Validation of the German Career Decision-Making Profile—An Updated 12-Factor Version

Journal of Career Assessment

2018, Vol. 26(1) 111–136

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DOI: 10.1177/1069072716679996

journals.sagepub.com/home/jca

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Abstract

The Career Decision-Making Profile (CDMP) was developed by Gati and colleagues in 2010 as an attempt to reliably measure which strategies individuals apply when making career decisions. In order to provide counseling and coaching professionals with a German version of the scale, we translated and validated the German version (G-CDMP) in two studies (total $N = 622$). Results of Study 1 verified the proposed 12-factor structure by means of confirmatory factor analyses, confirming that the G-CDMP assesses 12 distinct career decision-making strategies. Results of Study 2 demonstrated the G-CDMP's construct validity on subscale level by relating it to self-evaluations (e.g., occupational self-efficacy) and personality (i.e., the Big Five) as well as to career-related constructs, such as career adaptability and cognitive reactions toward career-life decisions (e.g., life satisfaction). As the studies provide support for the G-CDMP's factor structure and its construct validity, implications for its use during career counseling are discussed.

Keywords

career decision-making, German career decision-making profile, G-CDMP, career counseling, confirmatory factor analysis, scale validation

Supporting sound career decisions is a major focus of career counseling interventions (Gati, Krausz, & Osipow, 1996). The major concerns clients bring into counseling relate to career decision-making difficulties (Saka, Gati, & Kelly, 2008), grounded, for example, in discrepancies between personal attributes (e.g., values, skills) and vocational alternatives, and therefore, raising self-knowledge and

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supporting self-exploration is considered especially useful (Gati & Asulin-Peretz, 2011; Lofquist & Dawis, 1991). Accordingly, there are plenty of instruments assessing clients' career decision difficulties or clients' career-related indecisiveness (Osipow, 1999). By contrast, instruments assessing individuals' career decision-making styles are scarce (Gati, Landman, Davidovitch, Asulin-Peretz, & Gadassi, 2010). Moreover, these instruments tend to focus on one dominant decision style rather than reflecting the variety of decision strategies individuals potentially apply (Gati, Gadassi, & Mashiah-Cohen, 2012; Ginevra, Nota, Soresi, & Gati, 2012).

Accounting for the demand of psychometrically valid instruments differentiating between career decision-making styles, the Career Decision-Making Profile (CDMP) was introduced in 2010. The CDMP provides both counselors and clients with information about which decision strategies individuals apply when deciding upon, for example, career paths and employment opportunities (Gati et al., 2010). Considering the individual CDMP as a combination of multiple decision-making strategies (Gati et al., 2010; Ginevra et al., 2012; Singh & Greenhaus, 2004), the CDMP provides researchers and practitioners with an instrument to assess individuals' multidimensional career decision-making. Career counselors are encouraged to apply the CDMP to plan their counseling interventions (Gadassi, Gati, & Dayan, 2012; Gati & Levin, 2014), which are supposedly more helpful if the reflection upon currently applied strategies and the stimulation of using more advantageous strategies are based upon sound knowledge of clients' current decision styles (Ginevra et al., 2012). Alternatively, research benefits from assessing multiple career decision-making strategies of individuals to test for basic interindividual differences regarding, for example, age, employment status, or life situation, and to identify the adaptability of specific strategies for career development (Gati et al., 2010; Ginevra et al., 2012).

At present, the CDMP's application is limited to Hebrew-, English-, Chinese-, and Italian-speaking countries. An application to other cultural contexts is highly warranted (Gadassi et al., 2012). The present study introduces the German version of the CDMP (G-CDMP). This is relevant, given that the German-speaking countries (Germany, Austria, and Switzerland) have a huge counseling market with a permanently increasing market demand (Gross & Stephan, 2015).

According to previous research on the CDMP, which confirms its psychometric properties and factor structure in American, Israeli, Chinese, and Italian samples (English and Hebrew version: Gati et al., 2010; Italian version: Ginevra et al., 2012; Chinese version: Tian et al., 2014; Chinese and English version: Guan et al., 2015), we test whether the theoretical 12-factor structure also exists in a German sample. Additionally, by relating the CDMP subscales with career-relevant traits and behaviors, the study will expand knowledge on the relationship of the CDMP dimensions with career constructs while revealing its convergent validity. In view of previous validation samples which predominantly was comprised of adolescents and young adults (e.g., young adults in a preacademic preparatory program, Gati et al., 2010; adolescents, Ginevra et al., 2012; Nota, Ginevra, & Soresi, 2012; university students, Guan et al., 2015; Nota et al., 2012; Tian et al., 2014), we aimed to validate the G-CDMP in a more heterogeneous sample regarding both age and employment status. In doing so, we further offer a foundation to interculturally compare the relations between career decision-making strategies and career-relevant traits and behaviors of a German sample with previous validation samples with corresponding heterogeneity (e.g., Guan et al., 2015). Based upon our findings, we finally offer recommendations for career counselors and coaches who aim to support their clients' career decision-making processes.

The CDMP

The CDMP was developed by Gati and colleagues in 2010. The development of the CDMP was based on a multidimensional understanding of career decision-making. Rather than assuming that career decisions rely upon one dominant career decision-making strategy, the CDMP considers both

personality-related factors and situational influences regarding decision-making behavior, thus defining career decision-making as a pattern of strategies being adopted when making such decisions. This pattern is stable in the short term (2 weeks) and over a 1-year period (Gati & Levin, 2012).

The CDMP's multidimensional structure was validated in both a Hebrew and an English version by means of confirmatory factor analysis (CFA), which revealed that 11 dimensions were adequately measured. Since 2012, this multidimensionality has been expanded by one additional subscale (Gati et al., 2012), which allows a differentiation between the following career decision-making styles: (1) information gathering, (2) information processing, (3) locus of control, (4) effort invested in the process, (5) procrastination, (6) speed of making the final decision, (7) consulting with others, (8) dependence on others, (9) desire to please others, (10) aspiration for an ideal occupation, (11) willingness to compromise, and (12) using intuition (Gati et al., 2010; Gati & Asulin-Peretz, 2011; Gati & Levin, 2012). In 2012, an Italian version and, in 2014, a Chinese version were published. Both confirmed the multidimensionality of the CDMP (Ginevra et al., 2012; Tian et al., 2014). The subscales were previously shown to possess adequate internal consistencies with mean α values of .81 (.72 to .86), .71 (.60 to .80), and .81 (.70 to .92) in the Hebrew, the Italian, and the Chinese paper-and-pencil versions, respectively (Gati et al., 2010; Ginevra et al., 2012).

In order to test the CDMP's convergent validity, previous studies related it, for example, to personality (Gadassi et al., 2012), problem-solving (Ginevra et al., 2012), decision-making styles, and career decision-making difficulties (Gadassi et al., 2012; Gadassi, Gati, & Wagman-Rolnick, 2013; Gati et al., 2012; Tian et al., 2014; Willner, Gati, & Guan, 2015). Those studies showed, for example, that the CDMP subscales concerning information gathering behavior differentiated between undecided, partially decided, and decided 18- to 30-year-old individuals (Gadassi et al., 2012) and that these career-decision styles were related to general problem solving (Ginevra et al., 2012). Additionally, studies introduced the advantages of specific strategies in the form of an adaptability score regarding, for example, career decision-making difficulties (e.g., Gadassi et al., 2012; Gati & Levin, 2012). By contrast, relations with more current constructs within career literature (e.g., employability, career adaptability, marketability, or career resilience) have not been tested so far. For example, there is a lack of research on the adaptability of career decision-making strategies with an impact on career development.

As relations between the CDMP subscales and measures reflecting career development have not yet been tested, and as neither the CDMP's factor structure nor its convergent validity have been tested in a German sample, the present study is the first to validate a German version and to reveal its subscales relate to both situational and personality-related factors related to an individual's career.

