Under renovation

WOPI - Work Personality Inventory

Technical manual

- for research & professional use

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WOPI™- wheels of competence

Work Personality Inventory (WOPI) is a standardized self-report questionnaire for measuring the psychological drivers of individuals' and work groups' basic competencies at work. It is used for personnel assessment and development purposes. In contrast to personality tests with origin in psychological settings yielding general traits of personality, WOPI is essentially contexted in work with its starting point in the five domains of work: independent action, leadership, collaboration, information processing and viewing the work environment and oneself. The domains were first defined comprising fourteen "Basic competencies" driven by motives, cognitive styles and attitudes. Construction of the driver scales marked inventory's birth. Basic competencies can be expressed as personified and relatable "Experts in work" dimensions such as a "Quality seeker".

Motivations were chosen as drivers for the behavioral competencies: independent action, leadership and collaboration. McClelland's framework of the "three big" motivations (1987) and the preceding Murray's taxonomy of needs (1938) served as the core sources. Cognitive styles were chosen as drivers of information processing ie., planning and problem solving competencies. They were arranged in a four-step problem solving sequence of approaching, perceiving, producing solutions and implementing them. Established cognitive style constructs were consulted in construction of the driver scales. Attitudes were chosen as drivers of the viewing competencies. Established attitude constructs were consulted in construction of the scales.

Altogether fourteen motive, cognitive style and attitude driver scales are made up of sixteen self-descriptive item statements. The 224 items are answered on a dichotomous (True-False) scale, the resulting raw scores (0-16) are standardized into standard-and-ten scores (1-10) on the outcome profiles.

Scale reliabilities fullfil requirements for tests used in individual differences research. Criterion validity studies include correlations with spouse and peer ratings, behavior in small groups, performance in managerial and non-managerial jobs, production workers' salary bonuses, etc. Construct validity studies cover relations to personality, organizational and health behavior constructs such as FFM, RIASEC, organizational culture, life values, coping with stress, etc. Country of origin, publishing date and author: Finland, published in 2002 by Petteri Niitamo, PhD, leg. psychologist. Publisher, copyright owner: Competence Dimensions Ltd., www.wopi.app

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Excellence through 14 basic competencies

