arvey, 2004), suggesting that they may become targets of selective incivility. Thirdly, we controlled for participants' activity rate because higher activity rates; i.e., being more present at the

workplace, may increase the probability to experience incivility. Activity rate was assessed with the following question: "What is your current rate of work? Take into account all current jobs and consider only paid activities". Responses were indicated on a 20-category scale, with each category spanning five percent (2.5 hours per week) (1 = *4% or less*, 20 = *95 to 100%*). Further, we controlled for organizational justice perceptions because low organizational justice is related to higher incidences of workplace aggression in general (Berry, Ones, & Sackett, 2007). Organizational justice was assessed with the short version of the questionnaire by Colquitt (2001), validated by Elovainio et al. (2010), that covers distributive (2 items, e.g., "Does your work situation reflect the effort you have put into your work?"), procedural (3 items, e.g., "Have you been able to express your views and feelings during those procedures?") and interpersonal justice (3 items, e.g., "Has your supervisor treated you with respect?"). For the interpersonal justice, we omitted one item ("Has your supervisor seemed to tailor his/her communications to individuals' specific needs?") because the item was difficult to translate adequately into French and German. Responses were indicated on 5-point scales (1 = *to a small extent*, 5 = *to a large extent*).

Table 1. Descriptives and Correlations of Study and Control Variables

| | *M* (*SD*) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 42.15 (8.63) | - | | | | | | | | | |
| 2. Gender | 0.49 (.50) | -.01 | - | | | | | | | | |
| 3. Activity rate | 18.49 (3.84) | -.11** | -.51** | - | | | | | | | |
| 4. Org. justice | 3.70 (0.63) | .03 | -.01 | -.02 | (.82) | | | | | | |
| 5. Agreeableness | 3.62 (0.45) | .12** | .22** | -.17** | .06* | (.70) | | | | | |
| 6. Neuroticism | 2.55 (0.59) | -.09** | .15** | -.10** | -.30** | -.12** | (.83) | | | | |
| 7. Incivility | 6.45 (2.84) | -.00 | -.00 | .06* | -.45** | -.07** | .22** | (.85) | | | |
| 8. Perc. discrimination | 0.05 (0.02) | -.07* | -.02 | .03 | -.08** | -.08** | .06* | .14** | - | | |
| 9. GE/FR immigrants | 0.08 (0.27) | -.08** | -.01 | .05 | .00 | -.03 | .03 | .05 | .24** | - | |
| 10. Other immigrants | 0.10 (0.30) | .07** | .00 | .07** | -.03 | .00 | .02 | -.02 | .13** | -.10** | - |

*Note*. Org. justice = organizational justice. Perc. discrimination = Perceived workplace discrimination based on national or ethnic origin (coded as 0 = *no* and 1 = *yes*). GE/FR immigrants = German or French immigrants (0 = *local*, 1 = *German or French immigrants*). Other immigrants = immigrant of nationalities other than German or French (0 = *local,* 1 = *other immigrants*). Gender was coded as 0 = *male,* 1 = *female.* Age was assessed in years. Activity rate was assessed in percentages (1 = *4% or less*, 20 = *95 to 100%*).
Reliabilities are shown in parentheses along the diagonal. For all correlations *n* between 1640 and 1661.
$p < .05$ ** $p < .01$

## 3. Results

Hypotheses were tested with multiple regressions, with age, gender, neuroticism, agreeableness, activity rate and organizational justice as control variables[1], nationality (locals vs. German and French immigrants vs. immigrants of other nationalities; dummy-coded) as predictor, and incivility sum scores as criterion[2]. To test both the effect of immigrant status (being an immigrant vs. a local) and of immigrant nationality (being a German or French immigrant vs. an immigrant of another nationality) as stated in H1 and H2, two dummy codings for nationality were used that differed with respect to their reference category: locals, in Model 1, and immigrants of nationalities other than French or German in Model 2.

For the control variables, results of the final model showed that people with higher activity rates, those high in neuroticism and people perceiving more organizational injustice reported more incivility. Further, as expected, German or French immigrant experienced more incivility ($M = 6.89$, $SD = 3.15$) than locals ($M = 6.42$, $SD = 2.85$) (see Model 1, Table 2). German and French immigrants also experienced more incivility than immigrants of other nationalities ($M = 6.31$, $SD = 2.54$; see Model 2, Table 2). However, the latter did not experience more incivility than locals did.

In sum, H1 received partial support: Not all immigrants experienced more incivility than locals; only German and French immigrants did. In support of H2, German and French immigrants experienced more incivility than immigrants of other nationalities.

To explore relations between selective incivility and perceived workplace discrimination, we analyzed the joint impact of nationality and incivility on perceived discrimination, using logistic regressions, with perceived discrimination as criterion. As in the previous models, gender, age, activity rate, organizational justice, agreeableness and neuroticism were entered as control variables. Nationality (dummy-coded, in two sets; see above) and incivility were entered as predictors. Among the control variables, only

agreeableness was related to perceived discrimination, $B$ = -0.63, $SE$ = 0.31, Odds Ratio (OR) = 0.54, $Chi^2(9) = 120.49$, $p < .001$, indicating that people low in agreeableness were more likely to report having been discriminated against. Among the main variables, immigrant status was related to perceived discrimination: Both being a German or French immigrant, $B$ = 2.61, $SE$ = 0.31, OR = 13.47, $p < .001$, and being an immigrant of another nationality, $B$ = 1.99, $SE$ = 0.33, OR = 7.32, $p < .001$, increased the probability to report having been discriminated against. Finally, incivility too was related to perceived discrimination: Experiencing more incivility increased the probability to report having been discriminated against, $B$ = 0.17, $SE$ = 0.04, OR = 1.18, $p < .001$.

Table 2. Regression Results for Immigrant Status and Nationality, Predicting Experiences of Incivility at Work

| Predictor | *Model 1* | | *Model 2* | |
|---|---|---|---|---|
| | *B* | *SE* | *B* | *SE* |
| Control variables | | | | |
| Age | 0.01 | 0.01 | 0.01 | 0.01 |
| Gender | 0.14 | 0.15 | 0.14 | 0.15 |
| Activity rate | 0.05** | 0.02 | 0.05** | 0.02 |
| Organizational justice | -1.96** | 0.10 | -1.96** | 0.10 |
| Neuroticism | 0.47** | 0.11 | 0.47** | 0.11 |
| Agreeableness | -0.16 | 0.15 | -0.16 | 0.15 |
| Locals vs. GE/FR immigrants | 0.46* | 0.23 | - | - |
| Locals vs. other immigrants | -0.24 | 0.21 | - | - |
| Other immigrants vs. GE/FR | - | - | 0.70* | 0.29 |
| Other immigrants vs. locals | - | - | 0.24 | 0.21 |

*Note*. Adjusted $R^2$ = .23, $F(8, 1625) = 60.79$, $p < .001$. GE/FR immigrants = German or French immigrants. Other immigrants = immigrant of nationalities other than German or French. Gender was coded as 0 = *male,* 1 = *female.* Age was assessed in years. Activity rate was assessed in percentages (1 = *4% or less*, 20 = *95 to 100%*).
$p < .05$ ** $p < .01$

## 4. Discussion

This study makes novel contributions to research on workplace discrimination. Firstly, immigrant employees' experiences of incivility are shown for the first time using a representative sample, drawing attention to an increasingly important but often forgotten minority in the I/O psychology literature (Binggeli, Dietz, & Krings, 2013a). Secondly, it shows that subtle discrimination can be highly selective, mainly targeting those immigrant groups who are perceived as highly competitive and competent but as less likeable. This result also underlines that discrimination against immigrants can only be understood when taking the diversity within this group into account. Thirdly, by uncovering relations between experiences of incivility and perceived discrimination for the first time, it provides direct empirical evidence for the claim that selective incivility is indeed a form of discrimination. Finally, it is important to note that effects persisted above and beyond those of personality traits known to influence the experience of discriminatory behaviors.

More specifically, drawing on Cortina's (2008) model of subtle discrimination, we studied immigrants' incivility experiences, compared to locals. Results revealed that not all immigrants experienced more incivility than locals. Rather, it was mainly immigrant groups from the immediate neighboring countries, who have multiplied in number during the past decade, and who are very competitive and successful on the local labor market. However, competitiveness costs liking: These groups are perceived as highly competitive and competent but as lacking socio-emotional warmth (Binggeli et al., 2013b). As such, they receive similar stereotypes such as Asians in the US do (Lin et al., 2005; Lee & Fiske, 2006), suggesting that this group too may experience higher rates of workplace incivility. The combination of low warmth with high competence may be what makes these groups likely targets of subtle interpersonal discrimination: Whereas their high levels of competence are difficult to deny and (reluctantly or not) given credit for by locals, they are denigrated on

warmth, i.e., perceived as lacking in warmth and sociability, which may provide the basis for locals to treat them disrespectfully on an interpersonal level.

We also found that immigrant groups were more likely than locals to report having been discriminated against on the basis of their national/ethnic origin, at work, and that these perceptions were, in part, fueled by incivility experiences. This result has at least two implications. First, the linkage between incivility and perceived discrimination corroborates the claim that incivility can be a form of discrimination. It also suggests that while incivility is subtle from the instigator's perspective, it may be less subtle from the target's perspective. Secondly, it underlines the toxic nature of seemingly mild discourteous behaviors at work. Incivility experiences have various negative consequences for targets, e.g. for their well-being or organizational commitment (Pearson & Porath, 2004). They also increase intentions to quit (Cortina et al., 2013). Incivility experiences combined with feelings of being discriminated against may further reinforce intentions to leave one's job and ultimately drive immigrants out of their workplaces.

We controlled for age and gender in our analyses because these groups are often targets of workplace discrimination. However, neither women nor older employees of our study experienced more incivility, which may be explained by several factors. First, unlike earlier studies testing the effects of gender and age (Cortina et al., 2013), we controlled for personality factors when predicting incivility. Indeed, neuroticism was closely related to reports of incivility, corroborating earlier findings (Milam et al., 2009), and underlining the necessity to control for stable individual differences, to isolate the effect of group membership on incivility. Second, analyses were based on a representative sample of the working age population and hence covered employees in a wide range of organizations and occupations. Incivility may be more pronounced in organizational contexts where older employees or women are perceived as "not belonging", due to social stereotypes, such as, for

example successful women in male-dominated environments (Cortina, 2008; Cortina et al., 2013) or older employees in an organization characterized as young and dynamic (Diekman & Hirnisey, 2007). Finally, the absence of higher incivility rates for older compared to younger employees is in line with earlier findings (Cortina et al., 2013). One explanation may be found in the age limit applied in this study (i.e., age 55), possibly excluding those who would experience the most age discrimination. Another explanation may lie in the older worker stereotype that describes older employees as incompetent (i.e., low in competence) but nice (i.e., high in warmth) (Krings, Sczesny, & Kluge, 2011). Even though mixed stereotypes in general can fuel subtle interpersonal discrimination, results of our study and of other research suggest that the main drivers of interpersonal discrimination may reside with the combination of low warmth/high competence perceptions (Cuddy et al., 2008). Being perceived as incompetent but harmless and trustworthy may thus actually protect individuals from experiencing interpersonal mistreatments.

### 4.1. Study limitations and future research

This study has limitations, and we would like to point out three. Firstly, in order to participate, immigrants needed sufficient knowledge of one of the two largest national languages. Even though participation required only basic language skills as questions were kept simple, immigrants who did not speak these languages or only very poorly were not included. Further, only legal immigrants with a work permit were included. Consequently, illegal immigrants or immigrants that were less well integrated or well off, due to language problems, were not represented. Reaching these groups is a general and recurrent difficulty in survey research with immigrants (Lagana, Elcheroth, Penic, Kleiner, & Fasel, 2013). However, they make up an important part of the immigrant population, and they are likely to experience discrimination. To attain a more complete picture of immigrants' work experiences, future research should invest more efforts to include them.

Secondly, effects of immigrant status on incivility and of incivility on perceived discrimination were significant but modest. This may be due to the fact that analyses were based on a large representative sample and hence included a wide array of possible influencing factors. For this reason, we included several relevant control variables related to participant demographics and employment context in the analyses. We also controlled for the impact of personality traits that were significantly related to the outcome variables. Thus, even though effects were modest, they are robust. Further, the significant, albeit modest effect of incivility on perceived discrimination underlines that incivility is a subtle form of discrimination. Compared to blatant discriminatory acts, incivility's subtle, ambiguous nature makes it more difficult for targets to recognize it as discriminatory. Future research should investigate both relations of perceived discrimination with experiences of subtle and of more blatant discriminatory acts, whereas the former relation should be stronger than the latter or emerge only after a certain time; i.e., after repeated experiences of incivility.

Thirdly, this study was carried out with national/ethnic groups in Switzerland. We are not aware of comparable studies in other countries so results should be replicated in a different context (e.g., in a different country, with the according highly competent but little likeable immigrant groups).

### 4.2. Conclusion

Steadily increasing in number, immigrants play a progressively important role in local labor markets. Concurrently, they are a highly diverse group differing not only in terms of culture but also in terms of education and skill-level. For example, more recently, many countries have tried to attract larger numbers of skilled and educated immigrants, to combat shortages in highly skilled labor. Our research suggests that workplace discrimination experiences of these immigrants differ from those of earlier, less well-educated immigrants. Notably, the experience of subtle interpersonal discrimination of competitive immigrant

groups from immediate neighboring countries draws researchers' and organizations' attention to a group that is typically overlooked. These groups are believed to integrate easily into the host country and labor market, and hence tend to be forgotten when designing measures to combat discrimination against immigrants. Further, by underlining the discriminatory nature of these seemingly harmless discourteous behaviors, it highlights the need for policy makers and organizations to discuss how to better protect employees from workplace discrimination. The law prohibits discrimination but focuses on blatant rather than on subtle discriminatory acts, ultimately leaving members of groups experiencing selective incivility without legal protection.

## Footnote

1: In preliminary analyses, we added supervisor status as a control variable. However, supervisor status was unrelated to incivility and to perceived discrimination, for locals, German and French immigrants, and other immigrants, all *r*s between -.04 and .07, *ns*. Also, including it in the regression models did not change results or improve the model nor did supervisor status emerge as a significant predictor. We thus did not include it in the final models.

2: To make sure that regression coefficients were not biased by differences in sub-sample size, we re-ran the regression analyses generating 95% confidence intervals, based on 500 bootstrap samples. The pattern of results was identical the one reported in Table 2 or within the text.

# VIII. Conclusion

This thesis aimed to examine the contribution of both individual and professional factors to well-being, in terms of professional and general well-being. More specifically, five professional factors were considered; professional transitions, job insecurity, job characteristics, organizational justice, and workplace incivility. Multiple different individual characteristics were considered too; personality traits, orientations to happiness, belief in a just world, and career adaptability. Numerous well-being outcomes were also considered; satisfaction with life, self-rated health and general psychological health on a general level, and work stress and job satisfaction for work related outcomes.

While the introduction was structured according the five professional aspects and their implications for well-being to which the consideration of the individual was added, this general discussion is structured according to the main themes emerging from this research with the main results, implications, and future research associated with each. Where relevant, results are discussed in light of the CAPS theory. The discussion starts with the subject of well-being and follows the same three principles presented in the introduction; the relevance of professional situations for well-being, the contribution of individual characteristics, and finally the importance of the interface between the situation and the individual. Following this, the results pertaining to the validation of the career adaptability scale will be discussed, and then some considerations concerning immigrants in Switzerland will be offered. The conclusion will finish with a general discussion drawing across the different studies of limitations, critical reflections, and implications, and finally some concluding remarks will be offered.

1. Contributing factors to professional and personal well-being

The results reported in this thesis illustrate that professional situations do indeed impact on personal and professional well-being. Chapter 4 showed how job insecurity and job strain negatively relate to life and job satisfaction, and increase work stress and contribute to a worsening in psychological health. Results in chapter 5 showed that a move from unemployment to employment corresponded with an increase in life satisfaction, whereas remaining unemployed contributed to a decrease in life satisfaction. Finally, organizational justice perceptions foster job satisfaction and reduce work stress as shown in chapter 6. These findings confirm, in the Swiss context, the work of other researchers. However, the main aim of this thesis was not only to test for these main effects of the professional situation, but to jointly consider these along with the effects of the individual characteristics.

Various individual characteristics were included in this thesis as factors that contribute to well-being. In chapter 3, two of the dimensions of orientations to happiness, pleasure and engagement, contributed directly to the reduction of work stress. Personality traits were predictors of life-satisfaction and self-rated health over one year (chapter 5). Career adapt-abilities contributed to the reduction of work stress and promoted life satisfaction, job satisfaction, self-rated health and psychological health (chapters 3, 4 and 5). These results provide evidence for the direct effect of individual characteristics on well-being.

Results also showed the indirect effect of individual characteristics on well-being. The meaning dimensions of orientations to happiness only contributed to the reduction of work stress through the mediating mechanism, career adaptability (chapter 3). Personal belief in a just world also had no direct effect on professional well-being, but only an indirect effect through organizational justice perceptions (chapter 6). This finding points to where some of the main contributions of this thesis are found. They lie not only in the isolated effects of

individual characteristics on well-being, but rather in the joint consideration of the individual and the situation.