Instrument Translation

The English version of the CDMP was translated into German by two senior researchers with high language skills familiar with the topic of career decision-making. The guideline for their translation was to maintain the equivalence of item meaning and structure. The translated German version was then translated back into English by a bilingual translator who did not know the original English version. The back translation was then compared to the original English CDMP by means of appropriateness of content, structure, and meaning. This evaluation was executed by 18 Industrial and Organizational (IO) psychologists, all of whom held master's degrees in psychology and additional further qualifications in either counseling or training. They used two rating scales for evaluation. The first scale related to content and the second to vocabulary and word order. The 18 psychologists were instructed to compare each CDMP item as follows: "In the following, please compare two English sentences with each other. Read through both sentences and indicate their similarity with regard to content" (content parallelism) and "...with regard to vocabulary,

terminology, and parts of sentences” (structural parallelism). Both content and structural parallelism were evaluated from 1 (*completely parallel*) to 7 (*not parallel at all*). If the mean value of all ratings was 3 or higher, the items should be improved (cf. Bates, Kauffeld, & Holton, 2007). Only 2 items were rated close to 3 regarding structural parallelism. However, as content parallelism was rated high, no revisions regarding forward- or back-translation were executed. All G-CDMP items were then sent to the corresponding author of the original English scale for approval.

Study 1: Factor Structure of the G-CDMP

The goal of Study 1 was to confirm the factor structure of the German CDMP. Since its first publication in 2010, the authors of the English CDMP expanded the initial 11-dimensional instrument by adding a 12th subscale, *using intuition*, comprising 3 items (Gati et al., 2012). This subscale measures the degree to which individuals rely on their intuition when making a career decision. Intuitive information processing, decision-making, and an intuitive cognitive style, respectively, were discussed early in the psychological literature (e.g., Tversky & Kahneman, 1983). In view of this, Study 1 is dedicated to confirming a 12-factor model in a German sample by means of CFAs of 36 items reflecting the 12 career decision-making styles.

Procedure

The G-CDMP was presented to a variety of professional (e.g., scientists), business (e.g., LinkedIn), private, and university student networks. Additionally, online networks for scientific scale developments and online communities for topics on coaching and counseling were contacted. Any participant group was separately invited to participate by disseminating the link of an online version of the G-CDMP by posting or e-mailing it.

Instruments

The online survey started with an introductory text explaining the overall topic and the research goal and ensuring confidentiality to all study participants. Following demographic questions (age, gender, educational degrees, and profession) and two questions regarding the current need for career-related decisions, the 36 G-CDMP items that had to be rated on a verbally anchored 7-point Likert-type scale ranging from 1 (*does not apply*) to 7 (*does fully apply*) were presented (items are printed in the appendix). According to the original version, the G-CDMP contained 1 warm-up item (“I am currently concerned about my future field of study or occupation”) and 2 validation items, ensuring that individuals responded thoroughly (“I try to choose the option that is best for me,” $M = 6.08 > 3$, and “It makes no difference to me what career I will have in the future,” $M = 2.53 < 5$; cf. Gati et al., 2010). On the individual level, only 8% of the subjects did not reach the respective cutoff value in 1 of the 2 validity items; hence, we did not delete any data from the sample.

By the time the data collection started, the authors worked on the base of the English CDMP version (cf. Gati et al., 2010; Ginevra et al., 2012), which does not include the subscale *using intuition*. However, the subscale was included during data collection, reaching almost half of the sample.

Sample

The study sample comprised a total of 300 participants ($n = 143$ for the subscale *using intuition*) with an average age of 28.0 years ($SD = 10.5$), ranging from 15 (one highly gifted student addressed within the university student networks) to 62 years. A total of 52.0% of the participants were male. Most of the participants were students (43.7%), 34.6% were employed with an average employment time of 14.5 years ($SD = 10.7$), 1.7% were employed part-time students, 2.4% were apprentices,

14.9% were pupils, and 2.7% were subsumed as *other*. Participants possessed secondary school exams corresponding to university entrance qualifications in 34.4% of all cases, 24.3% held master's or comparable degrees, 18.1% held bachelor's degrees, 15.8% did not have any degree at all, 6.5% held certificates of secondary education, and 0.8% held a doctorate degree. In all, 56.8% of the participants were currently engaged in making a major career decision, and in 37.0% of the cases, participants were faced with a private or occupational challenge with the potential to affect their careers, which illustrates both the commonness of career decisions over the life span and the adequacy of the recruited sample with regard to the relevance of career decision-making.

Analyses

CFAs were conducted using Mplus, Version 6.12 (Muthén & Muthén, 1998–2010) and a full information maximum likelihood estimator, hence all calculations in the CFAs are based on a sample size of $n = 300$. In order to confirm the G-CDMP's factor structure with 12 first-order factors, we compared two competing models: Model 1 is a one-factor model with all items loading on one single factor. Model 2 represents the theoretical model containing 12 interrelated first-order factors. Model fit was determined by means of the following fit indices: comparative fit index (CFI), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and ratio of χ^2 and df . As recommended, cutoff values for model fit indices were set to .90 for CFI (Hu & Bentler, 1999), .05 for RMSEA (Browne & Cudeck, 1993), and .08 for SRMR (Diamantopoulos & Siguaw, 2000), respectively. The ratio of χ^2 and df was to lie below 3 (Kline, 2011). Especially with complex models that have several factors and a large number of items, such as in the CDMP, it is recommended to use the less restrictive cutoff values (i.e., .90 instead of .95 for the CFI) in order to prevent falsely rejecting well-fitting models (Kline, 2011).

Results

The one-factor model (Model 1) yielded an unacceptable model fit, $\chi^2(594) = 4,244.00$, $\chi^2/df = 7.14$, $p < .001$, CFI = .25, RMSEA = .14, SRMR = .17, including some nonsignificant loadings and low loadings below .30. The proposed theoretical model showing 12 first-order factors (Model 2) had a close to adequate model fit, $\chi^2(528) = 1,158.10$, $\chi^2/df = 2.19$, $p < .001$, CFI = .87, RMSEA = .06, SRMR = .08, and was significantly better fitting than Model 1, $\Delta\chi^2(66) = 3,085.90$, $p < .001$. As the modification indices suggested accounting for some residual item correlations, we included these if they were theoretically sound in Model 2, resulting in the final model with adequate model fit indices, $\chi^2(509) = 900.86$, $\chi^2/df = 1.77$, $p < .001$, CFI = .92, RMSEA = .05, SRMR = .08. For instance, we allowed a residual correlation between the Items 1 and 3 on the *information gathering* factor. See Table 1 for standardized factor loadings, item means, and standard errors of the final model. Factor loadings ranged between .52 and .94, which is above the recommended value of .40 (Kline, 2011).

Additionally, Cronbach's α s were calculated for each of the 12 subscales of the G-CDMP, comprising 3 items each. Cronbach's α ranged from .69 to .90, with a median of .81 (cf. Table 2). In sum, these results indicate adequate psychometric properties of the subscales and, overall, attest to the G-CDMP being an adequate measure for assessing the individual career decision-making strategies within German samples.

Study 2: Construct Validity of the G-CDMP

Study 2 assesses the construct validity of the G-CDMP in terms of convergent validity on the subscale level. Since the original version of the CDMP shows good psychometric properties,

Table 1. Means, Standard Errors, and Factor Loadings of All Items Resulting From the Confirmatory Factor Analysis in Study 1.

CDMP dimension	Item No.	<i>M</i>	<i>SD</i>	Factor Loading
Information gathering	1	4.98	1.06	.51
	2	4.83	1.08	.64
	3	5.13	0.92	.82
Information processing	1	4.83	1.17	.61
	2	5.13	0.89	.76
	3	5.11	0.92	.76
Locus of control	1	4.06	1.20	.51
	2	4.51	1.12	.65
	3	5.42	1.06	.85
Effort invested in the process	1	4.79	1.04	.70
	2	4.10	1.02	.63
	3	4.71	1.04	.89
Procrastination	1	4.04	1.23	.82
	2	3.65	1.28	.93
	3	3.67	1.25	.84
Speed of making the final decision	1	3.09	1.17	.72
	2	3.59	1.18	.75
	3	3.92	1.25	.68
Consulting with others	1	4.68	1.22	.67
	2	4.62	1.30	.70
	3	4.70	1.14	.69
Dependence on others	1	1.88	0.98	.62
	2	2.39	0.97	.69
	3	2.61	1.06	.87
Desire to please others	1	2.94	1.16	.75
	2	2.71	1.09	.84
	3	3.31	1.15	.71
Aspiration for an ideal occupation	1	4.68	1.14	.81
	2	4.99	1.04	.91
	3	5.05	1.06	.85
Willingness to compromise	1	4.73	1.39	.78
	2	4.22	1.40	.79
	3	3.87	1.39	.80
Using intuition ^a	1	4.08	1.34	.82
	2	4.22	1.40	.79
	3	3.87	1.39	.72

Note. $n = 300$.