INDEPENDENT ACTION

quality-seeking, focused action
results-seeking, competitive action

LEADERSHIP

leading behavior of others
leading thoughts of others

COLLABORATION

communication
advisory
listening

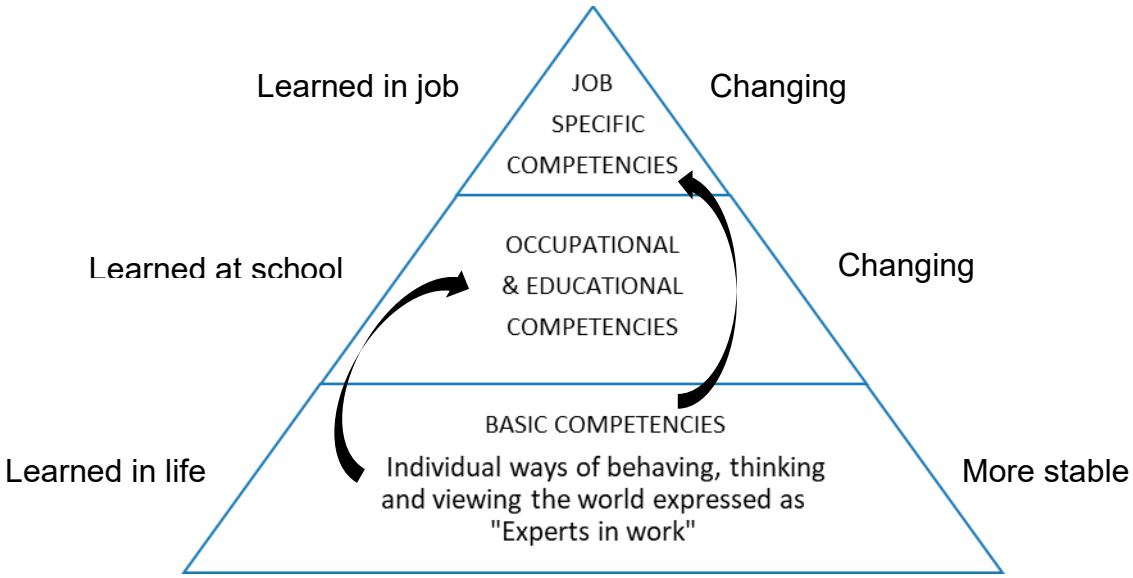
PLANNING & PROBLEM SOLVING

fact- idea-seeking orientation
focused - broad perception
analytic - intuitive thinking
cautious - risky implementation

VIEWING

preference of orderly - variable work environments
realistic - optimistic outlook
ethical self-reflection

PYRAMID OF WORK COMPETENCE



INDEPENDENT PERFORMER - excels in independent activities via quality vs. results

(fo) QUALITY SEEKER
1-5: is not quitting or giving up but less willing to stretch or push oneself "too much".
6-10: focuses and persists on things to attain high quality. Seeks error-free outcomes and perfection even in minor projects, by turning every stone. Proceeds in controlled, even-paced and unidirectional steps. **Jobs**: with more focused responsibilities, requiring precision eg., in technical specialist or semi-independent (supporting) jobs. In managerial roles occasional micromanagement.
(co) RESULTS SEEKER
1-5: does not necessarily lack ambition but is satisfied with less ambitious goals and less competitive behaviors.
6-10: competes (w. self + others) to attain sizeable results. Seeks to win, break records and reach the top. Proceeds with longer, risk-taking and multidirectional steps. **Jobs**: specialist, professional jobs with broader, freer movement and responsibilities requiring entrepreneurial effort and quantitative results such as in sales.

LEADER-INFLUENCER - leads others' action vs. thoughts

(le) ACTION LEADER
1-5: is not necessarily compliant to the will of others but prefers to leave leadership responsibilities to others.
6-10: socially strong-willed, leads others' behavior by setting direction, giving instructions and orders.
Jobs: in addition to supervisory jobs, different jobs involving direct leadership or control of others' behavior.
(*is*) THOUGHT LEADER
1-5: is task oriented, colorless and less interested in personal display but not a bad leader as such.
6-10: leads others' thoughts and impressions with uplifting ideas, displays and persuasion. **Jobs**: in addition to supervisory jobs, all jobs involving leadership of target audiences' thoughts, such as in politics, marketing and promotional work

COLLABORATOR - does things primarily with others

(so) COMMUNICATOR
1-5: is comfortable alone and does not actively seek company. Maintains neutral distance to others.
6-10: spends much time and does things with others rather than alone. Seeks and maintains contacts with others and is often skilled in communication. **Jobs**: those involving direct, face-to-face collaboration, particularly communication.
(em) ADVISOR OF OTHERS
1-5: is more selective in giving sympathy, does not always notice others' needs or, is too shy to offer advice to others.
6-10: advises, supports others, particularly those in need. Feels having resources for supporting others and is readily offering advice to others. **Jobs**: those involving direct, face-to-face collaboration, particularly advisory and guidance.
(re **1-5***)* FOLLOWER OF OWN PATH
Relies almost exclusively on oneself. Is autonomous and uninfluenced. **Jobs**: those requiring and cool impartiality, resoluteness as in purchasing and inspection jobs, also in high-pressure negotiation jobs.
(re **6-10***)* LISTENER TO OTHERS
Relies on others rather than tries to do things by oneself. Listens to, serves others and is easily influenced.
Jobs: those involving direct, face-to-face collaboration, particularly listening to and serving others.