For all of the individual characteristics (with the exception of orientations to happiness), the associations between the individual characteristic and well-being took on a unique character in light of the different professional aspects that were considered. Thus it seems important to discuss this interface between individual and environmental aspects in relation to well-being. This in itself is not a new idea as, as mentioned in the introduction, various models applicable to well-being have given attention to both individual and situational factors (e.g. Kim-Prieto et al., 2005; Lazarus & Folkman, 1984; Lent, 2004; Mischel & Shoda, 1993; Robbins & Kliewer, 2000).

## 2. The interface between individual and situational characteristics

Rather than focusing on the isolated effects of either individual or situational characteristics on well-being, the introduction argued for a join consideration of these factors. The chapters in this thesis explored different combinations of individual and situational aspects and the results are grouped here as pertaining to career adapt-abilities, belief in a just world, and personality traits. This section will finish with a discussion pertaining to well-being in different life domains.

### 2.1. Career adapt-abilities as a mediator of personality traits and in response to environmental characteristics

Career adapt-abilities was tested and confirmed as a mediator in two different situations; it mediated the effect of orientations to happiness on work stress (chapter 3), and it mediated the effects of job strain and job insecurity on professional and general well-being (chapter 4). These two mediation effects capture different aspects of career adapt-abilities as a psycho-social resource involved in self-regulation. In the first case, career adapt-abilities mediated

the effect of a somewhat dispositional, trait-like individual characteristic. Rossier and colleagues (2012) also found that career adaptability mediated the effect of personality (extraversion, conscientiousness and neuroticism) on work engagement. Career adaptability also mediated the effect of hope on different elements of satisfaction (Wilkins, Santilli, Ferrari, Nota, Tracey, & Soresi 2014). The finding that career adaptability mediates the effect of dispositions suggests that career adaptability is involved in the translation of dispositions into behavior, or the regulation of personality expression (Rossier et al., 2012). In this case, career adaptability is a mechanism through which individuals better fit themselves into the work role and context (Savickas, 2005; Savickas et al., 2009), and as a consequence experience more positive outcomes.

In the second case, career adaptability mediated the effect of perceived work characteristics; job strain and job insecurity. In this case, the regulatory behavior is not in relation to individual dispositions, but rather in relation to environmental events or challenges (Karoly, 1993). Indeed, one definition of career adaptability defines it as "the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustment prompted by changes in work and working conditions" (Savickas, 1997, p. 254). Nota, Ginevra, Santilli, and Soresi (2014) noted that career adaptability is important for adjusting to unexpected needs arising from changes in working conditions and / or the labour market. Results in this thesis show that career adaptability acts as a partial barrier between negative aspects of work such as job strain and job insecurity and well-being, acting somewhat as a protective mechanism.

So far this discussion has focused on one side of the mediation relationship; that being the implication of career adaptability for the regulation of traits and responses to work characteristics. The other side needs to be considered too; considering the associations between traits, in this case orientations to happiness, and work characteristics (job strain and

job insecurity) with career adaptability, what is the implication for career adaptability? This is an aspect that will receive attention later in the discussion, but briefly, it seems that both individual and environmental aspects have some bearing on the display of career adaptabilities. The final property to address of the mediation models is the outcome at hand, personal and professional well-being. This too is an aspect that will be considered later.

#### 2.1.1. Limitations and implications for future research

A key limitation of both these mediation results is that they relied on cross-sectional data, and thus the direction of the effects remains to be clarified. In the case of career adaptabilities mediating dispositional traits, there is good theoretical basis that career adaptability, and not the dispositional trait, is the mediator. Traits are more stable, and personality theory postulates that intermediary variables, or characteristic adaptations, are involved in the display and regulation of traits (McAdams & Pals, 2006; McCrae & Costa, 1999). However, in the case of career adaptability as a mediator of work characteristics, it is possible that a reciprocal relationship exists. For example, a higher level of career adaptability, may lead individuals to have more favourable perceptions of work characteristics and different professional situations. Individuals may have more belief in their capacity to respond to situational factors more favourably (Savickas, 2005; Savickas & Porfeli, 2012). Further evidence for this possibility is found in studies showing associations between career adaptability and regulatory focus and self-esteem (Van Vianen et al., 2012), motivation (Pouyaud et al., 2012), and proactive personality and career optimism (Tolentino et al., 2014). Alternatively, when resources are depleted or threatened, individuals may appraise situations more negatively as they evaluate their ability to cope with the situation less positively. This possibility could be further explored with longitudinal studies that have enough measurement points to test and disentangle reciprocal and reverse effects.

Longitudinal studies are often heralded as the clear and true way to test mediation effects (Maxwell & Cole, 2007). A word of caution is necessary however. Longitudinal studies that do not consider the theoretical basis of the variables at hand or that ignore the question of how the associations between variables develop over time, are perhaps misguided (Cole & Maxwell, 2003). Self-regulation or adaptation is by its very nature a process that implies a series of iterations and cycles of adjustment (Boekaerts, Maes, & Karoly, 2005; Hoyle, 2006; Vancouver & Day, 2005). There is a part of the process that is seen in the moment, the response of the individual to their environment. And there is a part of the process that develops over time. The results of the two cross-sectional studies presented here, although limited in their casual conclusions, are nonetheless insightful for capturing the moment in time functioning of career adapt-abilities as involved in regulation behavior. There is however no doubt, that future studies are needed that adopt a process and time perspective that better capture the iterations and cycles of adjustment. These studies could include more frequent monitoring combined with longer time lags and qualitative approaches to offer more in-depth perspectives.

### 2.2. The activation and depletion of career adaptability in response to professional situations and the subsequent impact on well-being

Career adaptability appears to be activated in relation to some professional aspects, but other professional situations seem to correspond with lower levels of career adaptability. For unemployed individuals and for those who have experienced a professional transition (either moving from unemployment to employment, or remaining employed but experiencing a change) career adaptability levels are elevated (chapters 4 and 5). On the contrary, facing job insecurity and job strain contributes to decreased career adaptability levels (chapter 4). An explanation is thus needed that can account for these two sets of results, and similar ones found elsewhere in literature.

An explanation may be found in the work of Mischel and Shoda (1995) who proposed that the psychological features of different situations are key and that it is these features that trigger the cognitive-affective mediating units. Some features contribute to the activation of these units, whereas others contribute to the deactivation or inhibition of the same units. Individuals appraise features of situations and appraisal theory suggests that individuals first appraise situations as positive, neutral or stressful (Lazarus & Folkman, 1984; Lazarus, 1999). Stressful situations can be further appraised as loss, challenge, and/or threat. Thus, the meaning attached to situations is important for how individuals adapt and regulate in response to situations (Mischel, 2009; Shoda, LeeTiernan, & Mischel, 2002).

In considering the question of why, for example, unemployment appears to activate career adapt-abilities and job strain and job insecurity decrease adapt-abilities, it may be necessary to reflect on the psychological features and meaning of these situations. In the case of job insecurity, individuals fear loosing their jobs and they anticipate the loss of the benefits associated with work, but the situation is still uncertain (DeWitte, 2005a; Greenhalgh & Rosenblatt, 2010). This situation could thus be appraised as threatening. Once unemployed, individuals have no doubt experienced a sense of loss, but their situation is certain. Unemployed individuals know that they need to start making decisions and looking for new unemployment. In this sense, individuals may, paradoxically, feel more in control than when in situations of uncertain employment. In this sense, being unemployed may be appraised as more challenging rather than threatening. In situations of job strain, individuals may feel somewhat powerless to change the situation as job demands continue to produce strain even when job-related resources have been provided (e.g. Van Veldhoven, De Jonge, Broersen, Kompier, & Meijman, 2002). Thus, the activation of career adaptability resources may depend on an individual feeling a certain sense of personal control and responsibility, and importantly possibility, to change the situation. Alternatively, career adaptability may

become depleted or inhibited in situations that are appraised as threatening. Initial support for this idea can be found in another study that tested the relationship between redundancy, job insecurity, and career behaviors associated to career adaptability. Redundancy positively predicted career planning and exploration, whereas job insecurity negatively contributed to career exploration at the same time point (Klehe et al., 2011).

It may also be necessary to consider individual characteristics that could contribute to the development and maintenance of adapt-abilities, or alternatively the inhibition of this resource. Hirschi (2009) found that over a course of one year, a positive emotional disposition, perceived social support, non-immigration background, and continuing vocational education enhanced career adaptability (career choice readiness, planning, exploration and confidence) in Swiss high school students. Age, education, extraversion, neuroticism, openness, core-self evaluations, and future temporal focus contributed to changes in career adaptability over six months (Zacher, 2014b). Although in other studies, socio-demographic factors have not been related to career adapt-abilities (Urbanaviciute, Kairys, Pociute, & Liniauskaite, 2014). Adaptivity, conceptualised as learning goal orientation, proactive personality and optimism, predicted career adaptability over four weeks (Tolentino et al., 2014). Proactive personality and self-esteem contributed to the development of career adaptability over 4 weeks in students (Cai et al., 2014). Hirschi, Herrmann and Keller (2015) also found that adaptivity (proactive personality and core self-evaluations) predicted career adapt-abilities. Thus the activation of career adaptability may depend on the presence of these other individual characteristics.

#### 2.2.1. Career adapt-abilities as a resource for well-being

Chapter 4 showed that career adaptability has a direct influence on personal and professional well-being, but also that it mediates the negative effect of job strain and job insecurity on well-being. In this manner, career adaptability intervenes in this relationship

and offers some protection against the negative effects of job strain and job insecurity. However, it is possible that the potential for career adapt-abilities to continue to contribute to well-being may be reduced over time.

Repeated exposure to stressors results in an accumulation of threat and the increased possibility of reactions to events that are more severe than if the individual had not been under continued stress (Stawski et al., 2008). In line with appraisal theory (Lazarus & Folkman, 1984) when individuals appraise situations as threatening, they are more likely to appraise their resources as insufficient. Furthermore, conservation of resources theory (Hobfoll, 1989; 2001), suggests that resource loss is associated with threatening situations. In turn, compromised well-being results in individuals appraising resources as inadequate (Vander Elst et al., 2014). Thus, with sustained exposure to job strain and job insecurity, the threat to career adaptability resources may increase, which in turn limits the potential of career adaptability to act as a resource for well-being and to contribute to proactive regulation responses. Accordingly, there is a need for research that explores the potential of career adapt-abilities to act as a resource over time.

Chapter 5 showed that career adaptability is a resource over time for well-being, but only for individuals in some professional situations. Career adaptability influenced life satisfaction for individuals who had remained professionally active, or who had remained unemployed. It had no influence on life satisfaction for those who moved from unemployment to employment. Similarly, for those who found a job or changed jobs, career adaptability had no influence on self-rated health. These results may seem counterintuitive, surely in the case of professional transitions, career adaptability, an important resource for transitions, should have the most impact on well-being? Possibly, career adapt-abilities is having an indirect effect on well-being through finding employment. Career adaptability helps individuals find a job or adjust to new a job (e.g. Guan et al., 2013; Koen et al., 2010),

and this indirectly has an impact on well-being when one considers the importance of work for well-being (Blustein, 2008). As discussed above, if situations are continuously perceived as threatening, the capacity of career adapt-abilities to be a resource for well-being may be lessened. Consequently, if situations of sustained employment are characterized by, for example, job strain and insecurity, the positive effects of career adaptability may diminish. Similarly, in situations of sustained unemployment, career adapt-abilities may begin to decrease. Initial evidence suggests that career adaptability is at its highest level in the 4-10 month window after becoming unemployed and after this it starts to decrease (chapter 4). This implies that there may be a limit to the protective nature of career adaptability, and that there may be a critical window in which individuals have a higher chance to find employment. As the study in chapter 5 only used a 1-year window, future studies should adopt longer time frames combined with more frequent measurement points to examine the developmental trend of career adaptability.

#### 2.2.2. Implications and future research

It has become quite evident that both situational and individual characteristics may contribute positively or negatively to career adaptability. Indeed, the very definition of career adapt-abilities as a psychosocial variable suggests this idea (Savickas, 2013). Thus, it may be that career adaptability goes through multiple cycles of activation, depletion and restoration – with both individual and environmental characteristics contributing at each stage of the process.

There appears to be great value in considering carefully the mechanisms contributing to the activation, depletion, and restoration of career adaptability as it is associated with a number of important outcomes. It is important for both professional and general well-being (Chapter 4 and 5) as well as a number of career outcomes such as graduate's employment quality (Koen, Klehe, & Van Vianen, 2012), job seekers re-employment quality (Koen et al.,

2010; Zikic & Klehe, 2006), job search self-efficacy (Guan et al., 2013), employability skills (de Guzman & Choi, 2013), professional competence (Guo et al., 2014), and subjective career success (Zacher, 2014a).

Three possible avenues for future research are presented here. Firstly, there is a need for future studies that test the hypothesis that it is situations that are perceived as threatening that contribute to the reduction of career adapt-abilities, and situations that are perceived as challenging that activate career adapt-abilities. Secondly, questions remain pertaining to time; how exactly does a potential developmental cycle of career adapt-abilities evolve over time? Up until now, time frames used in career adaptability studies have included four weeks (Tolentino et al., 2014), two months (Guan et al., 2013), five months (Klehe et al., 2011), six months (Zacher 2014b), and one year Hirschi (2009). These varied time frames are helpful in that they provide evidence for a number of different processes occurring within specific time-frames, but are unhelpful in that they bring us no closer to having a coherent theory of how career adaptability evolves. A third avenue could consider the restoration or reactivation of career adapt-abilities after it has been depleted. It is possible that individual characteristics presented above that contribute to adaptability are involved in the restoration of career adaptability too, but this aspect will require future research attention. Research suggests that changes in adaptability may happen quite quickly (i.e. 4 weeks, Tolentino et al., 2014), but considering the value of career adapt-abilities, future research could explore how quickly it becomes restored, and the contribution of interventions in this regard.

2.3. The dimensions of career adaptability

A final word on this subject concerns the dimensions of career adaptability. Largely in the discussion above career adaptability has been treated as global concept with less attention given to the dimensions making up career adaptability. However, studies show that considering the dimensions of career adaptability is important. Of the four dimensions,

control appears to be the mediator between orientations to happiness and work stress (Chapter 3). Differences in adaptability according to employment status and job insecurity vary with reference to the different dimensions (Chapter 4). Personality traits are correlated differentially with the dimensions (Rossier et al., 2012). Career concern and control seem to be the strongest predictors of job search self-efficacy (Guan et al., 2013) and individual characteristics relate to changes in some dimensions but not others (Tolentino et al., 2014; Zacher, 2014b). Additionally, the dimensions of career adaptability do not seem to correspond empirically with their theoretically corresponding behavioral counterpart – for example one would expect career curiosity to be strongly related to career exploration, but in fact exploration is related to concern (Hirschi et al., 2015). It appears important to maintain the multidimensional nature of career adapt-abilities, and future research could explore when the different dimensions are important, how they change, and the relationships between the dimensions.

The lack of clarity pertaining to how the dimensions are related to each other and to other constructs may be explained by four reasons. First, it may reflect the recent development of the Career Adapt-abilities scale. Only recently has the scale been validated allowing for testing and application in different contexts. Second, career adaptability is conceptualized in the literature in different ways. There are the four dimensions as measured by the Career Adapt-abilities Scale; concern, curiosity, confidence, and control (Savickas & Porfeli, 2012), but other conceptualisations, although still within career construction theory, considered readiness, planning, exploration, and confidence (Hirschi, 2009; Koen et al., 2010), or decision making and self-regulation (Creed, Fallon, & Hood, 2008). Others use only career exploration and planning (Klehe et al., 2011; Zikic & Klehe, 2006). Third, career adaptability can be seen as an aggregate or latent variable, with methodological and theoretical implications, notably in terms of the shared and unique variance of the dimensions,

associated with this decision (see Hirschi, 2009). And finally, an advancement in methodological modelling techniques may be necessary for better understanding the unique contribution of the career adaptability dimensions. For example, bifactor models (Brunner, Nagy, & Wilhelm, 2012; Reise, 2012) that account for general or shared variance across dimensions, but also the unique variance of dimensions, might be useful in the case of career adapt-abilities. The dimensions overlap and are correlated, but are still conceptually different (Savickas, 2005; Savickas & Porfeli, 2012).

2.4. Justice matters

Chapter 6 presented a study on the relationships between belief in a just world, organizational justice perceptions and work related well-being measured with work stress and job satisfaction. By proposing that organizational justice perceptions mediate the relationship between personal belief in a just world and well-being, this study made several contributions. First, personal (but not general) belief in a just world shapes perceptions of organizational justice showing that organizational justice perceptions do not only vary in relation to events in the workplace, but that individual characteristics are important too. These results also seem to suggest that for belief in a just world to influence professional well-being over time, it requires a more proximal aspect of work (organizational justice perceptions) to transmit the influence.

According to the CAPS theory, individual differences in cognitive-affective units, such as expectancies and beliefs, result in individuals selecting and focusing on different situational features and cues (Mischel & Shoda, 1995). Just world believers expect just treatment, look for it, and reinterpret cues that may contradict their belief, to maintain perceptions of justice. Thus perceptions of justice are as a result of complex exchanges between the person and the situation.