^aResults are based on a sample size of $n = 143$.

including test–retest reliability, but previous research on the CDMP only investigated the relations with measures closely related to the decision-making process (e.g., vocational decision style and career decision-making self-efficacy), we focused on the G-CDMPs convergent validity regarding constructs of an individual's career development (e.g., occupational self-efficacy or career adaptability). Thereby, we expand knowledge about relationships between career decision-making strategies and selected career-relevant attributes and behaviors.

Further, to add knowledge to the influence of personality on individuals' career decision-making strategies, we assumed that the G-CDMP subscales correlate specifically with personality traits, thereby considering all five personality dimensions and thus going beyond previous research (cf. Gadassi et al., 2012). In doing so, we shed light on the usefulness of the CDMP within counseling

Table 2. Means, Standard Deviations, Correlations, and Internal Consistencies of CDMP Subscales of Studies 1 and 2.

Measure	$M_{Study1/2}$	$SD_{Study1/2}$	$\alpha_{Study1/2}$	1	2	3	4	5	6	7	8	9	10	11	12
1 Information gathering	4.98, 5.21	1.16, 1.14	.69, .76		.73**	-.01	.67**	-.06	-.32**	.11	-.10	.04	.27**	.19**	-.05
2 Information processing	5.08, 5.31	1.18, 1.04	.73, .66	.71**		.06	.58**	-.12*	-.22**	.11	-.17**	-.07	.33**	.21*	.08
3 Locus of control	4.63, 4.78	1.39, 1.25	.80, .77	.02	-.01		-.13*	-.20**	.22**	-.02	-.34**	-.27**	.05	-.04	-.26**
4 Effort invested in the process	4.53, 4.74	1.24, 1.21	.78, .82	.63**	.57**	-.04		.03	-.47**	.09	-.01	.08	.22**	.07	.02
5 Procrastination	3.79, 3.60	1.66, 1.63	.90, .92	.03	.01	-.25**	.18**		-.57**	.15**	.35**	.16**	-.22**	-.02	-.04
6 Speed of making the final decision	3.52, 3.63	1.50, 1.59	.81, .87	-.33**	-.25**	.18**	-.53**	-.69**		-.29**	-.24**	-.14*	.19*	-.03	-.10
7 Consulting with others	4.67, 4.96	1.43, 1.38	.74, .80	.15**	.14*	-.04	.13*	.08	-.14*		.16**	.20**	-.01	.22**	-.18*
8 Dependence on others	2.28, 1.98	1.19, 1.04	.77, .77	.05	-.03	-.29**	.13*	.36**	-.38**	.22**		.54	-.11*	.06	-.03
9 Desire to please others	2.98, 2.79	1.41, 1.25	.81, .76	.10	.05	-.26**	.16**	.21**	-.28**	.26**	.49**		-.08	.04	-.09
10 Aspiration for an ideal occupation	4.90, 4.95	1.42, 1.40	.89, .91	.04	.08	.07	.14*	-.24**	.11	-.03	-.15**	-.13*		.11	.06
11 Willingness to compromise	5.18, 5.45	1.31, 1.20	.88, .78	.07	.15**	-.06	-.02	-.03	.05	.13*	-.02	.02	-.05		.08
12 Using intuition ^a	4.10, —	1.23, —	.84, —	—	—	—	—	—	—	—	—	—	—	—	—
13 CDA score	—, 4.87	—, .78	—, .61	.09	.08	.56**	-.18**	-.78**	.71**	-.17**	-.68**	-.59**	.22**	.03	—

Note. $N_{Study1} = 300$, $N_{Study2} = 322$. Two-tailed Pearson's correlations; correlation coefficients for Study 1 (Study 2) appear on the right (left) side of the diagonal; all measures on 7-point scale; α = Cronbach's α internal consistency coefficients. CDMP = Career Decision-Making Profile; CDA score = career decision-making adaptability.
^aResults are based on a sample size of $n = 143$; subscale was not included by the time of data collection of Study 2 yet.
 * $p < .05$. ** $p < .01$.

and coaching: Where personality determines how individuals handle career decisions, rarely will there be the opportunity to change clients' decision-making styles toward a more adaptive approach.

Hypotheses

We expect the CDMP subscales to correlate with factors generally related to career development and also with measures conceptually related to career decision-making strategies and reactions toward career decisions. Accordingly, we present two sets of hypotheses. The first set covers assumptions regarding relationships between career decision strategies and global measures, such as traits. The second set covers assumptions on relationships with career constructs, such as career adaptability. In order to reflect the multidimensional nature of career decision-making as demonstrated in the CFAs, we analyzed relationships with these constructs on the subscale level.

Relations with self-efficacy and personality. One of our major assumptions is that distinct career decision strategies are related to agentic self-evaluative beliefs (internal vs. external control beliefs; general vs. occupational self-efficacy) and personality factors (i.e., Big Five, proactive personality).

Control beliefs. First, we hypothesize that the CDMP subscale *locus of control* is positively related to other measures of internal control beliefs and to occupational self-efficacy but negatively related to measures of external control beliefs (social and fatalistic externality). Previous studies on the CDMP have already shown correlations between its subscales with career decision-making self-efficacy (except from *consulting with others*; cf. Gadassi et al., 2013). Yet, we assume that relationships with occupational self-efficacy are more relevant in clarifying the significant contribution of career decision-making strategies to careers and occupations because occupational self-efficacy reflects an individual's confidence in pursuing his or her career and in being successful in one's occupation (Abele, Stief, & Andrä, 2000), whereas career decision-making self-efficacy reflects an individual's belief of being able to successfully perform tasks related with career decisions (Betz, Klein, & Taylor, 1996, p. 48). Occupational self-efficacy thus provides a work-related efficacy measure, representing the work- and career-domain specific core self-evaluation of an individual. In investigating the relationships between occupational self-efficacy and career decision-making styles, we thus contribute to the prediction of work domain-specific outcome measures, which were previously demonstrated to significantly relate to occupational self-efficacy (e.g., perceived occupational chances, persistence in careers and work performance; Abele et al., 2000; Lent & Brown, 2013; Sadri & Robertson, 1993), rather than correlating two measures reflecting an individual's approach to career decisions.

We built our assumption on previous studies demonstrating a relation between general self-efficacy and occupational self-efficacy (Schyns & Collani, 2002) as well as career decision-making self-efficacy (Taylor & Popma, 1990) and locus of control measures, respectively (Judge & Bono, 2001).

Hypothesis 1: The G-CDMP subscale *locus of control* positively correlates with occupational self-efficacy (Hypothesis 1a) and negatively correlates with external control beliefs (Hypothesis 1b).

Proactivity. We assumed proactivity to be positively related to the amount of information gathered for the decision between career options (subscale *information gathering*) and for the *effort invested* into the career decision process. Theory has stated that individuals' general proactive state is predictive for proactive career behaviors covering self- and environment exploration activities. Likewise, proactive career behaviors significantly relate to the extent to which career exploration

is conducted (Hirschi, Lee, Porfeli, & Vondracek, 2013). We also assumed proactivity to be negatively related to *procrastination* concerning career decision-making. In doing so, we relied upon basic definitions: Whereas procrastination is defined as task avoidance, proactivity covers the persistence on a task even in the face of failure (Ferrari, Johnson, & McCown, 1995). That is, proactivity relates to a more adaptive and procrastination to a more maladaptive approach to career decisions.

Hypothesis 2: Proactivity positively correlates with the G-CDMP subscales *information gathering* and *effort invested* (Hypotheses 2a and 2b), and negatively correlates with *procrastination* (Hypothesis 2c).

Personality traits. We predicted associations between career decision-making strategies and the Big Five. We thus aimed to replicate some previous findings and additionally expand knowledge on the relationship between the CDMP subscales and personality. Previous findings (cf. Gadassi et al., 2012) have offered opportunities to expand knowledge due to four reasons. First, not all previous hypotheses on the relationship with personality could be supported, and second, not all CDMP subscales were tested with regard to its determination by personality, which makes hypotheses at the subscale level necessary (especially with regard to *aspiration for an ideal occupation*, *willingness to compromise*, *information gathering*, and *information processing*). As a third point, *desire to please others* and *dependence on others* were previously treated as equal with regard to their relationships with personality (cf. Gadassi et al., 2012; cf. Guan et al., 2015). In this line of argument, correlations with extraversion, neuroticism, and conscientiousness were postulated but could not be supported by research. Finally, there are no previous hypotheses on the decision-making strategy *speed of making the final decision* but only on *procrastination*, which may raise doubt about the difference between these two strategies. Consequentially, we opted for more specific hypotheses on the relation between career decision-making strategies and personality. In comparison to Gadassi, Gati, and Dayan (2012), we thus assumed additional relationships between *procrastination* and conscientiousness, a positive relationship between *willingness to compromise* and openness to new experiences, and negative relationships between both *speed of making the final decision* and *consulting with others* and neuroticism.