PLANNING & PROBLEM SOLVING - 1-5: Implementer - 6-10: Innovator

(or **1-5***)* FACT-BASED
Approaches things based on proven facts while being less attentive to new ideas and openings.
(or **6-10***)* IDEA GENERATOR
Approaches things by seeking new ideas and openings while being less attentive to factual limitations.
(pc **1-5***)* VIEWER OF THE PRACTICAL PICTURE
Perceives the visible, practical aspects of things but may miss the big, complex picture.
(pc **6-10***)* VIEWER OF THE COMPLEX PICTURE
Perceives things as complex wholes, but may miss the practical reality.
(th **1-5***)* ANALYTIC, LOGICAL THINKER
Produces logic-based standard solutions that work in different situations but are not very creative.
(th **6-10***)* INTUITIVE, CREATIVE THINKER
May produce creative, situation-specific solutions which may turn out to be farfetched, unworkable.

IMPLEMENTATION - implements things with caution - by taking risks

(dc **1-5***)* CAUTIOUS IMPLEMENTER
Implements things with greater caution but with slower tempo. **Jobs**: those requiring sound judgment.
(dc **6-10***)* RISK TAKING IMPLEMENTER
Implements things swiftly, by taking risks. **Jobs**: action-oriented, fast-paced jobs.

WORK ENVIRONMENT & VIEWING

(am **1-5***)* PROPONENT OF ORDER
Needs structure, is disciplined and prefers orderly, stable and unchanging work environments where recognizing irregularities is a competency as in administration, control room, security and inspection jobs.
(am **6-10***)* PROPONENT OF VARIETY
Avoids external structure and prefers variety providing and mobile work environments where curiosity toward everything new and unseen marks a competency, as in expatriate jobs, creative work and sales.
(op **1-5***)* REALIST
Has a limited anticipation of success. By awareness of limited resources may underestimate one's odds.
(op **6-10***)* OPTIMIST
Has a strong anticipation of success. Becoming easily excited over things may overestimate one's odds.
(sr) MUCH - LESS ETHICAL SELF-REFLECTION
1-5: (highly self-reflective) ponders much upon one's ethical conduct and flaws which may, for no good reason complicate action and lead to overemphasis of problems but helps in identifying subtle, less visible problems.
6-10: (less self-reflective) ponders less upon one's ethical conduct and flaws which enables more straightforward action but may lead to bypassing of subtle, less visible problems.

CONTENTS

PREFACE

The WOPI Technical Manual is primarily targeted for researchers but it also helps the professional through deeper understanding of the instrument's theoretical tenets and empirical results. Because of the relatively recent launch of team level analyses, no empirical data on teams is at this point included. The Manual is updated regularly along emergence of new data. The manual presents a short coverage of the theoretical background and psychometric properties. Its main offering lies in the abbreviated reports of empirical results on criterion and construct validity.

PERSONALITY TEST CONTEXTUALIZED IN WORK

From last decade onward there has emerged growing discussion on the frame-of-reference effects as they affect the validity of self-report measures of personality. This discussion relates to the conditional model of dispositions (Wright & Mischel, 1987) according to which behavior in a given situation is a function of both the personality and the situation. In bringing forth the empirical significance of situations, Shaffer and Postlethwaite (2012) published a meta-analysis comparing the validities of general, noncontextualized personality measures to work specific, i.e., to work contextualized measures. The findings indicate that personality measures are more valid predictors of performance when the scale items or instructions are framed specifically to reference work related behavior. The mean validity for noncontextualized measures of personality was .11, whereas the validity for measures contextualized to work rose to .24.

The finding that contextualization toward work produces stronger prediction of work performance sounds intuitively right. The framing of instructions or scale items in reference to work seems reasonable through closer proximity to each application context. But, why be satisfied with "toward work" perspective. We began looking at personality from the standpoint of work itself.

TOWARD COMPREHENSIVE DESCRIPTION OF PERSONALITY

DOMAINS OF WORK

The development of the instrument has the five familiar domains of work as its starting point. Independent action, leadership, collaboration, information processing and viewing the the world, work environment and oneself.

Figure 1 below shows the steps from work domains to Basic competencies to their driver scales.