Second, an important mediator of the relationship between belief in a just world and well-being was identified, which contributes to explaining the association between justice beliefs and well-being. Third, the distinctness of personal and belief in a just world and the specificity of their effects was established theoretically and empirically. The use of a longitudinal design strengthened our conclusions, but was limited by the use of only two waves of data. Future research should thus explore the same question with a fully longitudinal design as well as with time lags of different lengths to further disentangle the development of effects.

### 2.4.1. Implications for future research

An important area of future research entails the testing of other individual characteristics that could shape perceptions of organizational justice. Cropanzano and colleagues (2001) in considering why individuals care about organizational justice, proposed a multiple needs model of justice. They proposed that four psychological needs; need for control, need for belonging, need for positive self-regard, and need for meaning provide the answer to the question of why individuals care about organizational justice. Taking this as a starting point, other individual characteristics that represent these needs could be tested as drivers of organizational justice perceptions. Locus of control (Judge, Locke, & Durham, 1997) could capture the need for control; attachment style (Bowlby, 1973) may be important for need for belonging; self-esteem (Rosenberg, 1979) for need for positive self-regard; and the different ways people find meaning in their life stories for need for meaning (Baumeister & Wilson, 1996). The testing of these other individual characteristics would enrich the already impressive body of literature on organizational justice by extending the triggers of organizational justice to include individual and not only organizational aspects.

What could be said about the potential relationship between belief in a just world and other aspects included in this thesis such as professional transitions, career adaptability, and

incivility experiences? Belief in a just world is important for reactions to professional situations, such as unemployment in that it contributes to positive coping (Dalbert, 1997). Considering its nature as a personal resource (Dalbert, 2001; 2007; Furnham, 2003) it is implicated in emotional reactions, but may also help protect and maintain other resources such as career adaptability. Through the expectation that efforts will be justly rewarded and an increased sense of personal control, just world believers may be more likely to engage in adaptive career behaviors. It may also be particularly meaningful for immigrants as a protective characteristic in minimizing negative reactions to unfair experiences in the workplace, such as experiences of incivility and discrimination.

2.5. Professional situations and personality traits

The fact that personality traits affect a wide variety of well-being indicators is a well accepted idea in research (DeNeve & Cooper, 1998; Diener, 2000; Diener et al., 2006; McCrae & Costa, 1991; Steel et al., 2008). However, the results in chapter 5, indicate that these relationships may differ according to the professional situation. Neuroticism tended to be an important predictor of personal well-being across different situations, whereas extraversion, conscientiousness, agreeableness and openness were only important in some situations. In addition, being in certain professional situations seems to correspond with varying levels of certain traits. These two results combined suggests that experiencing a particular situation alters the display of certain traits, and also modifies the way that personality traits relate to well-being. In this sense, the pertinence of different traits for well-being seems to be a function of the situation, an idea that has not yet received substantial attention in the form of comparative studies.

How can these findings of varying levels of trait activation or display be reconciled with traditional theories on trait stability? Traits consists of affective, behavioral and cognitive components (Pytlik Zillig, Hemenover, & Dienstbier, 2002) and it is these components that

possibly become more evident in different situations. Thus, it is not necessarily one's standing on an underlying trait that changes, but just the relevance of cognitions, affect, and behaviors associated with this trait. Essentially, it is the expression of the trait that changes as a function of the situation (Rossier, 2014).

### 2.6. Well-being within and across life domains

Considering different domains of well-being, a distinction was made between professional well-being (work stress and job satisfaction) and general well-being (life satisfaction, self-rated health, and general psychological health). Results of this thesis show that the contributing factors to well-being are not limited to the same domain. For example, the professional situation, in terms of transitions, stability, insecurity, job strain, and unemployment, was related to indicators of personal well-being; life satisfaction, self-rated health and psychological health. General individual characteristics, such as orientations to happiness were related to work stress; and resources seemingly more important in the work domain, such as career adaptability, were related to indicators of personal well-being. Thus there is evidence for a clear interaction between life domains – events, situations and resources in one domain are related to outcomes in another domain (e.g. Dalgard et al., 2009; Daniel & Sonnentag, 2014; Judge & Watanabe, 1993; Kravina, Falco, De Carlo, Andreassen, & Pallesen, 2014). However, highly specific domain features, such as job insecurity, are still clearly related to outcomes in that same domain. In this thesis and elsewhere (DeWitte, 2005a), job insecurity had a larger effect on professional well-being than it did on general well-being.

Different mechanisms may be at work that transmits the effect from one domain to another. Daniel and Sonnentag (2014) found that affective (positive affect) and cognitive (positive reflection) resources mediate the relationship between work experiences and non-work outcomes. This in line with propositions found in the CAPS theory, that both cognitive

and affective mediating units translate the effects of the situation into behavior (Mischel & Shoda, 1995). Resource loss or threat to resources as discussed in the conservation of resources theory (Hobfoll, 1989; 2001) may be an alternative explanation. If events in one domain threaten resources loss (for example job insecurity is a threat to both professional and personal resources) then this may have detrimental consequences for well-being in the same or different life domains. Thus future research that tests these and other mediating mechanisms may be fruitful in furthering our understanding of how events in one domain may influence well-being in a different domain.

3. Validation of the German and French versions of the Career Adapt-Abilities Scales

The second chapter and part of the third chapter of this thesis were devoted to the validation of the French and German versions of the Career Adapt-Abilities Scale. Both of these studies were based on the work done on the international version of the career adapt-abilities scale (Savickas & Porfeli, 2012) and contributed to the growing number of language versions of this scale that are available. However, they differed slightly in their approach and main goal. For the German version, the aim was to validate the 24-item CAAS international form 2.0 (Savickas & Porfeli, 2012) in German, and also to test the possibility that one item should be replaced in the German version because of translation issues. For the French version, the aim was to re-analyze the items to find the best items for a French-language version that worked across four different French speaking countries, and then to compare this newly created French form to the international form 2.0. Although apparently similar, and with some overlap in methods, these two objectives represent two goals evident in the international work on career adapt-abilities.

The first goal refers to the need to have multiple language versions of the same set of items to encourage cross-cultural research and comparison of scores that is only possible

when language versions of a scale are equivalent (van de Vijver & Tanzer, 2004). This means that researchers are using a common "language" and psychometric instrument when career adapt-abilities is measured, tested in different contexts, and related to a number of different antecedents and outcomes. This is crucial for the theory building and continued development of the career adaptability literature. With this goal in mind, the validation of the German version of the scale that showed good results in terms of validity and the replication of the conceptual structure in a German-speaking context is an important contribution. Globally, all the studies on the language versions of the career adapt-abilities scale that exist to date show that the hierarchical structure of career adaptability does replicate into different contexts (Savickas & Porefli, 2012). This is a promising sign for future cross-cultural research in this area.

The second goal reflects the psychosocial nature of career adapt-abilities and the importance of having versions of the scale that make sense in a particular context. Savickas and Porfeli (2012) suggested that for different countries, the items measured could be adjusted to ensure that the scale reflects cultural uniqueness, while still protecting the conceptual nature of career adaptability. With this goal in mind, the development of a French-language version, with different items, that works across four different French speaking countries, supplements the international language version. Other studies that were part of the international validation of the career adapt-abilities scale also showed that adjustments to account for language and cultural uniqueness could be made. For example, the authors of the studies in Iceland (Vilhjalmsdottir, Kjartansdóttir, Smáradóttir, & Einarsdóttir 2012), the Netherlands (Van Vianen et al., 2012), Portugal (Duarte et al., 2012), and China (Hou, Leung, Li, Li, & Xu, 2012) all mentioned that modifications (such as response scales, wording, and number of items) would enhance the use of the career adapt-abilities scale in each particular country.

### 3.1. Implications and future research

Drawing across both the studies presented in chapters 2 and 3, implications and ideas for future research can be identified. Having more language versions of the scale available means that career adapt-abilities could be measured in more different contexts and that interventions can subsequently be designed. There is also a need for research that considers the differences in item-content according to different cultural and language contexts. Cross-cultural research could explore similarities and differences across different cultures (Matsumoto & Yoo, 2006; van de Vijver &Tanzer, 2004). It may be that along with the international form 2.0 of the career adapt-abilities scale, country-specific norms could be developed, allowing for the interpretation of questionnaire results within a particular context. Savickas and Porfeli (2012) hinted at this possibility when they mentioned, "countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies" (p. 663). In addition, age norms may also be relevant in that career adaptability is also sensitive to contextual factors associated with particular life-cycle transitions (Savickas, 1997). For example, adolescents who are negotiating the transition from school to work, may show quite different patterns of career adaptability in comparison to adults who may be in a more stable career stage (Guichard, 2003; Guichard, Pouyaud, de Calan, & Dumora, 2012). The development of norms may be one way to unite the two goals mentioned above and to have research that is both internationally comparable, and contextually sensitive, sensible, and relevant. Another approach would be to simultaneously use both the items in the international form and the items which seem to function well in a particular context in the measurement of career adapt-abilities, but this may represent an extra burden in test administration.

4. The experiences of immigrants in the workplace

Chapter 7 focused on a specific aspect of immigrant's professional experience, the possibility to be a target of workplace incivility based on one's nationality. This study contributed to the literature on discrimination in the workplace (Glick et al., 1996; Jasinskaja et al., 2007; Krings et al., 2011) by showing how even subtle forms of discrimination are experienced by immigrants which in turn may have negative consequences. It also illustrated the importance of considering the diversity within the immigrant group.

The hypotheses concerning immigrants in this thesis were not intended as tests of the CAPS theory. However, adopting a CAPS lens in relation to the subject at hand does yield some reflections. Rather than merely the person and situation interacting, studies that explore the experience of immigrants in the workplace contain a complex set of multiple person-situation interactions. At a minimum, there is an instigator and a target, but also the social groups to which both the target the instigator are part of. In the study presented in this thesis, the results could be seen as two examples of stable "if...then" behavior patterns. On the side of the perpetrator, if they encounter immigrants who meet a particular criteria (in this case, they are perceived as competent but lacking in warmth), then they behave in an uncivil manner. For the victim, if they experience uncivil behavior, they interpret this as discrimination. These stable behavior patterns are destructive, but also difficult to change – they are a result of multiple iterations of the social-cognitive-affective personality system. In addition, the psychological features of situations and the cognitive-affective mediating units are influenced by one's developmental history, including biological history, culture and society, and cognitive social learning history (Mischel & Shoda, 1995). In the case of immigrant studies, these factors may become more pronounced due to meaningful differences between cultural groups.

Although not an explicit objective of this thesis, it is not hard to see how all the aspects mentioned in this thesis, career adaptability, organizational justice, professional transitions, and job insecurity, may be different for immigrants. Acculturation theory suggests that immigrants' experiences in a new host country can be considered according to stages that include events, stressors, coping, and stress reactions, all of which are influenced by numerous factors such as characteristics of the host and origin country and individual characteristics (Berry, 1997). Thus, all of the ways in which immigrants differ from locals will impact on acculturation and integration into the job market (Dietz, 2010; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Studies show that psychological processes, individual characteristics, and professional experiences vary according to culture, nationality, or immigrant status. In the Netherlands, majority employees, and first- and second-generation minority employees show differences in workplace trust, and across these three groups, personality traits are related differently to workplace trust (Wöhrle, van Oudenhoven, Otten, & van der Zee, 2014). Foreigners who performed the same jobs and same tasks as locals had less positive work perceptions in terms of organizational justice, lower performance and displayed less organizational citizenship behaviors (Ang, Dyne, & Begley, 2003). Cultural differences are important for emotional regulation (Arens, Balkir, & Barnow, 2013; Matsumoto, 2006) and perceived control is not related to psychological symptoms in the same way in different cultures (Cheng, Cheung, Chio, & Chan, 2013). Even though the structure of personality traits seems to replicate across cultures (McCrae & Terracciano, 2005), the development of characteristic adaptations is culturally conditioned (McCrae et al., 2000).

### 4.1. Future research

This body of evidence suggests that future research on immigrants' resources such as career adaptability and belief in a just world may be fruitful. Immigrants may for example

have higher levels of career adaptability considering the extra barriers they may face in the labour market such as discrimination in selection processes (Krings & Olivares, 2007) and challenges in having qualifications recognized (Binggeli et al., 2013a). The discussion pertaining to the depletion of career adaptability may be particularly relevant for immigrants should they face continued stressors. Belief in a just world may be pertinent in relation to experiences of discrimination and incivility, which are often considered to be unjust and unfair. Would belief in a just world offer some protection to the negative outcomes of discrimination? Alternatively, on the side of the perpetrator, lack of reciprocity seems an important stimulus to uncivil behavior (Meier & Semmer, 2013), thus what role would justice play for instigators of uncivil behavior? In addition, considering the role of other individual and organizational factors, a theme found throughout this thesis, will enhance understanding of how incivility is related to different outcomes. For example, the relationship between daily incivility and end-of-work negative effect was stronger for people with low emotional stability, external locus of control, and people experiencing chronic workload and organizational constraints (Zhou et al., 2014).

## 5. Limitations

In reflecting on all the studies presented in this thesis, some limitations can be pointed out. All of these studies (with the exception of one) used the same sample, thus replication using different samples is necessary. In particular, the experience of unemployment in Switzerland is unique considering the support given to unemployed individuals in the form of generous unemployment insurance and assistance in finding a job. This potentially alters the material and psychological nature of the stressors associated with unemployment. The immigrants included in this study are also a specific group in that they are legal immigrants who spoke either French or German suggesting a favourable position in the labour market.

The studies in this thesis primarily addressed well-being as the outcome and did not test the possibility of reversed effects such that well-being influences professional situations or individual characteristics. However these relationships are indeed possible. Professional situations and aspects of a particular job are clearly associated to well-being, but well-being may also prompt job changes or influence appraisals of job characteristics (Luhmann, Lucas, Eid, & Diener, 2013). Individual differences definitely shape one's experiences of the professional environment, but certain professional experiences may also alter individual characteristics (Le, Donnellan, & Conger, 2014). Life events cause changes in well-being (Anusic, Yap, & Lucas, 2014), but well-being also makes certain life events more or less likely (Luhmann, et al., 2013).

Relatedly, studies that consider the subject of change need to pay close attention to how time is used. In this thesis, some longitudinal studies aimed to overcome the limits of cross-sectional studies, but more attention could have been given to the theoretical and practical implications of time. Luhmann and colleagues (2013) proposed stable and temporary mechanisms as an explanation for why well-being is associated with the possibility to experience certain life events. Temporary mechanisms are short-term and situation specific, whereas stable mechanisms are stable within a person and independent of situations, and generally longer lasting. Equally, the role of time in how situations change personality needs to be explicitly considered (Luhmann, Orth, Specth, Kandler, & Lucas, 2014). Not only do some changes happen quickly, whereas others take time to develop, changes can also be non-linear and discontinuous, change may be reversible or may occur before the event (see Luhmann et al., 2014).

All of these studies relied on self-report data implying a vulnerability to common method bias and response biases. In the longitudinal studies, this concern is partly addressed by having measurement points separated by time. In the future, data from objective measures

may complement the self-report measures. Research designs that combine different data collection methods and timing will no doubt be useful. In addition, further insight concerning well-being may be gained by measuring implicit cognitions and attitudes (Leavitt, Fong, & Greenwald, 2011).

Particularly concerning well-being, the conclusions of this thesis may be limited by the exclusive use of self-report measures. However, in defence of these measures, research has shown that different self-report measures of well-being are discriminative (Lucas, Diener, & Suh, 1996) and that there is significant agreement between self and other ratings of subjective well-being (Dobewall, Realo, Allik, Esko, & Metspalu, 2013) supporting the usefulness of these self-report measures. Furthermore, Kanheman and Riis (2005) discussed the experiencing and the remembering self and how asking individuals about their well-being means that respondents need to "retrieve, integrate, and evaluate memories" (p. 286) and "compare and combine heterogeneous experiences" (p. 291) which may lead to biased and inaccurate results. However, there is no doubt that the way individuals remember things is still a personally relevant source of information, as is evidenced by many studies asking people to look back. Still, certain approaches may minimize the risks associated with remembering. More frequent measurement points (especially those close to key events) limit the time frame, as do questions that include a prompt about the time frame in question. Framing questions in the context of a specific life domain may bring specificity to ratings.

The different studies presented in this thesis aimed to draw general conclusions and identify trends. But this means that a number of potentially important factors for individual well-being and professional experiences were not considered in detail. For example factors such as age, reasons for a professional change, occupational group, socio-economic status, and social support would all provide nuance to the results presented here. In addition, broader factors, such as political aspects, that define the context were not consider. Two examples

illustrate the importance of considering other factors. Dimensions of subjective and objective fit vary according to age, which in turn has implications for occupational strain and well-being (Zacher, Feldman, & Schulz, & 2014). Realo and Dobewall (2011) suggested that the trajectory of life satisfaction varies along important cultural, political, and socio-economic factors.

## 6. Critical reflections

In addition to the limitations mentioned at the end of each chapter, as well as in this conclusion chapter, here I offer some critical reflections about the work contained in this PhD thesis. These reflections can be generally categorized as methodological or theoretical.