Our hypotheses regarding personality are thus as follows: We assume agreeableness to be positively related with the *desire to please others* and openness to new experiences to reflect a person's *willingness to compromise* (i.e., to opt for an alternative career path). Also, relying on the coping literature, we expect extraversion to positively correlate with the tendency to *consult with others*, which implies obtaining support by involving other people within the demanding situation of making a career decision (Latack & Havlovic, 1992). Likewise, emotional instability (neuroticism) is supposed to positively correlate with *consulting with others* and *dependence on others* (Gadassi et al., 2012), as dependence on others might be more likely for individuals searching for stabilization of their career decisions via external sources. Neuroticism was further hypothesized to correlate negatively with *locus of control* (cf. Judge & Bono, 2001, discussing core self-evaluations) and *speed of making the final decision* because a fast pace in making a career decision suggests that the deciding person is free from doubts, which represents one facet of the construct of emotional stability (Judge & Kammeyer-Mueller, 2011). Relying on previous studies, we also predict conscientiousness to be positively associated with the amount of information gathered, the accuracy by which information is processed, and the overall *effort invested* into the career decision process but negatively associated with procrastinating tendencies (Gadassi et al., 2012).

Hypothesis 3: With regard to personality, agreeableness positively correlates with *desire to please others* (Hypothesis 3a), openness to new experiences positively correlates with

willingness to compromise (Hypothesis 3b), extraversion positively correlates with *consulting with others* (Hypothesis 3c), and neuroticism positively correlates with *consulting with others* (Hypothesis 3d) as well as with *dependence on others* (Hypothesis 3e). Neuroticism is further assumed to negatively correlate with *locus of control* (Hypothesis 3f) and *speed of making the final decision* (Hypothesis 3g). Conscientiousness positively correlates with *information gathering* (Hypothesis 3h), *information processing* (Hypothesis 3i), and *effort invested* (Hypothesis 3j), and negatively correlates with *procrastination* (Hypothesis 3k).

Relations with career adaptability and reactions toward career-life decisions. We expected the CDMP subscales to relate to career adaptability and measures regarding the individual's cognitive reactions toward career decisions.

Career adaptability. According to Rottinghaus, Day, and Borgen (2005), career adaptability comprises three facets: the ability to adapt to new circumstances, career optimism, and knowledge of the job market. Gati et al. (2010) recommended testing the relationships between the CDMP subscales and career adaptability. Gati and Levin (2012) then pursued this by computing the career decision-making adaptability (CDA) score, which aims to reflect the adaptability of career decision-making strategies. They assumed six CDMP subscales to be more adaptive than others (*information gathering*, *locus of control*, *procrastination*, *speed of making the final decision*, *dependence on others*, and *desire to please others*) and others to be "obviously ineffective" (Gati & Levin, 2012, p. 392). This adaptability rating was derived from previous findings on correlations between the CDMP and career decision-making difficulties, personality, and individuals' career decision-making stage. For example, Guan et al. (2015) illustrated that the CDA scores consistently negatively relate to three clusters of career decision-making difficulties. Though there is some evidence on the adaptability of specific CDMP dimensions, the advantageousness of certain strategies has not yet been tested with regard to, for example, career decision-making quality or to specific effects on careers within different populations. Beyond subsuming strategies into a single adaptability score, we intended to test the relationship between CDMP subscales and adaptability as defined by Savickas (1997) and Rottinghaus et al. (2005), who referred to career adaptability as an individual's future-oriented ability to adapt to his or her career environment across their life span (Savickas, 1997). This construct has major relevance for career research because it is associated with, for example, coping with unpredictable adjustment challenges and marketability (Savickas, 1997; Spurk & Volmer, 2013), thus predicting a person's career success.

We assume career adaptability—the ability to adapt to new career challenges—to correlate positively with *willingness to compromise* because previous findings have demonstrated that a person's general agreeableness correlates with career adaptability (Rottinghaus, Day, & Borgen, 2005). Further, career optimism—a person's expectation of positive career experiences—is expected to correlate positively with the *aspiration for an ideal occupation*. Likewise, the third facet of career adaptability—knowledge of the job market—is expected to relate to one's exploratory career-decision behavior (i.e., to the *information gathering* and *information processing* subscales) because this is purposeful behavior that aims to gain access to information about occupations, jobs, or organizations (Stumpf, Colarelli, & Hartman, 1983).

Hypothesis 4: Career adaptability is positively correlated with *willingness to compromise* (Hypothesis 4a); career optimism is positively correlated with the *aspiration for an ideal occupation* (Hypothesis 4b); and knowledge of the job market is positively correlated with *information gathering* and *information processing* (Hypotheses 4c and 4d).

Satisfaction with life. With regard to reactions toward career decision-making, we assumed satisfaction with life to relate to distinct approaches to career decision-making. Based on the definition of

life satisfaction as a person's judgment or expectation to possess excellent life circumstances, which also covers a person's evaluation of his or her vocational circumstances (Pavot, Diener, & Suh, 1998; Trautwein, 2004), we supposed that satisfaction with life in the future positively relates to the *aspiration of an ideal occupation* and that satisfaction with life at the present negatively relates to the *effort invested* in the career decision-making process.

Hypothesis 5: As a reaction toward career decisions, satisfaction with life in the future positively correlates with the *aspiration of an ideal occupation* (Hypothesis 5a) and satisfaction with life at the present negatively correlates with *effort invested* (Hypothesis 5b).

Irritation. We applied *cognitive irritation* as a second measure for reactions toward career decision-making. Decision-making is a cognitively highly demanding task (Ernst & Paulus, 2005). In light of previous findings on ruminative engagement as a response to stressors (Scott & McIntosh, 1999) and cognitive processes as a response to demanding career decisions (Symes & Stewart, 1999), we assume that cognitive irritation is related to the CDMP subscales of *information gathering* and *effort invested in the process* (positively) and of *speed of making the final decision* (negatively).

Hypothesis 6: As a potential reaction toward career decision strategies, cognitive irritation positively correlates with *information gathering* (Hypothesis 6a) and *effort invested* in the process (Hypothesis 6b) and negatively correlates with *speed of making the final decision* (Hypothesis 6c).

Hypotheses covering the G-CDMP subscale on intuitive career decision-making are not covered in the hypothesis section. By the time the data of Study 2 was collected, the authors' work was based on a previous version of the English CDMP, which lacked this subscale (cf. Gati et al., 2010; Ginevra et al., 2012). For the sake of completeness, Table 3 comprises correlations between intuitive career decision-making and a subset of the validation scales that were also applied in Study 1.

Method

Procedure

Participants of Study 2 were recruited via social (e.g., Facebook), professional (e.g., LinkedIn), and private networks by means of personal e-mail invitations or online posts on the relevant websites, communities, and networks. Additionally, PhD students from grad school were approached via their e-mailing list, and a high school student sample was generated by visiting a local high school. Study participants were motivated to finish the online survey by being offered to participate in a bookstore gift coupon raffle, except for psychology students, who were instead offered one European Credit Transfer System (ECTS) point for participation. The total completion time of the survey was tested prior to data collection (about 30 min) and mentioned in the introductory text of the online survey to avoid middle dropouts. Participants who stopped filling in the survey prior to completing the full German CDMP were excluded from the data analyses.

Sample

The study sample comprised a total of 322 participants with an average age of 30.1 years ($SD = 9.7$), ranging from 13 to 61 years. In all, 32.7% of the participants were male. Most of the participants were employed (46.6%), with an average employment time of 10.9 years ($SD = 10.1$), 42.6% were university students, 4.3% were simultaneously employed and part-time students, 1.6% were pupils,

Table 3. Correlations of CDMP Subscales With Validation Scales of Study 2.