Figure 1. From work domains to Basic competencies to competency drivers (WOPI)

Work domain	=>	BASIC COMPETENCIES	=>	Competency drivers (WOPI)
INDEPENDENT ACTION		Seeking quality		Focused achievement
		Seeking results		Competitive achievement
LEADERSHIP		Leading action		Leadership
		Leading thoughts		Inspiration
COLLABORATION		Communication		Sociability
		Advisory		Empathy
		Listening		Reliance

	Approaching	Orientation
PLANNING & PROBLEM SOLVING	Perceiving	Perception
	Solving	Thinking
	Implementing	Decision making
	Orderly-variable world	Ambiguity-change
WORK ENVIRONMENT & VIEWINGS	Realism-Optimism	Optimism
	Ethical self-reflection	Ethical self-reflection

BASIC COMPETENCIES AT WORK

The critical step in construction of the WOPI was in defining the Basic competencies for excelling in the five domains of work. The guiding question was what constitutes competence in independent action, leadership, collaboration, planning and problem solving and viewing the world and oneself? No traceable theoretical lead could be found for such a conceptualization and the decision was to make most reasonable assumptions as how to translate the work domains into corresponding competencies.

Behavioral competence composed of independent action, leadership and collaboration were presumed to incorporate altogether seven single competencies, ie., competent ways of performing in work. Planning and problem solving competence was presumed to comprise four single competencies occurring along a four-step sequence. Viewing competencies was assumed to cover three independent worl relevant competencies.

Independent action. Excellence or competence in independent action at work is defined to be attained either through seeking for quality and perfection or through seeking for quantity or results. The two different goals were viewed as involving different instrumental behaviors. Quality could be achieved through focused action and results would be attained through competitive action. Individuals indicate competence in independent action through behavior toward either of the two end outcomes.

Leadership. Competence in leadership at work is similarly viewed as incorporating two different goals: leadership of others' action and leadership of others' thoughts. Action leadership is presumed to be realized through setting direction to other people while thought leadership is attained through inspiring and persuading others. Individuals display leadership competence in either or both of the two leadership goals.

Collaboration. Competence in collaboration at work is viewed to comprise three competencies, subprocesses toward competent collaboration. The goal of doing things with or for others, competent collaboration is realized through communicating, advising and listening to other people. The listening competency was defined as having bipolar structure of primarily listening to others vs. primarily listening to oneself in social situations. Listening and attending to the needs of others promote collaboration in general but in some jobs and social interaction situations competence is marked by pronouncedly autonomous behavior inspection, zero-sum negotiation etc. In summary, individuals can display competence through one or all of the three collaboration competencies.

Information processing, planning and problem solving. Planning and problem solving has been a neglected topic in personality psychology being primarily concerned with behavior tendencies. The current disruption of work is raising planning and problem solving into a forefront position. To address its process nature, planning and problem was arranged along general problem solving steps composed of approaching, perceiving, producing solutions and implementing them. Moreover, highlighted is the concept of standard vs. creative planning and problem solving. In other words, structured information environments are viewed as requiring standard planning and problem solving based on existing, proven, convergent

processes. Unstructured environments in turn call for creative planning and problem solving, capitalizing on creation of new, divergent processes.

Viewing. Three independent viewing competencies are deemed as important in work: attitude toward environmental ambiguity-change, realistic vs. optimistic outlook on oneself ethical self-reflection. The disruption of work are introducing enormous change and novelty to work environments. However, there are jobs and functions where processes recur according to strict routines where attention to, and correction of changes and deviations are required. Examples include the control room, security and financial administration and all kind of monitoring jobs. The ambiguity-change construct is projected to reflect both ends of the dimension as reflecting competence, depending on each specific job.

Optimism reflects the extent to which people hold generalized favorable expectancies for their future and feel that they have ample, even unlimited resources for success in their undertakings. Optimism also bears a dual competency structure at work. While high optimism is touted as an overall resource, lesser amount of optimism, realism or awareness of limited resources reflects competence in many jobs and functions such as in rescue jobs and life-critical tasks. The construct spans from realism to optimism, assigning competence value to both construct ends. Finally, the third important viewing at work is self-reflection, a moderator of multifaceted outcomes.