On a methodological level, I made some decisions during some analyses that could have been accompanied by more critical reflection. In the path analyses and confirmatory factor analyses, modifications were added to the models based on modification indices greater than 20. Generally these modifications resulted in allowing error terms associated with a particular factor or scale to correlate with each other. Importantly, these modifications were only included when they were substantive or meaningful. For example, error terms associated with items from two different factors were not allowed to covary. Allowing error terms within a scale or factor to correlate usually accounts for systematic, as opposed to random measurement error, which often arises from respondent characteristics (e.g. response bias) or item characteristics (e.g. overlap in item content) (Byrne, 2009). Occasionally, the modifications suggested that another path should be added to the model, as was the case in chapter 6. Again, this path was only added because theoretically it was sensible. Despite these justifications, it is true that allowing these modifications represented an easier solution than addressing the underlying potential problems associated with model misspecification and problems with measurement instruments.

In chapter 4, job strain was measured by calculating a ratio score of job demands to job control. Although other authors have used this approach, I applied it without sufficiently considering the implications of this decision. This ratio term is not necessarily meaningful and information about both job demands and job control is lost. Creating an interaction term between job demands and job control may have been a better theoretical and methodological approach.

At times, insufficient sample sizes imposed limitations on the analyses and subsequently the quality of results. In chapter 5, the group of individuals who went from being employed to unemployed was too small, resulting in this important trajectory being excluded. In chapter 7, for reasons of sample size, different nationalities were grouped together, possibly compromising the robustness and further application of the results.

When longitudinal analyses were done using the data from both time 1 and time 2 (chapters 5 and 6), not enough attention was given to the potential influence of selection bias in the sample. It is possible that the individuals who stayed in the sample differed in important ways from those who left the sample, for example, they may be more conscientious. An analysis of the sample characteristics of the sample at time 1, and again at time 2, would have been important to control for some of these differences.

Drawing across the chapters, the language used to discuss the results was at times too strong and could have been toned down to match the results, which in general, showed small effects. Small effects are not unusual in large samples especially when the samples are aimed to be representative and are therefore quite heterogeneous. More attention could have been given to discussing the practical significance of results. Relatedly, the application of models could have been discussed with reference to socio-demographic characteristics such as gender, income, or education, which may impose limits on the relevance of the findings.

In most chapters of this thesis, alternative models could have been convincingly proposed and tested. Although the possibility of alternative models were mentioned in most chapters, this was usually brief and in passing. More discussion could have considered the theoretical and practical implications of alternative models. In particular, well-being could have been treated as a predictor and not only as an outcome. Additionally, non-linear relationships between individual resources and well-being outcomes, as well as between some aspects of the professional situation and well-being, may exist. This would suggest that individual resources may only be beneficial for well-being at certain levels, and that professional situations are not related to well-being in a consistent manner.

Further theoretical reflections may have enriched the discussion on some subjects. Notably, for career adaptability, an elaboration on the conceptual definition of career adaptability, focusing on its trait-like and state-like properties, could have enhanced our understanding of this concept. Further attention could have been given to the distinction between career adaptability as a resource and career adaptability as a buffer. This could have extended to a more refined commentary on the differences between mediation and moderation hypotheses and the appropriateness of each.

## 7. Implications and future research

Additional to the implications presented earlier in this chapter and each chapter of this thesis, some general implications are presented here. First, it seems important to move away from using homogenous groups as units of analysis. Members of groups such as “employed”, “unemployed”, and “immigrant” are not uniform and contain important distinguishing elements that have critical bearing on research questions and the types of conclusions that can be drawn from answering these research questions.

The usefulness of career adaptability is fairly well-established, and it appears that now is the moment for two future streams of research. First, interventions aimed at developing career adaptability need to be designed and tested. Second, the developmental trend of career adaptability needs to be explored. How career adaptability changes and evolves in response to situations and what the implication of career adaptability's developmental trend for its capacity to function as a resource are areas that warrant further research.

A central theme throughout this thesis has been the joint consideration of the person and situation. Consequently this discussion would not be complete without mentioning some of the key elements pertaining to what is typically known as the person-situation interaction. Commonly, interactions are defined by a moderator hypothesis; a moderator variable affects the direction or strength of the relationship between two variables (Baron & Kenny, 1986). It specifies the conditions under which a relationship will exist. In this case, either the person variable, or the situation variable is chosen as the moderator, depending on the question at hand. Mediator variables, on the other hand, account for the relationship between two variables (Baron & Kenny, 1986). They are implicated in a process and transmit the effect. Importantly, mediation hypotheses typically imply a causal order, which is often not present in moderator hypotheses. Taken together, moderation and mediation hypotheses specify *when* (moderator) as well as *how* or *why* (mediator) effects occur.

In this thesis, person-situation interactions were largely positioned within in the broader context of self-regulation. This was considered in two broad ways. First, situations prompt a regulatory or adaptive response from the individual (for example, in the case of career adaptability) or, second, individual characteristics shape perceptions of situations, in turn leading to positive outcomes (for example, in the case of belief in a just world). Thus, the situation and the person are in a constant state of reciprocal interaction, such that the person is influencing the situation and the situation is influencing the person. Consequently, the

*how*, *when*, and *why* are all important questions that have a place in studies of person-situation interrelations. Tests of moderation and mediation provide answers to these questions, and both moderation and mediation processes are implicated in self-regulation (Rossier, 2014; 2015).

Research that has attempted to determine causal order and distinguish main, mediated and moderated effects, has been fruitful. But this body of research also shows that deterministic answers do not equally apply in all cases. It seems that most of the time, researchers are going to be left with "both...and" and "it depends" caveats attached to their findings. Equally, both sides of the person-situation debate have received considerable support (Fleeson, 2004). Consequently, what avenues for future research exist? New theoretical propositions on adult personality development are being put forward that lay a good foundation for future research (Specht et al., 2014; Roberts et al., 2003). Further studies could explore, for example, the conditions under which professional situations and experiences can alter individual characteristics and how long lasting these changes might be. A starting point may be to categorize different situations according to certain characteristics, such as whether or not the event was desirable, or factors that promote or inhibit meaning-making (see Luhmann, Hofmann, Eid, & Lucas, 2012).

Well-being is frequently an outcome of person-situation interaction and self-regulation studies. Life events, as well as the subsequent adaptation process, have different effects for affective and cognitive outcomes (Luhmann et al., 2012). Furthermore, outcomes, such as life satisfaction, are generally less situationally bound (Eid & Diener, 2004), whereas others, for example job satisfaction and work stress, are more closely tied to the situation. Therefore it seems necessary to consider if mediation and moderation effects need to be specified differently for different well-being outcomes. The ways in which the person-situation

interaction manifests may require the specification of different processes or different time frames.

## 8. Concluding Remarks

This thesis explored the subject of well-being by considering the individual and professional factors, as well as the interface between these, that contribute to physical and psychological health outcomes. Drawing from different theoretical frameworks the articles in this thesis illustrated how it is necessary to jointly consider individual and professional characteristics as explanatory factors. This thesis offered several insights that added to theory in both well established and also growing areas of research. It highlighted the complexity that is found on the individual and professional levels and called for a more nuanced approach to be adopted in the studies of individual characteristics, professional aspects, and well-being.

## IX. References


Akrami, N., Ekehammar, B., & Araya, T. (2000). Classical and modern racial prejudice: a study of attitudes towards immigrants in Sweden. *European Journal of Social Psychology, 30*, 521-532. doi:10.1002/1099-0992(200007/08)30:4<521::AID-EJSP5>3.0.CO;2-N

Aluja, A., García, O., Rossier, J., & García, L. F. (2005). Comparison of the NEO-FFI, the NEO-FFI-R and an alternative short version of the NEO-PI-R (NEO-60) in Swiss and Spanish samples. *Personality and Individual Differences, 38*, 591-604. doi:10.1016/j.paid.2004.05.014

Ambrose, M. L., & Arnaud, A. (2005). Are procedural justice and distributive justice conceptually distinct? In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 59-84). Mahwah, NJ: Erlbaum.

Ambrose, M. L., & Schminke, M. (2009). The role of overall justice judgments in organizational justice research: A test of mediation. *Journal of Applied Psychology, 94*, 491-500. doi:10.1037/a0013203.

Andersson, L. M., & Pearson, C.M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of Management Review, 24*, 452-471. doi:10.5465/AMR.1999.2202131

Ang, S., Van Dyne, L., & Begley, T. M. (2003). The employment relationships of foreign workers versus local employees: a field study of organizational justice, job satisfaction, performance, and OCB. *Journal of Organizational Behavior*, *24*, 561-583. doi:10.1002/job.202

Anusic, I., Yap, S. C. Y., & Lucas, R. E. (2014). Testing set-point theory in a Swiss national sample: Reaction and adaptation to major life events. *Social Indicators Research, 119,* 1265-1288. doi:10.1007/s11205-013-0541-2

Arens, E. A., Balkir, N., & Barnow, S. (2013). Ethnic variation in emotion regulation: Do cultural differences end where psychopathology begins? *Journal of Cross-Cultural Psychology*, *44*, 335-351. doi:10.1177/0022022112453314

Arbuckle, J. L. (2010). Amos (Version 19.0) [Computer Program]. Chicago, IL: SPSS

Bailis, D. S., Segall, A., & Chipperfield, J. G. (2003). Two views of self-rated general health status. *Social Science & Medicine, 56*, 203-217. doi:10.1016/S0277-9536(02)00020-5

Bakker, A. B., Demerouti, E., de Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior, 62*, 341-356. doi:10.1016/S0001-8791(02)00030-1

Bakker, A., van Veldhoven, M., & Xanthopoulou, D. (2010). Beyond the demand-control model. *Journal of Personnel Psychology, 9*, 3-16. doi:10.1027/1866-5888/a000006

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling, 9,* 78-102. doi:10.1207/S15328007SEM0901_5

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182. doi:10.1037/0022-3514.51.6.1173

Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, *74*, 1252. doi:10.1037/0022-3514.74.5.1252

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science, 16*, 351-355. doi:10.1111/j.1467-8721.2007.00534.x

Baumeister, R. F., Gailliot, M., DeWall, C. N., & Oaten, M. (2006). Self-regulation and personality: How interventions increase regulatory success, and how depletion moderates the effects of traits on behavior. *Journal of Personality, 74*, 1773- 1802. doi:10.1111/j.1467-6494.2006.00428.x

Baumeister, R. F., & Wilson, B. (1996). Life Stories and the four needs for meaning. *Psychological Inquiry*, *7*, 322-325. doi:10.1207/s15327965pli0704_2

Benyamini, Y., Leventhal, H., & Leventhal, E. A. (2004). Self-rated oral health as an independent predictor of self-rated general health, self-esteem and life satisfaction. *Social Science & Medicine, 59*, 1109-1116. doi:10.1016/j.socscimed.2003.12.021

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology, 46*, 5-34. doi:10.1111/j.1464-0597.1997.tb01087.x

Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology, 92*, 410-424. doi:10.1037/0021-9010.92.2.410

Biemann, T., Fasang, A. E., & Grunow, D. (2011). Do economic globalization and industry growth destabilize careers? An analysis of career complexity and career patterns over time. *Organization Studies*, *32*, 1639-1663. doi:10.1177/0170840611421246

Biemann, T., Zacher, H., & Feldman, D. C. (2012). Career patterns: A twenty-year panel study. *Journal of Vocational Behavior, 81*, 159-170. doi:10.1016/j.jvb.2012.06.003

Bies, R. J., & Tripp, T. M. (2002). Hot flashes, open wounds: Injustice and the tyranny of its emotion. In S.W. Gilliland, D., Steiner, & D. Skarlicki (Eds.), *Emerging perspectives on managing organizational justice* (pp. 203-223). Charlotte, NC: Information Age Publishing.

Binggeli, S., Dietz, J., & Krings, F. (2013a). Immigrants: A forgotten minority. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 6*, 107-113. doi:10.1111/iops.12019

Binggeli, S., Krings, F., & Sczesny, S. (2013b). Perceived competition explains regional differences in the stereotype content of immigrant groups. *Social Psychology, 45,* 62-70. doi:10.1027/1864-9335/a000160

Binggeli, S., Krings, F., & Sczesny, S. (2014). Stereotype content of immigrant groups in Switzerland. *Swiss Journal of Psychology*, *73*, 123-133. doi:10.1024/1421-0185/a000133

Blader, S. L., & Bobocel, D. R. (2005). Wanting is believing: Understanding psychological processes in organizational justice by examining subjectivity in justice judgments. In S. Gilliland, D. Steiner, D. Skarlicki, & K. Van den Bos (Eds.), *Research in social issues in management: What motivates fairness in organizations* (Vol 4, pp. 3-29). Greenwich, CT: Information Age Publishing.

Blustein, D. (2006). *The psychology of working: A new perspective for career development, counseling, and public policy*. Malwah, NJ : Lawrence Elrbaum Associates.

Blustein, D. L. (2008). The role of work in psychological health and well-being: A conceptual, historical, and public policy perspective. *American Psychologist, 63*, 228-240. doi:10.1037/0003-066X.63.4.228

Bobocel, D. R., & Hafer, C. L. (2007). Justice motive theory and the study of justice in work organizations: A conceptual integration. *European Psychologist, 12*, 283-289. doi:10.1027/1016-9040.12.4.283

Boekaerts, M., Maes, S., & Karoly, P. (2005). Self-regulation across domains of applied psychology: Is there an emerging consensus? *Applied Psychology: An International Review, 54*, 149-154. doi:10.1111/j.1464-0597.2005.00201.x

Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York, NY: Wiley.

Borg, V., Kristensen, T. S., & Burr, H. (2000). Work environment and changes in self-rated health: A five-year follow-up study. *Stress and Health, 16*, 37-47. doi:10.1002/(SICI)1099-1700(200001)16:1<37::AID-SMI830>3.0.CO;2-O

Borkenau, P., & Ostendorf, F. (1993). *NEO-Fünf-Faktoren-Inventar (NEO-FFI) nach Costa und McCrae [NEO-Five-Factor Inventory according to Costa and McCrae]*. Göttingen, Germany: Hogrefe.

Bosman, J., Rothmann, S., & Buitendach, J. H. (2005). Job insecurity, burnout and work engagement: The impact of positive and negative affectivity. *SA Journal of Industrial Psychology, 31*, 48-56. doi:10.4102/sajip.v31i4.199

Boswell, W. R., Boudreau, J. W., & Tichy, J. (2005). The relationship between employee job change and job satisfaction: The honeymoon-hangover effect. *Journal of Applied Psychology, 90*, 882-892. doi:10.1037/0021-9010.90.5.882

Bowlby, J. (1973). Attachment and Loss. Volume II: Separation: Anxiety and Anger. London, UK: Hogarth Press

Brown, A., Bimrose, J., Barnes, S.-A., & Hughes, D. (2012). The role of career adaptabilities for mid-career changers. *Journal of Vocational Behavior, 80*, 754-761. doi:10.1016/j.jvb.2012.01.003

Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research, 21*, 230-258. doi:10.1177/0049124192021002005

Brown, S. D., & Lent, R. W. (Eds.). (2004). *Career development and counseling: Putting theory and research to work*. John Wiley & Sons.

Brunner, M., Nagy, G., & Wilhelm, O. (2012). A tutorial on hierarchically structured constructs. *Journal of Personality*, *80*, 796-846. doi:10.1111/j.1467-6494.2011.00749.x

Buss, D. M., & Cantor, N. E. (1989). *Personality psychology: Recent trends and emerging directions*. New York, NY: Springer-Verlag Publishing.

Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York, NY: Routledge.

Byrne, B. M., & van de Vijver, F. J. (2010). Testing for measurment and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International Journal of Testing, 10*, 107-132. doi:10.1080/15305051003637306

Cai, Z., Guan, Y., Li, H., Shi,W., Guo, K., Liu, Y., Li, Q., Han, X., Jiang, P., Fang, Z. & Hua, H. (2014). Self-esteem and proactive personality as predictors of future work self and career adaptability: An examination of mediating and moderating processes. *Journal of Vocational Behavior*, *86*, 86-94. doi:10.1016/j.jvb.2014.10.004

Cappelli, P., & Keller, J. R. (2012). Classifying work in the new economy. *Academy of Management Review*. Advance online publication. doi: 10.5465/amr.2011.0302

Cheng, G. H. L., & Chan, D. K. S. (2008). Who Suffers More from Job Insecurity? A Meta-Analytic Review. *Applied Psychology*, *57*, 272-303. doi:10.1111/j.1464-0597.2007.00312.x

Cheng, C., Cheung, S.-F., Chio, J. H.-M., & Chan, M.-P. S. (2013). Cultural meaning of perceived control: A meta-analysis of locus of control and psychological symptoms across 18 cultural regions. *Psychological Bulletin, 139*, 152-188. doi:10.1037/a0028596

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233-255. doi:10.1207/S15328007SEM0902_5

Cheung, M. W., & Au, K. (2005). Applications of multilevel structural equation modeling to cross-cultural research. *Structural Equation Modeling: A Multidisciplinary Journal, 12*, 598-619. doi:10.1207/s15328007sem1204_5

Chudzikowski, K. (2012). Career transitions and career success in the 'new' career era. *Journal of Vocational Behavior*, *81*, 298-306.doi:10.1016/j.jvb.2011.10.005

Clark, A., Georgellis, Y., & Sanfey, P. (2001). Scarring: The psychological impact of past unemployment. *Economica*, *68*, 221-241.doi : 10.1111/1468-0335.00243

Clark, A., Knabe, A., & Rätzel, S. (2010). Boon or bane? Others' unemployment, well-being and job insecurity. *Labour Economics*, *17*, 52-61. doi:10.1016/j.labeco.2009.05.007

Coetzee, M., & de Villiers, M. (2010). Sources of job stress, work engagement and career orientations of employees in a South African financial institution. *Southern African Business Review, 14*(1)*,* 27-57.