Measure	IG	IP	LC	EI	PR	SP	CO	DO	DP	AI	WC	IN ^a	CDA Score
Occupational self-efficacy	.01	.06	.20**	-.08	-.43**	.41**	-.03	-.33**	-.27**	.37**	.06	^a	.49**
Social externality	.01	.01	-.33**	.03	.32**	-.31**	.04	.42**	.33**	-.24**	.06	^a	-.49**
Fatalistic externality	-.06	-.12*	-.56**	.01	.29**	-.25**	-.10	.27**	.16**	-.17**	-.02	^a	-.46**
Proactive personality	.24**	.21**	.04	.13*	-.32**	.21**	-.06	-.17**	-.09	.32**	-.07	^a	.32**
Satisfaction with life (present)	-.01	.03	.10	-.11*	-.14*	.17**	.05	-.18**	-.10	.19**	.15**	.06 ^a	.20**
Satisfaction with life (future)	-.05	.05	.09	-.07	-.30**	.25**	.01	-.33**	-.14*	.41**	.08	^a	.31**
Career adaptability	-.03	-.02	.03	-.10	-.29**	.29**	-.13*	-.38**	-.20**	.18**	.24**	.16 ^a	.34**
Career optimism	-.01	.08	.09	.04	-.38**	.27**	-.01	-.22**	-.11	.51**	.03	.13 ^a	.33**
Knowledge of job market	.01	.01	-.04	-.02	-.22**	.23**	-.10	-.16**	-.09	.20**	-.02	-.03 ^a	.21**
Extraversion	-.05	-.02	.03	-.10	-.28**	.28**	.13*	-.13*	-.04	.22**	.06	^a	.23**
Agreeableness	-.10	-.10	.08	-.11	-.01	.09	.09	-.10	-.13*	.01	.04	^a	.09
Conscientiousness	.31**	.18**	.22**	.21**	-.35**	.18**	.07	-.16**	-.16**	.14*	-.03	^a	.39**
Neuroticism	.24**	.14*	-.14*	.28**	.40**	-.52**	.14*	.31**	.25**	-.23**	-.10	^a	-.44**
Openness	.01	.02	-.08	.06	-.03	.01	.01	-.11*	-.04	.13*	.14*	^a	.03
Cognitive irritation	.21**	.16**	-.08	.24**	.22**	-.39**	.12*	.22**	.23**	-.15**	-.01	^a	-.29**

Note. $n = 322$. Two-tailed Pearson's correlations. Significant correlations consistent with hypotheses are printed in bold. IG = information gathering, IP = information processing, LC = locus of control, EI = effort invested in the process; PR = procrastination, SP = speed of making the final decision; CO = consulting with others; DO = dependence on others; DP = desire to please others; AI = aspiration for an ideal occupation; WC = willingness to compromise; IN = using intuition; CDA score = career decision-making adaptability score; CDMP = Career Decision-Making Profile.

^aCorrelation coefficients are based on Study 1 sample, $n = 143$.

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

and 4.9% were subsumed as *other*. Participants possessed secondary school exams corresponding to university entrance qualification in 30.6% of cases, 43.0% held master's or comparable degrees, 17.2% held bachelor's degrees, 0.3% did not have any higher degree at all, 2.2% held certificates of secondary education, and 6.7% held a doctoral degree. All said, 66.7% of the study participants were engaged in making a career decision by the time the data collection took place, and in 40.1% of the cases, participants were faced with a private or occupational challenge potentially affecting their careers.

Instruments

In the following, the study measures are presented in the order of the hypotheses, which were categorized into two cluster (i.e., self-evaluations and career-related constructs).

G-CDMP Questionnaire. The G-CDMP consists of 36 items on a 7-point Likert-type scale ranging from 1 (*does not apply*) to 7 (*does fully apply*) and of 2 validation items (original English and German items can be found in the Appendix). Internal consistencies (Cronbach's α) of all subscales were satisfactory to high, with values ranging between .66 and .92. (cf. Table 2). On the individual level, 5% of the subjects did not reach the respective cutoff value in 1 of the 2 validity items but answered without random or straight-lining pattern on all instruments. Hence, we did not delete any data from the sample. By the time of data collection, the authors worked on the basis of a previous version of the English CDMP lacking the subscale of *using intuition*, and therefore, Cronbach's α for this subscale is not reported.

Occupational self-efficacy. Occupational self-efficacy was measured using a validated and widely used German scale (e.g., Abele & Spurk, 2009; Cohrs, Abele, & Dette, 2006; Schulz & Roßnagel, 2010), assessing an individual's general occupational self-efficacy. Within the Occupational Self-Efficacy Scale (Abele et al., 2000), six items were responded to on a 5-point Likert-type scale covering motivational aspects of self-efficacy as well as skill-related self-efficacy beliefs. A sample item is "I am confident that I could deal efficiently with the challenges of my occupation if I only wanted to." Cronbach's α of that measure was .83 (see Table 4 for Cronbach's α of validation scales).

General self-efficacy. General self-efficacy was measured using the German version of Levenson's Internality, Powerful Others, and Chance Scales (IPC) Scale (1981)—the Fragebogen zu Kompetenz- und Kontrollüberzeugungen (FKK) (Krampen, 1991). The FKK differentiates between internal and external control beliefs with two subscales for each control perspective, thus defining self-efficacy as a multidimensional construct. The multidimensional instrument is widely used in, for example, clinical psychology, personality psychology, or IO psychology (Greve, Anderson, & Krampen, 2001; Schmidt, Grunert, Schimmelmann, Schultze-Lutter, & Michel, 2014). A sample item is "When I make plans, I am almost certain to make them work." We used two of the instrument's four subscales, namely, Fatalistic Externality and Social Externality, which represent a person's causal attribution of life events to either chance or to other persons. These subscales each comprise 8 items, which were responded to on a 5-point Likert-type scale. Cronbach's α s were .75 and .83.

Proactivity. To measure proactivity, we used a German version of Bateman and Crant's Proactive Personality Scale (Bateman & Crant, 1993) in the shortened 10-item version validated by Seibert, Crant, and Kraimer (1999). A sample item is "I am always looking for better ways to do things." (item derived from Seibert, Kraimer, & Crant, 2001). The unidimensional construct reflects a person's tendency to improve life circumstances by anticipating problems and tackling challenges

Table 4. Means, Standard Deviations, Correlations, and Internal Consistencies of Validation Scales of Study 2.

Measure	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Occupational self-efficacy ^a	3.93	0.73	(.83)														
2 Social externality ^a	3.04	0.66	-.39**	(.83)													
3 Fatalistic externality ^a	2.72	0.73	-.40**	.60**	(.75)												
4 Proactive personality ^b	4.71	0.91	.43**	-.19**	-.01	(.87)											
5 Satisfaction with life (present) ^d	3.02	0.65	.39**	-.17**	-.26**	.08	(.87)										
6 Satisfaction with life (future) ^d	3.26	0.52	.50**	-.26**	-.26**	.36**	.36**	(.86)									
7 Career adaptability ^b	4.48	0.89	.36**	-.22**	-.09	.36**	.20**	.41**	(.80)								
8 Career optimism ^b	4.63	1.07	.58**	-.24**	-.25**	.45**	.36**	.48**	.35**	(.90)							
9 Knowledge of job market ^b	3.23	1.09	.28**	-.16**	-.09	.48**	.14*	.21**	.30**	.26**	(.80)						
10 Extraversion ^a	3.56	0.92	.38**	-.21**	-.12*	.41**	.22**	.30**	.28**	.41**	.19**	(.86)					
11 Agreeableness ^a	3.14	0.77	.09	-.08	-.12*	-.01	.08	.10	.12*	.08	-.02	.17**	(.67)				
12 Conscientiousness ^a	3.86	0.61	.35**	-.22**	-.28**	.34**	.16**	.16**	.12*	.30**	.20**	.17**	.07	(.62)			
13 Neuroticism ^a	2.9	0.89	-.50**	.32**	.26**	-.29**	-.34**	-.36**	-.48**	-.39**	-.30**	-.33**	-.22**	-.13*	(.77)		
14 Openness ^a	3.93	0.71	.03	-.05	.07	.17**	-.06	-.01	.11	.14*	.19**	.22**	.06	-.11*	-.01	(.75)	
15 Cognitive irritation ^c	3.56	1.22	-.26**	.27**	.14*	.01	-.17**	-.19**	-.26**	-.16**	-.22**	-.16**	-.10	.03	.47**	-.07	(.85)

Note. Validation scales; $n = 322$. Two-tailed Pearson's correlations. Internal consistency reliability coefficients (Cronbach's α) appear on the diagonal;

^aMeasures on a 5-point scale. ^bMeasures on a 6-point scale. ^cMeasures on a 7-point scale. ^dMeasures on a 4-point scale.