DRIVERS OF THE BASIC COMPETENCIES

Motivation was chosen as the master driver for the behavioral competencies, independent action, leadership and collaboration. According to definitions in neuroscience (Berridge, 2004) and work psychology (Kanfer et al., 2008; Diefendorff & Chandler, 2011), motivation refers to factors that initiate, maintain and orient behavior. Henry Murray's taxonomy of motivational needs (1938) and David McClelland's subsequent work on the "three big" motivations (1987) served as the prime sources for construction and item writing of the seven single motive constructs. For item writing, consulted were all major need-motive inventories (EPPS, Edwards, 1957/1985; PRF, Jackson, 1967/1999; ACL, Gough & Heilbrun, 1983), the vast number of single need/motive scales as well as the IPIP item bank.

Independent action

The obvious choice for motivational drivers in seeking quality vs. results fell on the achievement motive, the desire to "do something better" (McClelland, 1987). The more than 70 achievement scales published since Murray's early taxonomy (Ray, 1986) illustrate the construct's multidimensional nature. Jackson and colleagues (1976) identified six different content facets appearing in published constructs. Our decision was guided by Lorr's study (1975) on the major personality inventories according to which e.g., EPPS emphasizes competition aspects of achievement while the PRF places more weight on the persistence aspects. The decision was set on focused achievement motive as a driver of the persistence-quality element and competitive achievement notive as the driver of the competition-results facet.

(fo) Focused achievement motive as driver of quality seeking

(co) Competitive achievement motive as driver results seeking

Leadership

Construction of motive drivers of leading behavior vs. thoughts posed more challenge as there is no directly pre-existing leadership construct or measure in the need-motive literature. In Murray's taxonomy, the closest counterpart to action leading is the need for Dominance construct (To control people through command…). The closest counterpart to leading thoughts is the need for Exhibition construct (To impress others…). McClelland's and colleagues' need for Power construct (coded in narrative fantasy) incorporates

both action leading and impression seeking elements under one measure. For the present work the competencies were named as Leadership denoting to leading behavior and Inspiration to leading of thoughts.

(le) Leadership motive as driver of leading others' behavior

(is) Inspiration motive as driver of leading others' thoughts

Collaboration

Construction of the motive drivers of Communication, Advisory and Listening competencies was faced with a mixed set of pre-existing constructs in the need-motive literature. The need for Affiliation construct (To be close and win friendships…) in both Murray's taxonomy and in McClelland's content analytic tradition appear very similar to our pursued Communication construct. The Advisory competency resembles Murray's need for Nurturance construct (To help the helpless…). However, instead of the rather cryptic terminology used in Murray's taxonomy, Nurturance was replaced with the more commonsense term Empathy. Empathy scales outside the need-motive tradition, e.g., (Hogan, 1969) were also consulted. No pre-existing construct exists for the presumedly bipolar Listening construct in the Murray-McClelland tradition. Murray's need for Autonomy construct (To strive for independence…) overlaps with the reliance on self end of the projected bipolar Listening construct although the targeted Reliance as the driver of listening had to be built from scratch.

(so) Sociability motive as driver of communication

(em) Empathy motive as driver of advising others

(re) Reliance motive as driver of listening to oneself vs. others

Planning and problem solving

Cognitive styles (Sternberg & Grigorenko, 1997; Kozhevnikov, 2007) were chosen as drivers of the four planning and problem solving competencies: approaching, perceiving, producing solutions and implementing them. According to the notion proposed by Messick (1976) and others, cognitive styles function as higher level heuristics which regulate lower-order propensities in sequential processes such as learning and problem solving. Some researchers argue that cognitive styles have predictive power for academic achievement beyond cognitive abilities (e.g., Sternberg & Zhang, 2001). Norris and Epstein claim that their cognitive style measure of personality accounts for a substantial amount of variance not addressed by other personality theories such as the five-factor model (Norris & Epstein, 2011). Overall, cognitive styles have shown weaker prediction of behavior than for example traits or motrives. While often depreciated within mainstream personality psychology, cognitive styles have enjoyed more appreciation in educational psychology. In industrial and organizational psychology cognitive styles have been seen as fundamental factors determining both individual and organizational performance (Streufert & Nogami, 1989; Sadler-Smith & Badger, 1998).