Coffman. D. L., & MacCallum, R. C. (2005). Using parcels to convert path analysis models into latent variable models. *Multivariate Behavioral Research, 40*, 235-259. doi:10.1207/s15327906mbr4002_4

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86*, 278-321. doi:10.1006/obhd.2001.2958

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558. doi:10.1037/0021-843X.112.4.558

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*, 386-400. doi:10.1037//0021-9010.86.3.386

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: a meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86*, 425-445. doi:10.1037/0021-9010.86.3.425

Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., & Wesson, M. J. (2013). Justice at the millennium, a decade later: a meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, *98*, 199-236. doi:10.1037/a0031757

Compton, W. C., Smith, M. L., Cornish, K. A., & Qualls, D. L. (1996). Factor structure of mental health measures. *Journal of Personality and Social Psychology, 71*, 406-413. doi:10.1037/0022-3514.71.2.406

Cooper, C. L., Dewe, P. J., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage Publications.

Cortina, L. M. (2008). Unseen injustice: incivility as modern discrimination in organizations. *Academy of Management Review, 33*, 55-75. doi:10.5465/AMR.2008.27745097

Cortina, L. M., Kabat-Farr, D., Leskinen, E. A., Huerta, M., & Magley, V. J. (2013). Selective incivility as modern discrimination in organizations: Evidence and impact. *Journal of Management, 39,* 1579-1605. doi:10.1177/0149206311418835

Cortina, L. M., Lonsway, K. L., Magley, V. J., Freeman, L. V., Collinsworth, L. L., Hunter, M., & Fitzgerald, L. F. (2002). What's gender got to do with it? Incivility in the federal courts. *Law and Social Inquiry, 27*, 235–270. doi:10.1111/j.1747-4469.2002.tb00804.x

Cortina, L. M., & Magley, V. J. (2009). Patterns and profiles of response to incivility in the workplace. *Journal of Occupational Health Psychology*, *14*, 272-288. doi:10.1037/a0014934

Cortina, L. M., Magley, V. J., Williams, J. H., & Langhout, R. D. (2001). Incivility in the workplace: Incidence and impact. *Journal of Occupational Health Psychology, 6,* 64-80. doi:10.1037//1076-8998.6.1.64

Costa, P. T., Jr., & McCrae, R. R. (1994). Set like plaster? Evidence for the stability of adult personality. In T. F. Heatherton & J. L. Weinberger (Eds.), *Can personality change?* (pp. 21-40). Washington, DC: American Psychological Association.

Creed, P. A., & Evans, B. M. (2002). Personality, well-being and deprivation theory. *Personality and Individual Differences, 33*, 1045-1054. doi:10.1016/S0191-8869(01)00210-0

Creed, P. A., & Macintyre, S. R. (2001). The relative effects of deprivation of the latent and manifest benefits of employment on the well-being of unemployed people. *Journal of Occupational Health Psychology*, *6*, 324-331. doi:10.1037/1076-8998.6.4.324

Creed, P. A., Fallon, T., & Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior*, *74*, 219-229. doi:10.1016/j.jvb.2008.12.004

Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior, 58*, 164-209. doi:10.1006/jvbe.2001.1791

Cubela Adoric, V. (2004). Belief in a just world and coping with job search of young adults. In. C. Dalbert & H. Sallay (Eds.), *Belief in a just world in adolescence and young adulthood* (pp. 189-214). London, UK: Routledge.

Cubela Adoric, V., & Kvartuc, T. (2007). Effects of mobbing on justice beliefs and adjustment. *European Psychologist, 12*, 261-271. doi:10.1027/1016-9040.12.4.261

Cuddy, A. J., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology, 92*, 631-648. doi:10.1037//0022-3514.92.4.631

Cuddy, A. J., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. *Advances in Experimental Social Psychology, 40*, 61-149. doi:10.1016/S0065-2601(07)00002-0

Dalbert, C. (1997). Coping with an unjust fate: The case of structural unemployment. *Social Justice Research, 10*, 175-189. doi:10.1007/BF02683311

Dalbert, C. (1998). Belief in a just world, well-being, and coping with an unjust fate. In L. Montada & M. J. Lerner (Eds.), *Responses to victimization and belief in a just world* (pp. 87-105). New York, NY: Plenum.

Dalbert, C. (1999). The world is more just for me than generally: About the personal belief in a just world scale's validity. *Social Justice Research, 12*, 79-98. doi:10.1023/A:1022091609047

Dalbert, C. (2001). *The justice motive as a personal resource: Dealing with challenges and critical life events*. New York, NY: Plenum Press.

Dalbert, C. (2007). Introduction to the Special Section-Dealing with strain at the workplace: A just world perspective. *European Psychologist, 12*, 250-252. doi:10.1027/1016-9040.12.4.250

Dalbert, C. (2009). Belief in a just world. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of Individual Differences in Social Behavior* (pp. 288-297). New York: Guilford Publications.

Dalgard, O. S., Sørensen, T., Sandanger, I., Nygård, J. F., Svensson, E., & Reas, D. L. (2009). Job demands, job control, and mental health in an 11-year follow-up study: Normal and reversed relationships. *Work & Stress, 23*, 284-296. doi:10.1080/02678370903250953

Daniel, S., & Sonnentag, S. (2014). Work to non-work enrichment: The mediating roles of positive affect and positive work reflection. *Work & Stress*, *28*, 49-66. doi:10.1080/02678373.2013.872706

De Bruin, G. P. (2006). The dimensionality of the general work stress scale: A hierarchical exploratory factor analysis. *SA Journal of Industrial Psychology, 32*, 68-75. doi:10.4102/sajip.v32i4.250

De Bruin, G. P., & Taylor, N. (2005). Development of the sources of work stress inventory. *Psychological Society of South Africa, 35*, 748–765. doi:10.1177/008124630503500408

De Judicibus, M., & McCabe, M. (2001). Blaming the target of sexual harassment. *Sex Roles, 44*, 401-407. doi:10.1023/A:1011926027920

DeBell, C. (2006). What all applied psychologists should know about work. *Professional Psychology: Research and Practice, 37*, 325-333. doi:10.1037/0735-7028.37.4.325

Debus, M. E., König, C. J., & Kleinmann, M. (2014). The building blocks of job insecurity: The impact of environmental and person-related variables on job insecurity perceptions. *Journal of occupational and organizational psychology*, *87*(2), 329-351. doi:10.1111/joop.12049

DeFrank, R. S., & Ivancevich, J. M. (1998). Stress on the job: An executive update. *The Academy of Management Executive, 12*, 55-66. doi:10.5465/AME.1998.1109050

De Guzman, A. B., & Choi, K. O. (2013). The relations of employability skills to career adaptability among technical school students. *Journal of Vocational Behavior*, *82*, 199-207.doi:10.1016/j.jvb.2013.01.009

DeLange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2003). "The very best of the millennium": Longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, *8*, 282-305. doi:10.1037/1076-8998.8.4.282

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512. doi:10.1037/0021-9010.86.3.499

DeNeve, K. M., & Cooper, H. (1998). The happy personality: a meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*, 197-229. doi:10.1037/0033-2909.124.2.197

DeWitte, H. (2005a). Job insecurity: Review of the international literature on definitions, prevalence, antecedents and consequences. *SA Journal of Industrial Psychology, 31*, 1-6. doi:10.4102/sajip.v31i4.200

DeWitte, H. (2005b). Long-term job insecurity, job satisfaction and organisational attitudes: Test of Warr's curvilinear hypothesis. *SA Journal of Industrial Psychology, 31,* 41-47. doi:10.4102/sajip.v31i4.212

Diekman, A. B., & Hirnisey, L. (2007). The effect of context on the silver ceiling: A role congruity perspective on prejudiced responses. *Personality and Social Psychology Bulletin, 33*, 1353-1366. doi:10.1177/0146167207303019

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575. doi:10.1037/0033-2909.95.3.542

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*, 34-43. doi:10.1037//0003-066X.55.1.34

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75. doi:10.1207/s15327752jpa4901_13

Diener, E., & Lucas, R. E. (1999). Personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology*. New York, NY: Russell Sage.

Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *American Psychologist, 61*, 305-314. doi:10.1037/0003-066X.61.4.305

Diener, E., & Seligman, M. E. (2004). Beyond money toward an economy of well-being. *Psychological Science in the Public Interest, 5*, 1-31. doi:10.1111/j.0963-7214.2004.00501001.x

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin, 125*, 276-302. doi:10.1037/0033-2909.125.2.276

Dietz, J. (2010). Introduction to the special issue on employment discrimination against immigrants. *Journal of Managerial Psychology*, *25*, 104-112. doi:10.1108/02683941011019320

Dik, B. J., & Duffy, R. D. (2009). Calling and vocation at work: Definitions and prospects for research and practice. *The Counseling Psychologist, 37*, 424-450. doi:10.1177/0011000008316430

Dipboye, R. L., & Halverson, S. K. (2004). Subtle (and not so subtle) discrimination in organizations. In R.W. Griffin, A. O'Leary-Kelly (Eds.), *The dark side of organizational behavior* (pp. 131-158). San Francisco, CA: Jossey-Bass

Dobewall, H., Realo, A., Allik, J., Esko, T., & Metspalu, A. (2013). Self-other agreement in happiness and life-satisfaction: The role of personality traits. *Social Indicators Research, 114*, 479-492. doi:10.1007/s11205-012-0157-y

Dohrenwend, B. S., & Dohrenwend, B. P. (1974). *Stressful life events: Their nature and effects*. New York, NY: Wiley.

Duarte, M. E., Soares, M. C., Fraga, S., Rafael, M., Lima, M. R., Paredes, I., … Djaló, A. (2012). Career Adapt-Abilities Scale–Portugal form: Psychometric properties and relationships to employment status. *Journal of Vocational Behavior, 80, 725-729*. doi:10.1016/j.jvb.2012.01.019

Dzuka, J., & Dalbert, C. (2002). Mental health and personality of Slovak unemployed adolescents: The impact of belief in a just world. *Journal of Applied Social Psychology, 32*, 732-757. doi:10.1111/j.1559-1816.2002.tb00240.x

Ebberwein, C. A., Krieshok, T. S., Ulven, J. C., & Prosser, E. C. (2004). Voices in transition: Lessons on career adapt-ability. *The Career Development Quarterly, 52*, 292-308. doi:10.1002/j.2161-0045.2004.tb00947.x

Eckes, T. (2002). Paternalistic and envious gender stereotypes: Testing predictions from the stereotype content model. *Sex Roles, 47*, 99-114. doi:10.1023/A:1021020920715

Eid, M., & Diener, E. (2004). Global judgments of subjective well-being: Situational variability and long-term stability. *Social Indicators Research*, *65*, 245-277. doi:10.1023/B:SOCI.0000003801.89195.bc

Elovainio, M., Heponiemi, T., Kuusio, H., Sinervo, T., Hintsa, T., & Aalto, A. M. (2010). Developing a short measure of organizational justice: A multisample health

professionals study. *Journal of Occupational and Environmental Medicine, 52*, 1068-1074. doi:10.1097/JOM.0b013e3181f8447c

Elovainio, M., Kivimäki, M., & Vahtera, J. (2002). Organizational justice: Evidence of a new psychosocial predictor of health. *American Journal of Public Health, 92*, 105-108. doi:10.2105/AJPH.92.1.105

Ervasti, H., & Venetoklis, T. (2010). Unemployment and subjective well-being: An empirical test of deprivation theory, incentive paradigm and financial strain approach. *Acta Sociologica, 53*, 119-139. doi:10.1177/0001699310365624

Esses, V. M., Dovidio, J. F., Jackson, L. M., & Armstrong, T. L. (2001). The immigration dilemma: The role of perceived group competition, ethnic prejudice, and national identity. *Journal of Social Issues, 57*, 389-412. doi:10.1111/0022-4537.00220

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 56-83. doi:10.1080/10705519909540119

Farrell, A. D. (1994). Structural equation modelling with longitudinal data: Strategies for examining group differences and reciprocal relationships. *Journal of Consulting & Clinical Psychology, 62*, 477-487. doi:10.1037/0022-006X.62.3.477

Fasel, R., & Spini, D. (2010). Effects of victimization on the belief in a just world in four ex-Yugoslavian countries. *Social Justice Research, 23*, 17-36. doi:10.1007/s11211-010-0111-6

Fiske, S. T., Cuddy, A. J., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878-902. doi:10.1037//oo22-3514.82.6.878

Flanagan, N. A., & Flanagan, T. J. (2002). An analysis of the relationship between job satisfaction and job stress in correctional nurses. *Research in Nursing & Health, 25*, 282-294. doi:10.1002/nur.10042

Fleeson, W. (2004). Moving personality beyond the person-situation debate: The challenge and the opportunity of within-person variability. *Current Directions in Psychological Science, 13,* 83-87. doi:10.1111/j.0963-7214.2004.00280.x

Fouad, N. A., & Bynner, J. (2008). Work transitions. *American Psychologist, 63*, 241-251. doi:10.1037/0003-066X.63.4.241

Friedland, D. S., & Price, R. H. (2003). Underemployment: Consequences for the health and well-being of workers. *American Journal of Community Psychology, 32*, 33-45. doi:10.1023/A:1025638705649

French, J. R. P., Caplan, R. D., & Harrison, R. V. (1982). *The mechanisms of job stress and strain.* New York, NY: Wiley.

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior, 65*, 14-38. doi:10.1016/j.jvb.2003.10.005

Fujita, F., & Diener, E. (2005). Life satisfaction set point: Stability and change. *Journal of Personality and Social Psychology, 88*, 158-164. doi:10.1037/0022-3514.88.1.158

Furnham, A. (1995). The just world, charitable giving and attitudes to disability. *Personality and Individual Differences, 19*, 577-583. doi:10.1016/0191-8869(95)00090-S

Furnham, A. (2003). Belief in a just world: Research progress over the past decade. *Personality and Individual Differences, 34*, 795-817. doi:10.1016/S0191-8869(02)00072-7

Furnham, A., & Proctor, E. (1989). Belief in a just world: review and critique of the individual difference literature. *British Journal of Social Psychology, 28*, 365-384. doi:10.1111/j.2044-8309.1989.tb00880.x

Furnham, A., & Proctor, E. (1992). Sphere-specific just world beliefs and attitudes to AIDS. *Human Relations, 45*, 265-280. doi:10.1177/001872679204500303

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*, 103-110. doi:10.1037/1089-2680.9.2.103

Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J.F. Dovido & S.L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61-89). Orlando, FL: Academic Press.

Giannopoulos, V. L., & Vella-Brodrick, D. A. (2011). Effects of positive interventions and orientations to happiness on subjective well-being. *The Journal of Positive Psychology, 6*, 95-105. doi:10.1080/17439760.2010.545428

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*, 491-512. doi:10.1037/0022-3514.70.3.491

Glick, P., & Fiske, S. T. (2001). Ambivalent stereotypes as legitimizing ideologies: Differentiating paternalistic and envious prejudice. In J. Jost & B. Major (Eds.), *The psychology of legitimacy* (pp. 278-306). Cambridge, England: Cambridge University Press.

Goldberg, D. P. & Williams, P. (1988). *The user's guide to the general health questionnaire*. Windsor, UK: NFER-Nelson.

Goodchild, M. E., & Duncan-Jones, P. (1985). Chronicity and the General Health Questionnaire. *British Journal of Psychiatry 146,* 55-61. doi:10.1192/bjp.146.1.55

Goodwin, R., & Engstrom, G. (2002). Personality and the perception of health in the general population. *Psychological Medicine, 32*, 325-332. doi:10.1017/S0033291701005104

Gordon, R. A., & Arvey, R. D. (2004). Age bias in laboratory and field settings: A meta-analytic investigation. *Journal of Applied Social Psychology, 34*, 468-492. doi:10.1111/j.1559-1816.2004.tb02557.x

Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment, 68*, 532-560. doi:10.1207/s15327752jpa6803_5

Greenberg, J. (2001). Setting the justice agenda: Seven unanswered questions about "what, why, and how". *Journal of Vocational Behavior, 58*, 210-219. doi:10.1006/jvbe.2001.1792

Greenberg, J. (2006). Losing sleep over organizational injustice: Attenuating insomniac reactions to underpayment inequity with supervisors training in interactional justice. *Journal of Applied Psychology, 91*, 58-69. doi:10.1037/0021-9010.91.1.58

Greenberg, J., & Colquitt, J. A. (Eds.). (2013). *Handbook of organizational justice*. New York, NY: Lawrence Erlbaum Associates.