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

(Parker, Bindl, & Strauss, 2010). The instrument's items are responded to on a 7-point Likert-type scale. Cronbach's α reached .87.

Big Five. We used the validated German Big Five short version Kurzversion des Big Five Inventory (BFI-K) to assess the Big Five personality factors (Rammstedt & John, 2005). The BFI-K is known as a valid and economic instrument for measuring the five personality factors of extraversion, openness, conscientiousness, neuroticism, and agreeableness in a psychometrically sound manner (cf. Rammstedt, 2007; Rammstedt & John, 2005; Rammstedt, Koch, Borg, & Reitz, 2004). Its 21 items have to be rated on a 5-point Likert-type scale and represent the five subscales, with satisfactory internal consistencies in terms of Cronbach's α ranging between .67 and .86.

Career adaptability. Career adaptability reflects a person's career readiness and positive career planning activities (Rottinghaus et al., 2005). The German version of Rottinghaus et al.'s Career Futures Inventory (CFI; Spurk & Volmer, 2013) measures career adaptability in a psychometrically sound manner (e.g., Spurk, Kauffeld, Barthauer, & Heinemann, 2015; Spurk, Kauffeld, Meinecke, & Ebner, 2015). We used the German CFI comprising 11 items to assess participants' skills to cope with future career challenges (subscale *career adaptability*), their expectation to experience positive career development (subscale *career optimism*), and their perception of possessing well-grounded knowledge about the job market (subscale *knowledge of job market*). Items of the German CFI are responded to on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). A sample item is "I am good at adapting to new work settings." Cronbach's α ranged between .80 and .90.

Satisfaction with life. Satisfaction with life is defined as a person's cognitive judgement concerning his or her life circumstances. Satisfaction with life was measured with the German version of Pavot et al.'s Temporal Satisfaction with Life Scale (Pavot et al., 1998; German Version: Fragebogen zur temporalen Lebenszufriedenheit (FTL), Trautwein, 2004), which is one of the most dominantly used scales to depict well-being (Linley, Maltby, Wood, Osborne, & Hurling, 2009). The measure's subscales cover satisfaction with life in the past, at the present, and in the future. We used the two subscales referring to the present and the future, each comprising 4 items, which were responded to on a 4-point Likert-type scale. A sample item is "My current life is ideal for me." Cronbach's α s were .87 (present satisfaction) and .86 (future satisfaction).

Irritation. Irritation—a construct reflecting reactions to occupation-related psychological demands—comprises both ruminative (cognitive) and affective reactions to occupational demands (Mohr, Rigotti, & Müller, 2005). We used the subscale *cognitive irritation* of Mohr et al.'s instrument, consisting of 3 items measured on a 7-point Likert-type scale. An example item is "I get angry easily" (translation by the authors). Cronbach's α was .85.

Results

Pearson correlation coefficients were calculated to assess the convergent validity of the G-CDMP subscales using SPSS, Version 22. The means, standard deviations, intercorrelations, and internal consistency values of the G-CDMP of Study 2 are presented in Table 2, and those of the validity scales are presented in Table 4. Results show that the two CDMP validation items, on average, have values as expected ($M = 6.17 > 3$ and $M = 2.31 < 5$). On the individual level, only 5% of the subjects did not reach the respective cutoff value in 1 of the 2 validity items. Hence, we did not delete any data from the sample. However, the results remain equal in a reduced data set. Correlations between the G-CDMP Scales and all scales for convergent validity are presented in Table 3.

Control Beliefs

In line with our expectations, there is a significant positive relationship of the CDMP subscale *locus of control* with occupational self-efficacy ($r = .20, p < .001$) and a negative relationship with external control beliefs, that is, social externality ($r = -.33, p < .001$) and fatalistic externality ($r = -.56, p < .001$). Thus, Hypotheses 1a and 1b were supported.

Proactivity. Proactive personality is positively related to *information gathering* ($r = .24, p < .001$) and *effort invested* in the decision process ($r = .13, p = .020$) and negatively associated with *procrastination* ($r = -.32, p < .001$). This confirms Hypotheses 2a–c.

Personality. In terms of personality traits, we observed a negative correlation coefficient of agreeableness and *desire to please others* ($r = -.13, p = .024$), which is not consistent with our expectation of a positive relationship. Thus, Hypothesis 3a was not confirmed. Openness is significantly and positively related to *willingness to compromise* ($r = .14, p = .013$), whereas extraversion is positively associated with *consultation of others* ($r = .13, p = .024$). This confirmed hypotheses 3b and 3c. There are positive relationships of neuroticism with *consultation of others* ($r = .14, p = .016$) and with *dependence on others* ($r = .31, p < .001$) and negative relationships of neuroticism with *locus of control* ($r = -.14, p = .012$) and with *speed of making the final decision* ($r = -.52, p < .001$). Thus, we could confirm Hypotheses 3d–g. For conscientiousness, we observed positive correlations with *information gathering* ($r = .31, p < .001$) and *information processing* ($r = .18, p = .001$), and *effort invested* ($r = .21, p < .001$) and a negative relation to *procrastination* ($r = -.35, p < .001$). Thus, we confirm Hypotheses 3h–k.

Career adaptability. For the sake of completeness, Table 3 presents the relations of the study measures with the CDA score. Regarding the facets of Rottinghaus et al.'s (2005) CFI, we find positive relationships of career adaptability with *willingness to compromise* ($r = .24, p < .001$) and of career optimism with *aspiration for an ideal occupation* ($r = .51, p < .001$), which is in line with Hypotheses 4a and 4b. Knowledge of the job market was not correlated to either *information gathering* ($r = .00, p = .961$) or *information processing* ($r = .01, p = .872$). This refuted Hypotheses 4c and 4d.

Satisfaction with life. Finally, satisfaction with life at the present is positively associated with *aspiration for an ideal occupation* ($r = .19, p < .001$) and negatively associated with *effort invested* in the process, according to the hypothesis ($r = -.11, p = .045$). Likewise, the relationship between an anticipated future satisfaction with life with *aspiration for an ideal occupation* is positive ($r = .41, p < .001$). Thus, Hypotheses 5a and 5b are supported.

Irritation. Cognitive irritation is positively related to *information gathering* ($r = .21, p < .001$) and to *effort invested* ($r = .24, p < .001$) and negatively related to *speed of making the final decision* ($r = -.39, p < .001$). Hypotheses 6a–c are supported.

General Discussion

The goal of the present studies was to validate the G-CDMP regarding factor structure and construct validity. Results of a CFA in an age, education, and employment-status heterogeneous sample of 300 individuals confirm the proposed 12-factor structure as suggested in previous studies with other language versions, thus reinforcing the assumption that career decision-making is reflected in different strategies rather than being unidimensional. We demonstrated that the G-CDMP is an adequate instrument to measure these strategies: The factors which

represent the G-CDMP subscales were characterized by adequate factor loadings and satisfactory to high internal consistencies (Study 1).

Regarding construct validity, we expand previous research on the CDMP's convergent validity, which covers relations with personality, other career decision-making scales (e.g., Gati et al., 2012), or general problem-solving (Ginevra et al., 2012; Willner et al., 2015) by correlating the G-CDMP subscales with self-evaluations, for example, occupational self-efficacy and career-related constructs (e.g., career adaptability and reactions toward career-life decisions). Confirming most of the hypotheses, we showed that the G-CDMP subscales possess adequate convergent validity (Study 2).

With regard to the strength of correlations, the results reflect previous findings. For example, the correlation between *locus of control* and occupational self-efficacy ($r = .20$) corresponds to the strength of the relationship with career decision-making self-efficacy as reported by Gadassi, Gati, and Wagman-Rolnick (2013; $r = .19$), and the correlation between *consultation of others* and extraversion ($r = .13$) corresponds to what Gadassi and colleagues reported within an Israeli sample (2012; $r = .16$). Further, the mean correlation between career decision-making styles and personality factors in the present study (.14) is comparable to the extent of correlations with the other validation constructs (mean correlation: .16). This indicates that personality factors relate to career-decision behaviors of individuals comparable to, for example, measures of career adaptability. We therefore contradict previous conclusions stating that personality plays a minor role in the career decision-making process (Gadassi et al., 2012), which is in line with common knowledge on the interplay between personality and career decision-making (e.g., Shafer, 2000; Tokar, Fischer, & Subich, 1998, for an overview).