The notion of standard vs. creative planning and problem solving derives from favoring of existing vs. new processes and bears close resemblance to Guilford' (1956) distinction of convergent and divergent thinking. The former refers to giving established, "correct" answers to questions with emphasis on logic, familiar procedures and use of stored information. Divergent thinking in turn refers to generation of new ideas, perceptions and solutions, such that go beyond the known and proven. Instead of Guilford's terminology, we chose the broader and more commonsense terms of existing and new processes. Together they yield parallel "lanes" cutting across the four planning and problem solving steps. Research literature offered three preceding cognitive style constructs as bases upon which work-related driver constructs were constructed.

Construction of the cognitive style driver of fact based vs. idea-oriented approach to planning and problem solving faced the situation where no preceding construct could be found in the research literature and

item writing began from a blank slate. However, the construct is conceptually less complex than the three following cognitive style constructs.

(or) Fact vs. Idea orientation as driver of fact-based vs. idea-oriented approach

(pc) Concrete vs. Abstract perception as driver of focused vs. broad perception

Construction of the cognitive style driver of focused vs. broad perception has its roots in cognitive complexity. The concept was introduced by Bieri (1961) as a personality variable indicating how simple or complex is the perceptual skill of the individual. Cognitive complexity has received extensive attention in organizational research, e.g., (Streufert & Swezey, 1986). The scale ends chosen for the projected construct coincide with Gregorc's (1982) construct where perception, the means by which people grasp information, can be concrete or abstract.

(th) Analytic vs. Intuitive thinking as driver of standard vs. creative solutions

Construction of the cognitive style driver of producing standard vs. creative solutions derives from dual-process theories of cognition (Epstein, 1994; Kahneman, 2011; Evans & Stanovich, 2013). Accordingly, there are two fundamentally different types of information processing: intuitive thinking (often referred as Type 1) and rational or analytic thinking (often referred as Type 2). Epstein's (2002) cognitive-experiential self-theory of personality takes the dual-process as its founding concept. The current information processing or thinking construct was set as a bipolar analysis-intuition scale similar to Allinson and Hayes's (1996) similar bipolar measure of intuitive-analytic thinking which has gained wide popularity in organizational studies.

Decision making (dc) as driver of cautious vs. risky implementation

Construction of the cognitive style driver of implementing solutions leaned on cognitive styles' classical distinction between reflection and impulsivity (Kagan, 1966; Messer, 1976) also termed as conceptual tempo. Reflection relates to reasoned response taking a longer time and making fewer errors whereas impulsivity reflects a tendency to produce impulsive responses with shorter latency and making more errors. The current decision making construct took risk-taking and tempo in work settings as the core elements for item writing.

Viewing

As indficators of individual ways of disposing toward the environment and oneself, attitudes (Eagly & Chaiken, 1993) were chosen as the drivers of the three work relevant viewing competencies. The Ambiguity-Change construct has its roots in the extensively studied concept of tolerance of ambiguity. Originally introduced by Frenkel-Brunswik (1948), tolerance of ambiguity has been used in a variety settings including clinical psychology as well as in organizational behavior, particularly pertaining to the topic of change (Judge et al. 1999). Among other things, it has shown to correlate positively with seeking novelty and competence in cross-cultural settings and negatively with perceived constraints, perfectionism and anxiety feelings. In a review article, Merrotsky names tolerance of ambiguity a "trait of the creative personality" (Merrotsky, 2013).