Greenhalgh, L., & Rosenblatt, Z. (2010). Evolution of research on job insecurity. *International Studies of Management and Organization, 40*, 6-19. doi:10.2753/IMO0020-8825400101

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, *26*, 463-488. doi:10.1177/014920630002600305

Guan, Y., Deng, H., Sun, J., Wang, Y., Cai, Z., Ye, L., … Li, Y. (2013). Career adaptability, job search self-efficacy and outcomes: A three-wave investigation among Chinese

university graduates. *Journal of Vocational Behavior, 83*, 561-570. doi:10.1016/j.jvb.2013.09.003

Guichard, J. (2003). Career counseling for human development: An international perspective. *The Career Development Quarterly, 51*, 306-321. doi:10.1002/j.2161-0045.2003.tb00612.x

Guichard J. (2009). Self-constructing. *Journal of Vocational Behavior, 75*, 251-258. doi:10.1016/j.jvb.2009.03.004

Guichard, J., Pouyaud, J., de Calan, C., & Dumora, B. (2012). Identity construction and career development interventions with emerging adults. *Journal of Vocational Behavior, 81*, 52-58. doi:10.1016/j.jvb.2012.04.004.

Gunz, H. P., Peiperl, M., & Tzabbar, D. (2007). Boundaries in the study of career. In H. P. Gunz, & M. A. Peiperl (Eds.), *Handbook of career studies* (pp. 471–494). Thousand Oaks, CA: Sage.

Guo, Y., Guan, Y., Yang, X., Xu, J., Zhou, X., She, Z., ... & Fu, M. (2014). Career adaptability, calling and the professional competence of social work students in China: A career construction perspective. *Journal of Vocational Behavior*, *85*, 394-402. doi:10.1016/j.jvb.2014.09.001

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, *60*, 159-170. doi:10.1037/h0076546

Hafer, C. L., & Bègue, L. (2005). Experimental research on just-world theory: problems, developments, and future challenges. *Psychological Bulletin, 131*, 128-167. doi:10.1037/0033-2909.131.1.128

Hafer, C. L., & Correy, B. L. (1999). Mediators of the relation between beliefs in a just world and emotional responses to negative outcomes. *Social Justice Research, 12*, 189-204. doi:10.1023/A:1022144317302

Hagedoorn, M., Buunk, B. P., & Van de Vliert, E. (2002). Do just world believers process unfair authoritative decisions differently? *Applied Psychology, 51*, 126-145. doi:10.1111/1464-0597.00082

Hall, D. T. (1996). *The Career is dead – Long live the career*. San Francisco, CA: Jossey-Bass.

Hall, D. T., & Chandler, D. E. (2005). Psychological success: When the career is a calling. *Journal of Organizational Behavior, 26*, 155-176. doi:10.1002/job.301

Hauenstein, N. M. A., McGonigle, T., & Flinder, S. W. (2001). A meta-analysis of the relationship between procedural justice and distributive justice: Implications for justice research. *Employee Responsibilities and Rights Journal, 13*, 39-56. doi:10.1023/A:1014482124497

Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the Job demand–control (-Support) model and psychological well-being. *Work & Stress, 24*, 1-35. doi:10.1080/02678371003683747

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*, 408-420. doi:10.1080/03637750903310360

Hebl, M. R., Foster, J. B., Mannix, L. M., & Dovidio, J. F. (2002). Formal and interpersonal discrimination: A field study of bias toward homosexual applicants. *Personality and Social Psychology Bulletin, 28*, 815-825. doi:10.1177/0146167202289010

Heller, D., Judge, T. A., & Watson, D. (2002). The confounding role of personality and trait affectivity in the relationship between job and life satisfaction. *Journal of Organizational Behavior, 23*, 815-835. doi:10.1002/job.168

Hellgren, J., & Sverke, M. (2003). Does job insecurity lead to impaired well-being or vice versa? Estimation of cross-lagged effects using latent variable modelling. *Journal of Organizational Behavior, 24*, 215-236. doi:10.1002/job.184

Hess, N., Jepsen, D. M., & Dries, N. (2011). Career and employer change in the age of the 'boundaryless' career. *Journal of Vocational Behavior, 81*, 280-288. doi:10.1016/j.jvb.2011.10.009

Hirschi, A. (2009). Career adaptability development in adolescence: Multiple predictors and effect on sense of power and life satisfaction. *Journal of Vocational Behavior*, *74*, 145-155. doi:10.1016/j.jvb.2009.01.002

Hirschi, A. (2011). Effects of orientations to happiness on vocational identity achievement. *The Career Development Quarterly, 59*, 367-378. doi:10.1002/j.2161-0045.2011.tb00075.x

Hirschi, A., Herrmann, A., & Keller, A. C. (2015). Career adaptivity, adaptability, and adapting: A conceptual and empirical investigation. *Journal of Vocational Behavior, 87,* 1-10. doi:10.1016/j.jvb.2014.11.008

Hobfoll, S. E. (1989). Conservation of resources: A new approach at conceptualizing stress. *American Psychologist, 44*, 513-524. doi:10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review, 50,* 337-421. doi:10.1111/1464-0597.00062

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments.* Odessa, FL: Psychological Assessment Resources.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213-218. doi:10.1016/0022-3999(67)90010-4

Holtz, B. C., & Harold, C. M. (2009). Fair today, fair tomorrow? A longitudinal investigation of overall justice perceptions. *Journal of Applied Psychology, 94*, 1185-1199. doi:10.1037/a0015900

Hoyle, R. H. (2006). Personality and self-regulation: Trait and information-processing perspectives. *Journal of Personality, 74*, 1507-1526. doi:10.1111/j.1467-6494.2006.00418.x

Hou, Z. J., Leung, S. A., Li, X., Li, X., & Xu, H. (2012). Career adapt-abilities scale—China form: Construction and initial validation. *Journal of Vocational Behavior*, *80*, 686-691. doi: 10.1016/j.jvb.2012.01.006

Hu, L.-T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 76–99). Thousand Oaks, CA: Sage.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 1-55. doi:10.1080/10705519909540118

Irving, P. G., Coleman, D. F., & Bobocel, D. R. (2005). The Moderating Effect of Negative Affectivity in the Procedural Justice-Job Satisfaction Relation. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 37*, 20-32. doi:10.1037/h0087242

Ito, J. K., & Brotheridge, C. M. (2005). Does supporting employees' career adaptability lead to commitment, turnover, or both?. *Human Resource Management*, *44*, 5-19. doi:10.1002/hrm.20037

Jahoda, M. (1981). Work, employment, and unemployment: Values, theories, and approaches in social research. *American Psychologist, 36*, 184-191. doi:10.1037/0003-066X.36.2.184

Jasinskaja-Lahti, I., Liebkind, K., & Perhoniemi, R. (2007). Perceived ethnic discrimination at work and well-being of immigrants in Finland: The moderating role of employment status and work-specific group-level control beliefs. *International Journal of Intercultural Relations, 31*, 223-242. doi:10.1016/j.ijintrel.2006.02.003

Johnston, C., Broonen, J. P., Stauffer, S., Hamtiaux, A., Pouyaud, J., Zecca, G., … & Rossier, J. (2013). Validation of an adapted French form of the Career Adapt-Abilities Scale in four Francophone countries. *Journal of Vocational Behavior, 83*, 1-10. doi:10.1016/j.jvb.2013.02.002

Johnston, C. S., Luciano, E. C., Maggiori, C., Ruch, W., & Rossier, J. (2013). Validation of the German version of the career adapt-abilities scale and its relation to orientations to happiness and work stress. *Journal of Vocational Behavior, 83*, 295-304. doi:10.1016/j.jvb.2013.06.002

Judge, T. A., & Colquitt, J. A. (2004). Organizational justice and stress: The mediating role of work-family conflict. *Journal of Applied Psychology, 89*, 395-404. doi:10.1037/0021-9010.89.3.395

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*, 530-541. doi:10.1037/0021-9010.87.3.530

Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19,* 151-188.

Judge, T. A., & Watanabe, S. (1993). Another look at the job satisfaction-life satisfaction relationship. *Journal of Applied Psychology*, *78*, 939-948. doi:10.1037/0021-9010.78.6.939

Jylhä, M. (2009). What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science & Medicine, 69*, 307-316. doi:10.1016/j.socscimed.2009.05.013

Kalimo, R., Taris, T. W., & Schaufeli, W. B. (2003). The effects of past and anticipated future downsizing on survivor well-being: an equity perspective. *Journal of Occupational Health Psychology, 8*, 91-109. doi:10.1037/1076-8998.8.2.91

Kalleberg, A. L. (2009). Precarious work, insecure workers: Employment relations in transition. *American Sociological Review, 74*, 1-22. doi:10.1177/000312240907400101

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285-311. doi:10.2307/239249

Karasek, R. A. (1985). *Job Content Instrument: Questionnaire and user's guide*. Los Angeles, CA: University of Southern.

Karoly, P. (1993). Mechanisms of self-regulation: A systems view. *Annual Review of Psychology, 44,* 23-52. doi:10.1146/annurev.ps.44.020193.000323

Keim, A. C., Landis, R. S., Pierce, C. A., & Earnest, D. R. (2014). Why do employees worry about their jobs? A meta-analytic review of predictors of job insecurity. *Journal of Occupational Health Psychology, 19,* 269-290. doi:10.1037/a0036743

Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., & Diener, M. (2005). Integrating the diverse definitions of happiness: A time-sequential framework of subjective well-being. *Journal of Happiness Studies*, *6*, 261-300. doi:10.1007/s10902-005-7226-8

King, Z. (2004). Career self-management: Its nature, causes and consequences. *Journal of Vocational Behavior, 65*, 112-133. doi:10.1016/S0001-8791(03)00052-6

Kivimäki, M., Elovainio, M., Vahetra, J., & Ferrie, J. E. (2003). Organizational justice and health of employees: Perspective cohort study. *Occupational and Environmental Medicine*, 60, 27-34. doi:10.1136/oem.60.1.27

Klehe, U.-C., Zikic, J., Van Vianen, A. E. M., & De Pater, I. E. (2011). Career adaptability, turnover and loyalty during organizational downsizing. *Journal of Vocational Behavior, 79*, 217-229. doi:10.1016/j.jvb.2011.01.004

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: The Guilford Press.

Kluckhohn, C. E., Murray, H. A., & Schneider, D. M. (1953). *Personality in nature, society, and culture*. Oxford, UK: Knopf.

Koen, J., Klehe, U. C., Van Vianen, A. E., Zikic, J., & Nauta, A. (2010). Job-search strategies and reemployment quality: The impact of career adaptability. *Journal of Vocational Behavior, 77*, 126-139. doi:10.1016/j.jvb.2010.02.004

Koen, J., Klehe, U. C., & Van Vianen, A. E. (2012). Training career adaptability to facilitate a successful school-to-work transition. *Journal of Vocational Behavior*, *81*, 395-408. doi:10.1016/j.jvb.2012.10.003

Körner, A., Reitzle, M., & Silbereisen, R. K. (2012). Work-related demands and life satisfaction: The effects of engagement and disengagement among employed and long-term unemployed people. *Journal of Vocational Behavior, 80*, 187-196. doi:10.1016/j.jvb.2011.05.004

Kravina, L., Falco, A., De Carlo, N. A., Andreassen, C. S., & Pallesen, S. (2014). Workaholism and work engagement in the family: The relationship between parents and children as a risk factor. *European Journal of Work and Organizational Psychology, 23*, 875-883. doi:10.1080/1359432X.2013.832208

Kravitz, D. A., & Klineberg, S. L. (2000). Reactions to two versions of affirmative action among Whites, Blacks, and Hispanics. *Journal of Applied Psychology, 85*, 597-611. doi:10.1037/0021-9010.85.4.597

Krings, F., & Olivares, J. (2007). At the doorstep to employment: Discrimination against immigrants as a function of applicant ethnicity, job type, and rater's prejudice. *International Journal of Psychology, 42*, 406-417. doi:10.1080/00207590701251

Krings, F., Johnston, C. S., Binggeli, S., & Maggiori, C. (2014). Selective incivility: Immigrant groups experience subtle workplace discrimination at different rates. *Cultural Diversity & Ethnic Minority Psychology, 20,* 491-498. doi:10.1037/a0035436

Krings, F., Sczesny, S., & Kluge, A. (2011). Stereotypical inferences as mediators of age discrimination: The role of competence and warmth. *British Journal of Management, 22*, 187-201. doi:10.1111/j.1467-8551.2010.00721.x

Kurz, K., Hillmert, S., & Grunow, D. (2006). Increasing instability in employment careers of West German men? A comparison of the birth cohorts 1940, 1955 and 1964. In H. P. Blossfeld., M. Mills., & Bernardi, F. (Eds.), *Globalization, uncertainty, and men's careers: An international comparison* (pp. 75-113). Cheltenham, UK: Edward Elgar Publishing.

Lagana, F., Elcheroth, G., Penic, S., Kleiner, B., & Fasel, R. (2011). National minorities and their representation in Swiss Surveys (II): Which practices make a difference? *Quality and Quantity, 47*, 1287-1314. doi:10.1007/s11135-011-9591-1

Latham, G. P., & Pinder, C. C. (2005). Work motivation theory and research at the dawn of the twenty-first century. *Annual Review of Psychology, 56*, 485-516. doi:10.1146/annurev.psych.55.090902.142105

Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York, NY: Springer.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Le, K., Donnellan, M. B., & Conger, R. (2014). Personality development at work: Workplace conditions, personality changes, and the corresponsive principle. *Journal of Personality, 82,* 44-56. doi:10.1111/jopy.12032

Lee, T. L., & Fiske, S. T. (2006). Not an outgroup, not yet an ingroup: Immigrants in the stereotype content model. *International Journal of Intercultural Relations, 30*, 751-768. doi:10.1016/j.ijintrel.2006.06.005

Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology, 51*, 482-509. doi:10.1037/0022-0167.51.4.482

Lerner, M. J. (1977). The justice motive: Some hypotheses as to its origins and forms. *Journal of Personality, 45*, 1-32. doi:10.1111/j.1467-6494.1977.tb00591.x

Lerner, M. J. (1978). "Belief in a just world" versus the "authoritarianism" syndrome... but nobody liked the Indians. *Ethnicity, 5*, 229-237.

Lerner, M. J. (1980). *The belief in a just world: A fundamental delusion*. New York, NY: Springer.

Lerner, M. J. (1987). Integrating societal and psychological rules of entitlement: The basic task of each social actor and fundamental problem for the social sciences. *Social Justice Research, 1*, 107-125. doi:10.1007/BF01049386

Lerner, M. J., & Montada, L. (1998). An Overview. In L. Montada, & M. J. Lerner (Eds.), *Responses to victimizations and belief in a just world* (pp. 1-7). New York, NY: Plenum Press.

Li, J., Yang, W., & Cho, S. (2006). Gender differences in job strain, effort-reward imbalance, and health functioning among Chinese physicians. *Social Science & Medecine, 62,* 1066-1077. doi:10.1016/j.socscimed.2005.07.011

Liebig, T., S. Kohls and K. Krause (2012). The labour market integration of immigrants and their children in Switzerland. *OECD Social, Employment and Migration Working Papers*, No. 128, OECD Publishing, Paris. doi: 10.1787/5k9fjjs1m2d2-en

Lind, E. A. (2001). Fairness heuristics theory: Justice judgments as pivotal cognitions in organizational relations. In J. Greenberg & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 56-88). Stanford, CA: Stanford University Press.

Lipkus, I., Dalbert, C., & Siegler, I. (1996). The importance of distinguishing the belief in a just world for self versus others: implications for psychological well-being. *Personality and Social Psychology Bulletin, 22*, 666-677. doi:10.1177/0146167296227002

Little, B. R. (1999). Personality and motivation: Personal action and the conative evolution. In L. Pervin & K. Oliver (Eds.). *Handbook of Personality : Theory and Research (2nd ed.) (pp.501-524).* New York, NY ; Guilford Press.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 151-173. doi:10.1207/S15328007SEM0902_1

Loi, R., Yang, J., & Diefendorff, J. M. (2009). Four-factor justice and daily job satisfaction: A multilevel investigation. *Journal of Applied Psychology, 94*, 770-781. doi:10.1037/a0015714

Lucas, R. E., Diener, E., & Sub, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology*, 71, 616 -628. doi:10.1037/0022-3514.71.3.616

Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science, 15*, 8-13. doi:10.1111/j.0963-7214.2004.01501002.x

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Personality Processes and Individual Differences, 3,* 592-615. doi:10.1037/a0025948

Luhmann, M., Lucas, R. E., Eid, M., & Diener, E. (2013). The prospective effect of life satisfaction on life events. *Social Psychological and Personality Science, 4,* 39-45. doi:10.1177/1948550612440105

Luhmann, M., Orth, U., Specht, J., Kandler, C., & Lucas, R. E. (2014). Studying changes in life circumstances and personality: It's about time. *European Journal of Personality, 28,* 256-266. doi:10.1002/per.1951

Maggiori, C., Johnston, C. S., Krings, F., Massoudi, K., & Rossier, J. (2013). The role of career adaptability and work conditions on general and professional well-being. *Journal of Vocational Behavior, 83*, 437-449. doi:10.1016/j.jvb.2013.07.001

Maggiori, C., Rossier, J., Krings, F., Johnston, C. S., & Massoudi, K. (in press). A longitudinal research on professional trajectories: Preliminary results from the 1st wave of data collection on a representative sample. In M. Ernst-Staehli, D. Joye, M. Oris, & C. Roberts (Eds.), *Surveying Vulnerabilities*. Dordrecht, The Netherlands: Springer.