As a major concern in the analysis of convergent validity, we correlated the G-CDMP subscales with measures of career adaptability. An individual's career adaptability holds pertinent advantages for career development and career success (Spurk et al., 2015; Zacher, 2014). We found correlations between career adaptability, career optimism, and knowledge of the job market with subscales of the German CDMP. More concretely, a procrastinating career decision style, *dependence on others*, *desire to please others*, and *consulting with others* were found to correlate negatively with adaptability. These subscales are therefore seen as less beneficial for an individual's career adaptability. With regard to career counseling and coaching, an individual with an intense use of these four decision strategies might profit from interventions facilitating more independent career decisions. By contrast, *willingness to compromise*, *aspiration for an ideal occupation*, and *speed of making the final decision* were found to correlate positively with career adaptability. These career decision styles might thus reflect that a person possesses high adaptability to new vocational circumstances. Conversely, we could observe some nonassumed but interpretable correlations between the G-CDMP subscales *speed of making the final decision* and *procrastination* with the adaptability facet *knowledge of the job market*. These results are consistent with previous findings on the relation between the reasons for an individual's career decision-making difficulties (i.e., lack of information) and his or her speed in deciding upon career options (Willner et al., 2015): They suggest that an individual's knowledge of the job market facilitates career decision-making in terms of readiness and has corresponding implications for career counseling.

According to our hypotheses, we can also discuss adaptive career decision styles with regard to reactions toward career-life decisions. The career decision-making strategy *aspiration for an ideal occupation* was found to correlate positively with life satisfaction. The extent to which an individual pursues finding a well-fitting occupation seems to represent the individual's overall positive judgment of his or her future life and career circumstances. This is in line with previous findings on the relation between a sense of power within the career design process and life satisfaction (Hirschi, 2009). In turn, *effort invested* was negatively related to satisfaction with life, and cognitive irritation was found positively to relate to *information gathering* and *effort invested*. This indicates that an overall high effort and a highly thorough investment in the career decision-making process is among

maladaptive strategies for short-term well-being. A high *speed of making the final decision*, in turn, would reflect a rather nondemanding attitude toward a career decision.

Three of our hypotheses could not be confirmed. For example, the assumed positive relationship between agreeableness and *dependence on others* could not be found. We conclude that agreeableness is not an appropriate account of the convergent validity of any of the G-CDMP subscales. This is in line with previous findings that represent a rather unclear picture of the role of agreeableness in approaching career decisions (cf. Gadassi et al., 2012).

A number of significant correlations that we did not expect further add to the knowledge of the relation between career decision-making styles and career-related measures. For example, *dependence on others* and *desire to please others* when making a career decision were negatively related to anticipated future life satisfaction. Further, we found proactivity to positively correlate with *information gathering*, *information processing*, *effort invested*, *speed of making the final decision*, *aspiration for an ideal occupation*, and the CDA score. In light of these findings, we assume proactivity as a powerful construct in explaining career decision-making behavior. Proactivity adds to the understanding how individuals select career decision-making strategies on trait level beyond the Big Five.

Summing up, Study 2 offers data out of a highly heterogeneous German sample, which makes it possible to expand research on the CDMP with regard to cross-cultural issues, such as the dominance of specific strategies according to subjective cultural norms (cf. Guan et al., 2015). Notably, the study is the first to cover relationships between career decision-making styles and an individual's competence in adapting to vocational and career-related changes and the job market.

Limitations and Future Directions

There are a number of limitations and implications for future research. First, Study 2 relied on cross-sectional data. Although convergent and discriminant validity issues are widely discussed in terms of cross-sectional correlations (Campbell & Fiske, 1959), the scope of causal interpretations derived from such correlations is limited. Future research should validate the findings on the relations between career decision-making strategies and career-relevant traits and behaviors within longitudinal data in order to determine whether career decision strategies are predictive for or a consequence of these constructs. Further, the common method variance is limiting the results. This common problem of psychological research using self-report measures should prospectively be considered by relating the G-CDMP subscales with objective measures of career success like supervisor's rated marketability of an individual (cf. Campbell & Fiske, 1959; Brutus, Gill, & Duniewicz, 2010).

Second, some internal consistencies reported in the studies were lower for the G-CDMP subscales than for those in other language versions. This might have been caused by changes in the wording of items in the English version, which took place between the first publication of the CDMP in 2010 (Gati et al., 2010) and its further investigation in 2012 (Gadassi et al., 2012; Gati et al., 2012). These changes were made to formulate items that are more comprehensible but were not published in scholarly journals. The herein presented translation into German relied on the original English version. Future studies applying the G-CDMP should contribute to an evaluation of the subscales' internal consistencies.

The third limitation is also related to changes in the CDMP since its first publication. A 12th subscale, the subscale of *using intuition*, was introduced in 2012 (Gati et al., 2012). As our Study 2 relied on the English item list published in 2010 with this subscale lacking, no convergent validity measures for an intuitive career decision-making style could be generated.

Although limitations exist, the presented study offers potential for generalizing its results due to one of its strengths: In contrast to the majority of previous studies, which are limited in their generalizability due to samples predominantly consisting of young adults, the present study obtained

its results from a more representative sample. The sample was highly heterogeneous regarding age and employment status, with some emphasis on highly educated individuals. With regard to the sample's above average education level, we see that this sample is especially appropriate for studying career decisions. It is supposed to have ample experience in making career decisions due to career transitions that are usual to advance on the career ladder. We could show that most participants faced a private or occupational challenge affecting their career by the time the data were collected. This reflects the appropriateness of the studied samples with regard to the relevance of career decision-making.

Nonetheless, future research has to clarify three important issues: first, although the 12 career decision-making strategies measured by the Hebrew CDMP were shown to be rather stable (Gati & Levin, 2012), the situation in German-speaking countries is a matter of discussion. Future research has to show if career decision-making strategies count as relatively stable habits or if they are subject to change. Longitudinal data going beyond a weekly time interval are needed to show this.

Also, intercultural issues should be addressed (Blustein & Ellis, 2000; Willner et al., 2015). For example, in the current study, *dependence on others*, *desire to please others*, and *consulting with others* were related negatively to occupational self-efficacy, career adaptability, life satisfaction, and proactivity, thus indicating that those career-decision strategies are not adaptive. By contrast, *speed of making the final decision* and *aspiration for an ideal occupation* showed consistently positive correlations with constructs related to career development, thus indicating those strategies are highly adaptive. These findings confirm previous records about the specific usefulness of career decision-making strategies as expressed within the CDA score (Gati & Levin, 2012) and, more importantly, expand these records with regard to *consulting with others* and *aspiration for an ideal occupation*. But recurring on the assumption that "simultaneously engaging in multiple career decision-making strategies is effective" (Singh & Greenhaus, 2004, p. 216), these relationships should be contrasted with correlations in another language version (e.g., in the Asian context; cf. Guan et al., 2015; Willner et al., 2015) in order to conclude about the intercultural meaning of specific strategies.

Likewise, the adaptability matter should be considered with regard to different career stages. In the German sample, 37.0% of the participants were faced with an occupational challenge or a private challenge with the potential to affect their careers. The prevalence of such challenges could correlate with an individual's career stage: Early career stages might comprise more frequent challenges compared to career stages of older or more experienced individuals (cf. Super, 1980). Gati and Asulin-Peretz (2011) assumed, for example, that especially young adults in early career stages need to talk to significant others more frequently when deciding upon career issues. Further studies must show if the current findings on the adaptability of career-decision strategies hold true across different career stages.

Practical Implications for Coaching and Counseling

According to a recent market study, coaching is a highly popular Human Resources (HR) method in Germany that will continue to rise in importance and frequency of use in organizations (Stephan & Gross, 2011). Generally, more counseling and coaching services will be offered in the future, and coaches will increasingly apply psychometric measures during their services (Ebner & Kauffeld, 2017; Gessnitzer, Schulte, & Kauffeld, 2014). In contrast to the demand, the development and application of sound psychometric measures tailored to support counseling services for clients occupied with career decisions are lagging (Ebner & Kauffeld, 2017; Gessnitzer et al., 2014). The G-CDMP, by contrast, can be used during career coaching as a measure with psychometrically validated properties.