Optimism is an individual difference variable that reflects the extent to which people hold generalized favorable expectancies for their future. Higher levels of optimism have been related prospectively to better subjective well-being in times of adversity or difficulty (Carver et al., 2010). xxx

(am) Ambiguity-Change attitude as driver of favoring orderly-variable work environments

(op) Optimism as driver of success expectancies

(sr) Self-reflection as driver of ethical self-reflection

SCALE TRIALS

The item generation and scale trial program was a tedious and lengthy process that took place in the yearly years of 2000. The interested reader may consult Nederström & Niitamo (2010) for more comprehensive reporting on the scale trial procedures. The WOPI User Manual (2010) presents the most comprehensive definitions and interpretative quidelines of the scales.

The scale construction strategy … Item writing to the set theoretical constructs along principles of theory-based scale construction (Burisch, 1984) our central concern was to accomplish fair treatment of respondents across age, gender, cultural background and educational level. Age fairness was sought by taking care that older, more experienced respondents would not have advantage from their longer tenure at work. Gender fairness meant avoiding item contents which favors male respondents, such as inclusion of masculine contexts, related to e.g., military topics, hobbies, etc. However, the most important challenge was to arrive at item content that would treat fairly respondents with different cultural backgrounds. Basically, the solution here was to seek for items reflecting everyday life contexts, those presumably shared by all adult populations across cultural contexts. Lastly, attention was paid to avoid academic or abstract phrasing and instead pursue standard everyday language shared by people with varied educational backgrounds.

RELIABILITY AND DESCRIPTIVE STATISTICS

Demographics

The age distribution in the final composite sample reflects responses obtained from the total 1534 of altogether 1644 individuals who had expressed their age. The distribution is an approximate representation of age distribution of the active work force. The total sample used for calculating basic descriptive statistics is composed of roughly an equal number of men and women. By level of education, the vast majority of individuals in the sample had college degrees or higher which means that the sample represents relatively highly educated, “white collar” population. Two thirds of all respondents participated in recruitment programs and one third were participants in various training programs.

Table 1

Age distribution in the final total sample, Md = 35 yrs.

< 20 years	
20 to 29 years old	471
30 to 39 years	438
40 to 49 years	339
50 to 59 years	243
> 60 years	41

N = 1534 expressing age of total 1644.

Reliability

Reliability is considered to be the necessary if not sufficient condition of valid measurement. There cannot be validity without sufficient measurement reliability. Reliability indicates the measure's technical proficiency irrespective of the quality of what is being measured. Validity refers to the measure's proficiency in measuring the aimed quality. In behavioral sciences it is common to produce estimates on two aspects of measurement reliability. More common is internal consistency, that is, demonstration that the items in the measure constitute a coherent, measurable construct.

Stability or so-called re-test reliability means that the quality being measured remains existent, that it can be measured at a later point in time with reasonably unchanged results. Personality scales in particular must show temporal stability to demonstrate that the personality doesn't change from moment to moment. The concept of social desirability has always occupied an important role in personality research. Although the current view doesn't require that measures be fully free from social desirability, it is useful to estimate its effect on the measurement scales.

Table 2. shows that both the internal consistency and temporal stability coefficients of WOPI scales which are comparable to figures reported on established, well-validated personality inventories. Both aspects of reliability are sufficient across all fourteen scales.

Table 2. Scale reliabilities and social desirability

WOPI scale	KR-20[1)]	Retest[2)]	WOPI-sr[3)]	C-M[4)]
(fo) Focus	.76	.71	.34	.39
(co) Competition	.78	.83	.08	-.29
(le) Leadership	.80	.89	.09	-.18
(is) Inpiration	.74	.86	.01	-.06
(so) Sociability	.74	.84	.26	.37
(em) Empathy	.75	.85	.36	.38
(re) Reliance	.69	.76	-.12	-.10
(or) Orientation	.77	.89	-.14	-.05
(pc) Perception	.78	.80	.03	-.04
(th) Thinking	.81	.80	-.33	-.16
(dc) Decision making	.77	.91	-.06	-.21
(am) Ambiguity-Change	.71	.85	-.02	.04
(op) Optimism	.81	.85	.46	.43
(sr) Self-reflection	.78	.73		.64

1) internal consistency by K-R-20 formula for dichotomous scales, N = 723 adults, appr. equal number of men and women, recruitment and development programs. Temporal stability, Pearson r, N = 33. Vocational counsellors, five-week interval between testing 1 and 2. Correlations to WOPI self-reflection (sr), scale of social desirability, N = 1644 adults appr. equal number of men and women in recruitment and development programs. Correlations to Marlowe-Crowne social desirability scale, N = 61 recruitment candidates to an ITC company.