Magnus, K., Diener, E., Fujita, F., & Pavot, W. (1993). Extraversion and neuroticism as predictors of objective life events: A longitudinal analysis. *Journal of Personality and Social Psychology, 65,* 1046-1053. doi:10.1037/0022-3514.65.5.1046

Massoudi, K. (2009). *Le stress professionnel: Une analyse des vulnérabilités individuelles et des facteurs de risque environnementaux* [Professional stress: Analysis of individuals vulnerabilities and environmental risk factors]. Bern, Switzerland: Peter Lang.

Matsumoto, D. (2006). Are cultural differences in emotion regulation mediated by personality traits? *Journal of Cross-Cultural Psychology*, *37*, 421-437. doi:10.1177/0022022106288478

Matsumoto, D. (2007). Culture, context, and behavior. *Journal of Personality*, *75*, 1285-1320. doi:10.1111/j.1467-6494.2007.00476.x

Matsumoto, D., & Yoo, S. H. (2006). Toward a new generation of cross-cultural research. *Perspectives on Psychological Science, 1,* 234-250. doi:10.1111/j.1745-6916.2006.00014.x

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods*, *12*, 23-44. doi:10.1037/1082-989X.12.1.23

McAdams, D. P., & Pals, J. L. (2006). A new big five: Fundamental principles for an integrative science of personality. *American Psychologist, 61*, 204-217. doi:10.1037/0003-066X.61.3.204

McArdle, S., Waters, L., Briscoe, J. P., & Hall, D. T. (Tim). (2007). Employability during unemployment: Adaptability, career identity and human and social capital. *Journal of Vocational Behavior, 71*, 247-264. doi:10.1016/j.jvb.2007.06.003

McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91-125). San Diego, CA: Academic press.

McCrae, R. R., & Costa, P. T. (1991). Adding Liebe und Arbeit: The full five-factor model and well-being. *Personality and Social Psychology Bulletin, 17*, 227-232. doi:10.1177/014616729101700217

McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 139-153). New York, NY: Guilford.

McCrae, R. R., & Costa, P. T., Jr., (2004). A contemplated revision of the NEO Five-Factor Inventory. *Personality and Individual Differences, 36*, 587-596. doi:10.1016/S0191-8869(03)00118-1

McCrae, R. R., & Terracciano, A. (2005). Universal features of personality traits from the observer's perspective: data from 50 cultures. *Journal of Personality and Social Psychology*, *88*, 547-561. doi:10.1037/0022-3514.88.3.547

McCrae, R. R., Costa Jr, P. T., Ostendorf, F., Angleitner, A., Hřebíčková, M., Avia, M. D., ... & Smith, P. B. (2000). Nature over nurture: temperament, personality, and life span development. *Journal of Personality and Social Psychology*, *78*, 173-186. doi:10.1037/0022-3514.78.1.173

McKee-Ryan, F., Song, Z., Wanberg, C. R., & Kinicki, A. J. (2005). Psychological and physical well-being during unemployment: A meta-analytic study. *Journal of Applied Psychology, 90*, 53-76. doi:10.1037/0021-9010.90.1.53

McMahon, M., Watson, M., & Bimrose, J. (2012). Career adaptability: A qualitative understanding from the stories of older women. *Journal of Vocational Behavior, 80*, 762-768. doi:10.1016/j.jvb.2012.01.016

Meier, L. L., & Semmer, N. K. (2013). Lack of reciprocity, narcissism, anger, and instigated workplace incivility: A moderated mediation model. *European Journal of Work and Organizational Psychology, 22*, 461-475. doi:10.1037/1076-8998.13.3.244

Meier, L. L., Semmer, N. K., Elfering, A., & Jacobshagen, N. (2008). The double meaning of control: Three-way interactions between internal resources, job control, and stressors

at work. *Journal of Occupational Health Psychology, 13*, 244-258. doi:10.1037/1076-8998.13.3.244

Mischel, W. (2009). From personality and assessment (1968) to personality science, 2009. *Journal of Research in Personality, 43,* 282-290. doi:10.1016/j.jrp.2008.12.037

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102,* 246-268. doi:10.1037/0033-295X.102.2.246

Mischel, W., & Shoda, Y. (1998). Reconciling processing dynamics and personality dispositions. *Annual Review of Psychology, 49,* 229-258. doi:10.1146/annurev.psych.49.1.229

Milam, A. C., Spitzmueller, C., & Penney, L. M. (2009). Investigating individual differences among targets of workplace incivility. *Journal of Occupational Health Psychology, 14*, 58-69. doi:10.1037/a0012683

Mroczek, D. K., & Almeida, D. M. (2004). The effect of daily stress, personality, and age on daily negative affect. *Journal of Personality, 72*, 355-378. doi:10.1111/j.0022-3506.2004.00265.x

Näswell, K., DeWitte, H. (2003). Who feels insecure in Europe? Predicting job insecurity from background variables. *Economic and Industrial Democracy, 24,* 189-214. doi:10.1177/0143831X03024002003

Nota, L., Ginevra, M. C., Santilli, S., & Soresi, S. (2014). Contemporary career construction: The role of career adaptability. In M. Coetzee (Ed.), *Psycho-social Career Meta-capacities* (pp. 247-263). New York, NY: Springer International Publishing.

OECD. (2012a). *International migration outlook 2012*. OECD Publishing. Retrieved from http://dx.doi.org/10.1787/migr_outlook-2012-en

OECD. (2012b). *Key statistics on migration in OECD countries*. Retrieved from http://www.oecd.org/document/4/0,3746,en_2649_37415_48326878_1_1_1_37415,00.html

Oishi, S., & Graham, J. (2010). Social ecology lost and found in psychological science. *Perspectives on Psychological Science*, *5*, 356-377. doi:10.1177/1745691610374588

Okhuysen, G. A., Lepak, D., Ashcraft, K. L., Labianca, G. J., Smith, V., & Steensma, H. K. (2013). Theories of work and working today. *Academy of Management Review*, *38*, 491-502. doi:10.5465/amr.2013.0169

Otto, K., & Dalbert, C. (2005). Belief in a just world and its functions for young prisoners. *Journal of Research in Personality, 39*, 559-573. doi:10.1016/j.jrp.2005.01.004

Otto, K., & Schmidt, S. (2007). Dealing with stress in the workplace: Compensatory effects of belief in a just world. *European Psychologist, 12*, 272-282. doi:10.1027/1016-9040.12.4.272

Otto, K., Boos, A., Dalbert, C., Schöps, D., & Hoyer, J. (2006). Posttraumatic symptoms, depression, and anxiety of flood victims: The impact of the belief in a just world. *Personality and Individual Differences, 40*, 1075-1084. doi:10.1016/j.paid.2005.11.010

Otto, K., Glaser, D., & Dalbert, C. (2009). Mental health, occupational trust, and quality of working life: Does belief in a just world matter? *Journal of Applied Social Psychology, 39*, 1288-1315. doi:10.1111/j.1559-1816.2009.00482.x

Park, N., Peterson, C., & Ruch, W. (2009). Orientations to happiness and life satisfaction in twenty-seven nations. *The Journal of Positive Psychology, 4*, 273-279. doi:10.1080/17439760902933690

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior, 74*, 264-282. doi:10.1016/j.jvb.2009.01.001

Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life scale. *Psychological Assessment, 5*, 164-172. doi:10.1037/1040-3590.5.2.164

Pearson, C. M., & Porath, C. L. (2004). On incivility, its impact, and directions for future research. In R.W. Griffin, A. O'Leary-Kelly (Eds.), *The dark side of organizational behavior* (pp. 403-426). San Francisco, CA: Jossey-Bass

Petersen, L. E., & Dietz, J. (2005). Prejudice and enforcement of workforce homogeneity as explanations for employment discrimination. *Journal of Applied Social Psychology, 35*, 144-159. doi:10.1111/j.1559-1816.2005.tb02097.x

Peterson, C. (2006). *A primer in positive psychology*. New York, NY: Oxford University Press.

Peterson, C., Park, N., & Seligman, M.E. P. (2005). Orientations to happiness and life satisfaction: The full versus the empty life. *Journal of Happiness Studies, 6*, 25-41. doi:10.1007/s10902-004-1278-z

Peterson, C., Ruch, W., Beermann, U., Park, N., Seligman, M. E. P. (2007). Strengths of character, orientation to happiness, and life satisfaction. *The Journal of Positive Psychology, 2*, 149-156. doi:10.1080/17439760701228938

Pettigrew, T. F., & Meertens, R. W. (1995). Subtle and blatant prejudice in western Europe. *European Journal of Social Psychology, 25*, 57-75. doi:10.1002/ejsp.2420250106

Pew Research Center (2012). *The rise of Asian Americans*. Retrieved from http://www.pewsocialtrends.org/2012/06/19/the-rise-of-asian-americans/

Porfeli, E. J., & Savickas, M. L. (2012). The Career Adapt-Abilities Scale: Construction, reliability, and initial validity of the USA form. *Journal of Vocational Behavior, 80*, 748-753. doi:10.1016/j.jvb.2012.01.009

Pouyaud, J., Vignoli, E., Dosnon, O., & Lallemand, N. (2012). Career adapt-abilities scale-France form: Psychometric properties and relationships to anxiety and motivation. *Journal of Vocational Behavior, 80*, 692-697. doi:10.1016/j.jvb.2012.01.021

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731. doi:10.3758/BF03206553

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891. doi:10.3758/BRM.40.3.879

Price, R. H. (1992). Psychosocial impact of job loss on individuals and families. *Current Directions in Psychological Science, 1,* 9-11. doi:10.2307/20182115

Proyer, R. T., Annen, H., Eggimann, N., Schneider, A., & Ruch, W. (2012). Assessing the "good life" in a military context: How does life and work-satisfaction relate to orientations to happiness and career-success among Swiss professional officers? *Social Indicators Research, 106*, 577-590. doi:10.1007/s11205-011-9823-8

Pytlik Zillig, L. M., Hemenover, S. H., Dienstbier, R. A. (2002). What do we assess when we assess a big 5 trait? A content analysis of the affective, behavioural, and cognitive processes represented in big 5 personality inventories. *Personality and Social Psychology Bulletin, 28,* 847-858. doi:10.1177/0146167202289013

Raubenheimer, J. (2004). An item selection procedure to maximize scale reliability and validity. *SA Journal of Industrial Psychology, 30*, 59-64. doi:10.4102/sajip.v30i4.168

Realo, A., & Dobewall, H. (2011). Does life satisfaction change with age? A Comparison of Estonia, Finland, Latvia, and Sweden. *Journal of Research in Personality, 45*, 297-308.

Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, *47*, 667-696. doi:10.1080/00273171.2012.715555

Robbins, S. B., & Kliewer, W. L. (2000). Advances in theory and research on subjective well-being. In S. D. Brown & R. W. Lent (Eds.), *Handbook of Counseling Psychology* (3rd ed, pp. 310-345). Hoboken, NJ : John Wiley & Sons

Roberts, B. W., Caspi, A., & Moffitt, T. E. (2003). Work experiences and personality development in young adulthood. *Journal of Personality and Social Psychology, 84,* 582-593. doi:10.1037/0022-3514.84.3.582

Rogers, W. M., & Schmitt, N. (2004). Parameter recovery and model fit using multidimensional composites: A comparison of four empirical parceling algorithms. *Multivariate Behavioral Research, 39*, 379-412. doi:10.1207/S15327906MBR3903_1

Rosenblatt, Z., Talmud, I., & Ruvio, A. (1999). A gender-based framework of the experience of job insecurity and its effects on work attitudes. *European Journal of Work and Organizational Psychology, 8*, 197-217. doi:10.1080/135943299398320

Rossier J. (2014). Personality assessment and career interventions. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention: Foundations* (Vol. 1). Washington, DC: American Psychological Association.

Rossier, J. (2015). Career adaptability and life designing. In L. Nota & J. Rossier (Eds.), *Handbook of the life design paradigm: From practice to theory, from theory to practice*. Göttingen, Germany: Hogrefe.

Rossier, J., Hansenne, M., Baudin, N., & Morizot, J. (2012a). Zuckerman's revised alternative five-factor model: Validation of the Zuckerman-Kuhlman-Aluja Personality Questionnaire in four French-speaking countries. *Journal of Personality Assessment, 94*, 358-365. doi:10.1080/00223891.2012.657024

Rossier, J., Zecca, G., Stauffer, S. D., Maggiori, C., & Dauwalder, J. P. (2012b). Career adapt-abilities scale in a French-speaking Swiss sample: Psychometric properties and relationships to personality and work engagement. *Journal of Vocational Behavior, 80*, 734-743. doi:10.1016/j.jvb.2012.01.004

Ruch, W., Martinez-Marti, M. L., Heintz, S., & Brouwers, S. A. (2014). Short form of the Orientations to Happiness questionnaire for the German-speaking countries: Development and analysis of the psychometric properties. *Swiss Journal of Psychology, 73,* 225-234. doi:10.1024/1421-0185/a000141

Ruch, W., Harzer, C., Proyer, R. T., Park, N., & Peterson, C. (2010). Ways to happiness in German-speaking countries: The adaptation of the German version of the Orientations to Happiness questionnaire in paper-pencil and internet samples. *European Journal of Psychological Assessment, 26*, 227-234. doi:10.1027/1015-5759/a000030

Rudisill, J. R., Edwards, J. M., Hershberger, P. J., Jadwin, J. E., & McKee, J. M. (2010). Coping with job transitions over the work life. In T. W. Miller (Ed.), *Handbook of Stressful Transitions Across the Lifespan* (pp. 111-131). New York, NY: Springer

Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly, 45*, 247-259. doi:10.1002/j.2161-0045.1997.tb00469.x

Savickas, M. L. (2002). Career construction: A developmental theory of vocational behavior. In D. Brown (Ed.), *Career choice and development* (pp. 149-205). San Francisco, CA: Jossey-Bass.

Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 42-70). Hoboken, NJ: Wiley.

Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior, 80*, 661-673. doi:10.1016/j.jvb.2012.01.011

Savickas, M. L., Nota, L., Rossier, J., Dauwalder, J. P., Duarte, M. E., Guichard, J., Soresi, S., … van Vianen, A. E. M. (2009). Life designing: A paradigm for career construction in the 21st century. *Journal of Vocational Behavior, 75*, 239-250. doi:10.1016/j.jvb.2009.04.004

Savickas, M. L., Nota, L., Rossier, J., Dauwalder, J.-P., Duarte, M. E., Guichard, J., … van Vianen, A. E. M. (2009). Life designing: A paradigm for career construction in the 21st century. *Journal of Vocational Behavior, 75*, 239-250. doi:10.1016/j.jvb.2009.04.004

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*, 293-315. doi:10.1002/job.248

Schimmack, U., Diener, E., & Oishi, S. (2002). Life-satisfaction is a momentary judgment and a stable personality characteristic: The use of chronically accessible and stable sources. *Journal of Personality*, *70*, 345-384. doi:10.1111/1467-6494.05008

Schmitz, N., Hartkamp, N., Baldini, C., Rollnik, J., & Tress, W. (2001). Psychometric properties of the German version of the NEO-FFI in psychosomatic outpatients. *Personality and Individual Differences, 31*, 713-722. doi:10.1016/S0191-8869(00)00173-2

Schneider, T. R. (2004). The role of neuroticism on psychological and physiological stress responses. *Journal of Experimental Social Psychology, 40*, 795-804. doi:10.1016/j.jesp.2004.04.005

Schwartz, S. J., Unger, J. B., Zamboanga, B. L., & Szapocznik, J. (2010). Rethinking the concept of acculturation: Implications for theory and research. *American Psychologist*, *65*(4), 237-251. doi:10.1037/a0019330

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York. NY: Free Press.

Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14. doi:10.1037/0003-066X.55.1.5

Selye, H. (1982). *Handbook of stress: Theoretical and clinical aspects*. New York, NY: Free Press.

Shoda, Y., LeeTiernan, S., & Mischel, W. (2002). Personality as a dynamical system: Emergence of stability and distinctiveness from intra- and interpersonal interactions. *Personality and Social Psychology Review, 6,* 316-325. doi:10.1207/S15327957PSPR0604_06

Shoda, Y., Mischel, W., & Wright, J. C. (1993). The role of situational demands and cognitive competencies in behaviour organization and personality coherence. *Journal of Personality and Social Psychology, 65,* 1023-1035. doi:10.1037/0022-3514.65.5.1023

Sibley, C. G. (2011). The BIAS-Treatment Scale (BIAS-TS): A measure of the subjective experience of active and passive harm and facilitation. *Journal of Personality Assessment, 93*, 300-315. doi:10.1080/00223891.2011.559389

Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A report from the WHOQOL group. *Quality of life Research, 13*, 299-310. doi:10.1023/B:Qure.0000018486.91360.00

Skitka, L. J. (2003). Of different minds: An accessible identity model of justice reasoning. *Personality and Social Psychology Review, 7*, 286-297. doi:10.1207/S15327957PSPR0704_02

Skitka, L. J., Aramovich, N. P., Lytle, B. L., & Sargis, E. G. (2010). Knitting together an elephant: An integrative approach to understanding the psychology of justice reasoning. In D. R. Bobocel, A. C. Kay, M. P. Zanna, & J. M. Olson (Eds.), *The psychology of justice and legitimacy: The Ontario symposium* (Vol. 11, pp. 1-26). Philadelphia, PA: Psychology Press.