Counselors and career coaches use psychometric tools to improve their understanding of clients' concerns and to align treatment modalities to their clients' constitution. The G-CDMP allows for a better understanding of how clients approach career decisions, indicating their strongly pronounced

career decision-making strategies (Gati et al., 2012). As this knowledge supports tailoring a counseling process according to the individual's needs (e.g., Gadassi et al., 2012; Phillips & Jome, 2005; Tinsley, Tinsley, & Rushing, 2002), the G-CDMP is recommended for prescreening. Given that the individual might simultaneously apply different career decision-making strategies equally intensely (e.g., the individual gathers much information in a highly thorough but at the same time postpones the career decision), and in view of the finding that some strategies are more adaptive than others, our results allow for the recommendation of which strategy should be encouraged more strongly by counselors and coaches. For example, in order to affect clients' positive occupational self-efficacy and internal locus of control, counselors should encourage clients to reduce the involvement of other persons during the decision-making process. Likewise, working on clients' willingness to compromise (i.e., opting for an alternative if the primarily preferred education or career path is not available) might contribute to clients' satisfaction with their lives in the future.

Future research on the application of the G-CDMP during counseling will offer insight into its benefits and on ways to best fit it into counseling interventions. Ideally, it will provide knowledge on the implications for the use with special target groups, such as young adults with high career indecisiveness.

Appendix

Table A1. Items of the German Career Decision-Making Profile.

No.	Item Wording (German Version/Original English Version)
1	Derzeit mache ich mir Gedanken über mein zukünftiges Studienfach oder meine zukünftige berufliche Tätigkeit/I am concerned about choosing a major or an occupation (Warm-up item)
2	Normalerweise trage ich Informationen sorgfältig zusammen/I am usually thorough in gathering information and do not merely make do with whatever is easily accessible
3	Nachdem ich alle notwendigen Informationen über verschiedene berufliche Alternativen gesammelt habe, analysiere ich sie/After collecting the necessary information about the various alternatives, I analyze the characteristics of each one
4	Ich bin nicht allein für die Folgen meiner Entscheidung verantwortlich: Schicksal und Glück beeinflussen meine zukünftige Laufbahn sehr/I am not solely responsible for the results of my decisions; fate and luck will affect my future career*
5	Ich investiere viel Anstrengung in den Entscheidungsprozess/I invest a lot of effort in the decision-making process
6	Ich neige dazu, meine Karriereentscheidung aufzuschieben/I tend to postpone my career decision
7	Sogar nachdem ich alle notwendigen Informationen habe, brauche ich eine Weile, um eine Entscheidung zu treffen/Even after I have all of the necessary information, I need a long time to make a decision*
8	Für gewöhnlich prüfe ich meine beruflichen Alternativen und treffe meine Entscheidung, ohne Andere um Rat zu fragen/I usually consider my choices and make my decisions without consulting others*
9	Bei wichtigen Entscheidungen wie der Berufswahl, will ich, dass jemand anderes für mich entscheidet/For difficult decisions, such as career decisions, it would make it easier if someone else made the decision for me
10	Es ist mir wichtig, die berufliche Option zu wählen, die meine Familie und enge Freunde zufriedenstellt/I consider it important to choose the option that will satisfy my family and close friends
11	Ich glaube, dass ich eine perfekte berufliche Tätigkeit finden kann, die all meinen Wünschen entspricht/I believe that I can find a perfect occupation that will satisfy all my desires and expectations
12	Falls ich einen Studiengang in meinem gewählten Fachgebiet nicht aufnehmen kann, werde ich einen Kompromiss eingehen und nach einem anderen suchen, der richtig für mich ist/If I am not accepted for my first-choice major or training program, I will compromise and opt for my second choice
13	Wenn ich eine Entscheidung treffe, verlasse ich mich hauptsächlich auf meine Intuition/When I make a decision, I rely mainly on my intuition

(continued)

Table A1. (continued)

No.	Item Wording (German Version/Original English Version)
14	Ich versuche die Option zu wählen, die die beste für mich ist/I try to choose the option that is best for me (validity item)
15	Ich habe das Gefühl, dass ich alle existierenden Alternativen sorgfältig prüfen muss, bevor ich eine Entscheidung treffe/I prefer to make decisions after having thoroughly examined all possible alternatives
16	Ich entscheide mich für gewöhnlich, nachdem ich die Besonderheiten der beruflichen Alternativen miteinander verglichen habe/I usually make my decisions after comparing several characteristics of the alternatives
17	Faktoren außerhalb meiner Kontrolle (wie Schicksal) beeinflussen meine Berufswahl und ihre Folgen sehr/ Factors outside of my control (like fate) will greatly influence my career choice and its outcomes*
18	Ich vertiefe mich ganz in den Entscheidungsprozess/I immerse myself entirely in the decision-making process
19	Ich tendiere dazu, meine berufliche Entscheidungsfindung aufzuschieben/I tend to put off my career decision-making
20	Sogar nachdem ich die relevanten Informationen gesammelt habe, brauche ich viel Zeit, um meine endgültige Entscheidung zu treffen/Even after I have collected the relevant information, it takes me a lot of time to make my final decision*
21	Um die richtige Entscheidung zu treffen, muss ich mich nicht mit Anderen beraten/I do not need to consult with others to make the right decision*
22	Ich will die Entscheidung nicht alleine treffen; ich will, dass andere die Verantwortung für die Entscheidung mittragen/I do not want to make the decision alone; I want to share the responsibility with others
23	Letztendlich werde ich eine der Optionen wählen, die den Menschen gefällt, die mir am nächsten stehen/I will eventually choose one of the options that will please the people closest to me
24	Ich glaube, dass ich die berufliche Tätigkeit finden kann, die all meinen Vorlieben entspricht/I am striving to find the occupation that will satisfy all my preferences
25	Falls ich eine berufliche Alternative erster Wahl nicht realisieren kann, werde ich bereit sein, einen Kompromiss einzugehen/If I can't realize my first choice, I will be willing to compromise
26	Wenn ich eine Wahl treffen muss, tendiere ich dazu, meinen Instinkten zu folgen/When I need to make a choice, I tend to trust my instincts
27	Es macht für mich keinen Unterschied, welche Laufbahn ich in der Zukunft verfolgen werde/It makes no difference to me what career I will have in the future (validity item)
28	Ich versuche für gewöhnlich, alle verfügbaren Informationen über die in Betracht kommenden beruflichen Tätigkeiten zu sammeln/I try to collect all the available information about the occupations I am considering
29	Für gewöhnlich vergleiche ich berufliche Alternativen in Bezug auf deren Vor- und Nachteile/I usually compare the alternatives by considering their advantages and disadvantages
30	Es ist nicht wirklich von Bedeutung, was ich wähle: das Schicksal wird letztlich meine zukünftige Laufbahn sowieso beeinflussen/It really doesn't matter what I choose; destiny will influence my future career anyway*
31	Wenn ich eine Entscheidung treffen muss, investiere ich viel Zeit und Anstrengung/When I need to make a decision, I invest a lot of time and effort in it
32	Ich neige dazu, den Entscheidungsprozess soweit ich kann aufzuschieben/I tend to postpone the decision-making process as much as I can
33	Kurz vor der finalen Entscheidung zögere ich ziemlich stark/When I get to the final stage of making a decision, I hesitate quite a bit*
34	Für gewöhnlich berate ich mich nicht mit anderen Menschen, wenn ich meine Entscheidung treffe/I usually do not consult with other people when making my decision*
35	Mir ist es wichtig, dass andere Menschen Anteil an der Verantwortung für meine beruflichen Entscheidungen haben/I prefer that other people share the responsibility for my decision
36	Die Erwartungen der Personen, die mir am nächsten stehen, sind mir bei meiner Entscheidung am wichtigsten/The expectations of those closest to me are the most important factor in my decision

(continued)

Table A1. (continued)

No.	Item Wording (German Version/Original English Version)
37	Ich glaube, dass ich eine berufliche Tätigkeit finden kann, die all meine Hoffnungen erfüllt/I believe that there is an occupation that will satisfy all my preferences and aspirations
38	Falls ich für mein Studienfach oder Ausbildungsgang erster Wahl nicht angenommen werde, werde ich einen Kompromiss eingehen und mich für meine zweite Wahl entscheiden/If I am not able to enter a degree program in my chosen field, I will compromise and look for another one that is right for me
39	Bei Entscheidungen lasse ich mich normalerweise von meinem Bauchgefühl leiten/At the point of decision, I am usually guided by my gut feeling

Note. Items to be reversed are marked with an asterisk.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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