Sora, B., Caballer, A., Peiró, J. M., Silla, I., & Gracia, F. J. (2010). Moderating influence of organizational justice on the relationship between job insecurity and its outcomes: A multilevel analysis. *Economic and Industrial Democracy, 31,* 613-637. doi:10.1177/0143831X10365924

Soresi, S., Nota, L., & Ferrari, L. (2012). Career adapt-abilities scale-Italian form: Psychometric properties and relationships to breadth of interests, quality of life, and perceived barriers. *Journal of Vocational Behavior, 80*, 705-711. doi:10.1016/j.jvb.2012.01.020

Specht, J., Bleidorn, W., Denissen, J. J. A., ... Zimmermann, J. (2014). What drives adult personality development? A comparison of theoretical perspectives and empirical evidence. *European Journal of Personality, 28,* 216-230. doi:10.1002/per.1966

Spector, P. E. (2005). *Industrial and organizational psychology: Research and practice*. Hoboken, NJ: Wiley.

Spector, P. E., Zapf, D., Chen, P. Y., & Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: Don't through out the baby with the bath water. *Journal of Organizational Behavior, 21*, 79-95. doi:10.1002/(SICI)1099-1379(200002)21:1<79::AID-JOB964>3.0.CO;2-G

Spini, D., (2003). Measurement equivalence of value types across twenty-one countries. *Journal of Cross-Cultural Psychology, 33*, 3-23. doi:10.1177/0022022102239152

Stauffer, S. D., Maggiori, C., Froidevaux, A., & Rossier, J. (2014). Adaptability in action: Using personality, aptitude, and interest data to help clients increase their emotional, social, and cognitive career meta-capacities. In M. Coetzer (Ed.), *Perspectives on psycho-social career meta-capacities* (pp. 55-74). New York, NY: Springer.

Stawski, R. S., Sliwinski, M. J., Almeida, D. M., & Smyth, J. M. (2008). Reported exposure and emotional reactivity to daily stressors: The roles of adult age and global perceived stress. *Psychology and Aging*, *23*, 52-61. doi:10.1037/0882-7974.23.1.52

Steel, P., Schmidt, J., & Schultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 134*, 138-161. doi:10.1037/0033-2909.134.1.138

Strelan, P. (2007). The prosocial, adaptive qualities of just world beliefs: Implications for the relationship between justice and forgiveness. *Personality and Individual Differences, 43*, 881-890. doi:10.1016/j.paid.2007.02.015

Super, D. E. (1957). *The psychology of careers*. New York, NY: Harper & Row.

Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (2nd ed., pp. 197–261). San Francisco, CA: Jossey-Bass.

Super, D. E., & Knasel, E. G. (1981). Career development in adulthood: Some theoretical problems and a possible solution. *British Journal of Guidance & Counselling*, *9*, 194-201. doi:10.1080/03069888108258214

Sutton, R. M., & Douglas, K. M. (2005). Justice for all, or just for me? More evidence of the importance of the self-other distinction in just-world beliefs. *Personality and Individual Differences, 39*, 637-645. doi:10.1016/j.paid.2005.02.010

Svedberg, P., Bardage, C., Sandin, S., & Pedersen, N. L. (2006). A prospective study of health, life-style and psychosocial predictors of self-rated health. *European Journal of Epidemiology, 21*, 767-776. doi:10.1007/s10654-006-9064-3

Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology, 68*, 199-214. doi:10.1037/0022-3514.68.2.199

Swiss Federal Statistics Office (2012). *Panorama: Employment and income from employment*. Retrieved from http://www.bfs.admin.ch/bfs/portal/en/index/themen/03/01/pan.html

Taris, T. W., & Kompier, M. A. (2014). Cause and effect: Optimizing the designs of longitudinal studies in occupational health psychology. *Work & Stress, 28*, 1-8. doi:10.1080/02678373.2014.878494

Taris, T. W., Kalimo, R., & Schaufeli, W. B. (2002). Inequity at work: its measurement and association with worker health. *Work & Stress, 16*, 287-301. doi:10.1080/0267837021000054500

Tay, L., & Harter, J. K. (2013). Economic and labor market forces matter for worker well-being. *Applied Psychology: Health and Well-Being, 5*, 193-208. doi:10.1111/aphw.12004

Tepper, B. J. (2001). Health consequences of organizational injustice: Tests of main and interactive effects. *Organizational Behavior and Human Decision Processes, 86*, 197-215. doi:10.1006/obhd.2001.2951

Teixeira, M. A. P., Bardagi, M. P., Lassance, M. C. P., Magalhães, M. D. O., & Duarte, M. E. (2012). Career adapt-abilities scale—Brazilian form: psychometric properties and relationships to personality. *Journal of Vocational Behavior*, *80*, 680-685. doi:10.1016/j.jvb.2012.01.007

Thomas, C., Benzeval, M., & Stansfeld, S. A. (2005). Employment transitions and mental health: an analysis from the British household panel survey. *Journal of Epidemiology and Community Health*, *59*, 243-249. doi:10.1136/jech.2004.019778

Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., & Plewa, C. (2014). Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism. *Journal of Vocational Behavior, 84*, 39-48. doi:10.1016/j.jvb.2013.11.004

Tomaka, J. & Blascovich, J. (1994). Effects of justice beliefs on cognitive appraisal of and subjective physiological, and behavioural responses to potential stress. *Journal of Personality and Social Psychology, 67*, 732-740. doi:10.1037/0022-3514.67.4.732

Tomasik, M. J., & Silbereisen, R. K. (2009). Demands of social change as a function of the political context, institutional filters, and psychosocial resources. *Social Indicators Research*, *94*, 13-28. doi:10.1007/s11205-008-9332-6

Urbanaviciute, I., Kairys, A., Pociute, B., & Liniauskaite, A. (2014). Career adaptability in Lithuania: A test of psychometric properties and a theoretical model. *Journal of Vocational Behavior*, 85, *433-442.* doi:10.1016/j.jvb.2014.09.005

Vander Elst, T., Van den Broeck, A., De Cuyper, N., & De Witte, H. (2014). On the reciprocal relationship between job insecurity and employee well-being: Mediation by perceived control? *Journal of Occupational and Organizational Psychology, 87,* 671-693. doi:10.1111/joop.12068

Vancouver, J. B., & Day, D. V. (2005). Industrial and organizational research on self-regulation: From constructs to applications. *Applied Psychology: An International Review, 54*, 155-185. doi: 10.1111/j.1464-0597.2005.00202.x

van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée [European Journal of Applied Psychology], 54*, 119-135. doi:10.1016/j.erap.2003.12.004.

Van Vianen, A. E. M., Klehe, U.-C., Koen, J., & Dries, N. (2012). Career adapt-abilities scale - Netherlands form: Psychometric properties and relationships to ability, personality, and regulatory focus. *Journal of Vocational Behavior, 80*, 716-724. doi:10.1016/j.jvb.2012.01.002

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*, 4-70. doi:10.1177/109442810031002

Van der Doef, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research. *Work & Stress*, *13*, 87-114. doi:10.1080/026783799296084

Veldhoven, M. V., Jonge, J. D., Broersen, S., Kompier, M., & Meijman, T. (2002). *Specific relationships between psychosocial job conditions and job-related stress: A three-level analytic approach. Work & Stress, 16*, 207-228. doi:10.1080/02678370210166399

Verbruggen, M. (2012). Psychological mobility and career success in the 'New'career climate. *Journal of Vocational Behavior*, *81*, 289-297. doi:10.1016/j.jvb.2011.10.010

Verhoeven, C., Maes, S., Kraaij, V., & Joekes, K. (2003). The job demand-control-social support model and wellness/health outcomes: A European study. *Psychology and Health*, *18*, 421-440. doi:10.1080/0887044031000147175

Vella-Brodrick, D. A., Park, N. A., & Peterson, C. (2009). Three ways to be happy: Pleasure, engagement and meaning–findings from Australian and US samples. *Social Indicators Research, 90*, 165-179. doi:10.1007/s11205-008-9251

Vilhjálmsdóttir, G., Kjartansdóttir, G. B., Smáradóttir, S. B., & Einarsdóttir, S. (2012). Career adapt-abilities scale—Icelandic form: Psychometric properties and construct validity. *Journal of Vocational Behavior*, *80*, 698-704. doi:10.1016/j.jvb.2012.01.013

Viswesvaran, C., & Ones, D. S. (2002). Examining the construct of organizational justice: A meta-analytic evaluation of relations with work attitudes and behaviors. *Journal of Business Ethics*, *38*, 193-203. doi:10.1023/A:1015820708345

Wanberg, C. R., Glomb, T. M., Song, Z., & Sorenson, S. (2005). Job-search persistence during unemployment: A 10-wave longitudinal study. *Journal of Applied Psychology*, *90*, 411-430. doi:10.1037/0021-9010.90.3.411

Wanberg, C. R. (2012). The individual experience of unemployment. *Annual Review of Psychology, 63*, 369-396. doi:10.1146/annurev-psych-120710-100500

Wang, L., & Lin, W. (2011). Wording effects and the dimensionality of the General Health Questionnaire (GHQ-12). *Personality and Individual Differences, 50*, 1056-1061. doi:10.1016/j.paid.2011.01.024

Warr, P. B. (1987). *Work, unemployment and mental health*. Oxford, UK: Clarendon Press.

Weiss, D. J., Dawis, R.V., England, G.W., & Lofquist, L. H. (1967). *Manual for the Minnesota Satisfaction Questionnaire*. Minneapolis, MN: University of Minnesota, Industrial Relation Center.

Wilkins, K. G., Santilli, S., Ferrari, L., Nota, L., Tracey, T. J., & Soresi, S. (2014). The relationship among positive emotional dispositions, career adaptability, and satisfaction in Italian high school students. *Journal of Vocational Behavior*, *85*, 329-338. doi:10.1016/j.jvb.2014.08.004

Wöhrle, J., van Oudenhoven, J. P., Otten, S., & van der Zee, K. I. (2014). Personality characteristics and workplace trust of majority and minority employees in the

Netherlands. *European Journal of Work & Organizational Psychology.* Advance online publication. doi:10.1080/1359432X.2014.891583

Zacher, H. (2014a). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behavior, 84*, 21-30. doi:10.1016/j.jvb.2013.10.002

Zacher, H. (2014b). Individual difference predictors of change in career adaptability over time. *Journal of Vocational Behavior, 84*, 188-198. doi:10.1016/j.jvb.2014.01.001

Zacher, H., & Bock, A. (2014). Mature age job seekers: The role of proactivity. *Journal of Managerial Psychology*, *29*, 1082-1097. doi:10.1108/JMP-05-2012-0158

Zacher, H.**,** Feldman, D. C., & Schulz, H. (2014). Age, occupational strain, and well-being: A person-environment fit perspective. In P. L. Perrewé, J. Halbesleben, & C. C. Rosen (Eds.), *Research in occupational stress and well-being* (Vol. 12, pp. 83-111). Bingley, UK: Emerald.

Zhou, Z. E., Yan, Y., Che, X. X., & Meier, L. L. (2014). Effect of workplace incivility on end-of-work negative affect: Examining individual and organizational moderators in a daily diary study. *Journal of Occupational Health Psychology, 20,* 117-130. doi:10.1037/a0038167

Zikic, J., & Klehe, U.-C. (2006). Job loss as a blessing in disguise: The role of career exploration and career planning in predicting reemployment quality. *Journal of Vocational Behavior, 69*, 391-409. doi:10.1016/j.jvb.2006.05.007

## X. Appendices

Appendix 1. Items in the CAAS French-language form and CAAS International form 2.0

| French-language Form | International form 2.0 |
|---|---|
| *Concern* | |
| Me préparer à mon avenir / Preparing for the future | Me préparer à mon avenir / Preparing for the future |
| Réfléchir à ce que sera mon avenir / Thinking about what my future will be like | Réfléchir à ce que sera mon avenir / Thinking about what my future will be like |
| Devenir conscient des choix de formation et de profession que je dois faire / Becoming aware of the educational and career choices that I must make | Devenir conscient des choix de formation et de profession que je dois faire / Becoming aware of the educational and career choices that I must make |
| Me rendre compte que mes choix d'aujourd'hui engagent mon avenir / Realizing that today's choices shape my future | Me rendre compte que mes choix d'aujourd'hui engagent mon avenir / Realizing that today's choices shape my future |
| Me sentir concerné par mon parcours professionnel / Concerned about my career | Me sentir concerné par mon parcours professionnel / Concerned about my career |
| *Prendre en charge mon avenir / Taking charge of my future* | *Planifier la façon d'atteindre mes objectifs / Planning how to achieve my goals* |
| *Control* | |
| Rester optimiste / Keeping upbeat | Rester optimiste / Keeping upbeat |
| *Avoir une vision positive de mon futur / Expecting the future to be good* | *Prendre moi-même décisions / Making decisions by myself* |
| *Trouver la force de garder le cap / Finding the strength to keep going* | *Défendre mes convictions / Sticking up for my beliefs* |
| Compter sur moi-même / Counting on myself | Compter sur moi-même / Counting on myself |
| Faire ce qui est bon pour moi / Doing what's right for me | Faire ce qui est bon pour moi / Doing what's right for me |
| *Apprendre à prendre les meilleures décisions possibles / Learning how to make better decisions* | *Prendre la responsabilité de mes actes / Taking responsibility for my actions* |
| *Curiosity* | |
| Observer différentes manières de faire les choses / Observing different ways of doing things | Observer différentes manières de faire les choses / Observing different ways of doing things |

| | |
|---|---|
| Explorer les options avant de faire un choix / Investigating options before making a choice | Explorer les options avant de faire un choix / Investigating options before making a choice |
| Aller au fond des questions que je me pose / Probing deeply into questions I have | Aller au fond des questions que je me pose / Probing deeply into questions I have |
| *Rechercher de l'information à propos des choix que j'ai à faire / Searching for information about choices I must make* | *Explorer mon environnement / Exploring my surroundings* |
| *Envisager les alternatives qui s'offrent à moi / Considering my alternatives* | *Chercher les occasions de progresser en tant que personne / Looking for opportunities to grow as a person* |
| Devenir curieux de nouvelles opportunités / Becoming curious about new opportunities | Devenir curieux de nouvelles opportunités / Becoming curious about new opportunities |
| | *Confidence* |
| *Relever des défis / Doing challenging things* | *Prendre soin de bien faire les choses/ Taking care to do things well* |
| Développer mes capacités / Working up to my ability | Développer mes capacités / Working up to my ability |
| Surmonter les obstacles / Overcoming obstacles | Surmonter les obstacles / Overcoming obstacles |
| Acquérir de nouvelles compétences / Learning new skills | Acquérir de nouvelles compétences / Learning new skills |
| Résoudre des problèmes / Solving problems | Résoudre des problèmes / Solving problems |
| Me montrer performant dans ce que j'ai à faire / Performing tasks efficiently | Me montrer performant dans ce que j'ai à faire / Performing tasks efficiently |

*Note*. Items in italics are different in the two versions

Appendix 2. Items in the CAAS German-language form

| English Items | German Items |
|---|---|
| | *Concern* |
| Thinking about what my future will be like | darüber nachzudenken, wie meine Zukunft sein wird. |
| Realizing that today's choices shape my future | mir darüber im Klaren zu sein, dass meine heutigen Entscheidungen meine Zukunft prägen. |
| Preparing for the future | mich für die Zukunft vorzubereiten. |
| Becoming aware of the educational and career choices that I must make | mir der Entscheidungen bewusst zu werden, die ich bezüglich Ausbildung und Beruf treffen muss. |
| Planning how to achieve my goals | zu planen, wie ich meine Ziele erreiche. |
| Concerned about my career | mich mit meiner Karriere zu befassen. |
| | *Control* |
| Keeping upbeat | optimistisch zu bleiben |
| Making decisions by myself | selbst Entscheidungen zu treffen. |
| Taking responsibility for my actions | Verantwortung für mein Handeln zu übernehmen |
| Sticking up for my beliefs | mich für meine Überzeugungen einzusetzen. |
| Counting on myself | auf mich selbst zu zählen. |
| Doing what is right for me | das zu tun, was richtig ist für mich. |
| | *Curiosity* |
| Exploring my surroundings | meine Umwelt zu erkunden. |
| Looking for opportunities to grow as a person | nach Gelegenheiten zu suchen, um als Person zu wachsen. |
| Investigating options before making a choice | Möglichkeiten zu erforschen bevor ich eine Entscheidung treffe. |

| | |
|---|---|
| Observing different ways of doing things | verschiedene Arten wahrnehmen Dinge zu tun. |
| Probing deeply into questions I have | den Fragen, die ich mir stelle, auf den Grund zu gehen. |
| Becoming curious about new opportunities | neugierig zu sein auf neue Gelegenheiten. |
| | *Confidence* |
| Performing tasks efficiently | Aufgaben effizient auszuführen. |
| Taking care to do things well[a] | darauf zu achten, Dinge gut zu machen. [a] |
| Learning new skills | neue Fertigkeiten zu lernen. |
| Working up to my ability | meine Fähigkeiten zu entwickeln. |
| Overcoming obstacles | Hindernisse zu überwinden. |
| Solving problems | Probleme zu lösen. |

*Note*. In a German context, the item "Working up to my ability" (a) can be replaced by the item "use the best of my competence" at the suggestion of Mark Savickas, the author of the scale.