Table 2 also shows WOPI scales' relation to social desirability. The two social desirability scales, WOPI's own self-reflection scale (sr) and the widely used Marlowe-Crowne scale of social desirability (Crowne & Marlowe, 1960) are highly intercorrelated which is obviously expected from two scales
purpose to measure the same quality. Partly derivable from this, though deserving a mention is that the two social desirability scales share a common relational pattern to WOPI scales. A similar pattern is evidenced in many other personality inventories: constructs such as focused achievement, sociability,

empathy and optimism generally tend to be socially valued qualities. Overall, WOPI scales seem to be somewhat less saturated with social desirability effects as compared to many other inventories.

Scale means and SD's by sex

Table 3. Scale means and SD's by gender + correlations with age

WOPI	All[1)]	SD	Men[2)]	SD	Women[3)]	SD	Age[4)]
fo	7.85	3.63	8.00	3.66	7.72	3.59	-.16**
co	7.49	3.81	8.06	3.94	6.97	3.60	-.18**
le	9.63	3.61	9.87	3.70	9.40	3.51	-.06
is	9.10	3.51	9.09	3.58	9.09	3.44	-.16**
so	8.97	3.49	8.89	3.63	9.05	3.35	-.34**
em	8.80	3.52	8.60	3.54	8.97	3.50	-.04
re	7.22	3.29	6.51	3.17	7.87	3.27	-.15**
or	7.08	3.50	6.52	3.49	7.58	3.42	-.03
pc	8.53	3.64	8.63	3.63	8.43	3.65	.02
th	8.26	3.63	7.29	3.49	9.13	3.52	-.01
dc	8.31	3.56	7.96	3.58	8.61	3.51	.03
am	8.99	3.34	8.94	3.36	9.03	3.32	-.03
op	9.32	3.85	9.71	3.96	8.96	3.71	-.17**
sr	7.73	3.59	8.19	3.55	7.31	3.58	.01

[1)] 1646 adults in recruitment and training,. [2)] 786 adult males in recruitment and training programs, [3)] 857 adult females in recruitment and training programs, [4)] All adults in recruitment and training programs, N =. ** 0.01, 2-tailed.

Overall, figures in table 3 show that sex differences in mean scores remain small with only two scales having significantly different average scores between men and women. This testifies that the initial goal of writing gender-fair items seems to have been successful. Difference in the reliance (re) scale means that women tend to respond in ways that show greater reliance, i.e., dependency on others. The difference in the thinking (th) scale means that women demonstrate thinking that emphasizes the intuitive end of the bipolar analytic-intuitive thinking scale. Common wisdom or not, men appear to rely more on analysis and logic in their thinking in contrast to women's emphasis on intuition. Special pride is taken on the leadership (le) scale which reflects the desire to lead other people's action. Namely, many established inventories report sex differences on scales such as dominance, assertiveness and leadership. WOPI seems to be unaffected by this gender effect. Finally, the fact that the observed score averages fall closely within the arithmetic mean across the range of raw scores from 0–16 implies approximate normality in score distributions. Such an outcome testifies to success in the effort to write items that would discriminate effectively between individuals (ideal rate being .50 on dichotomous scales).

Respondent populations

The pattern of score averages between the two main respondent populations, recruitment and development, is informative as observed in table 4.

Table 4. Scale means and SD's across two respondent populations

WOPI	All[1)]	SD	Rec[2)]	SD	Trai[3)]	SD	Stud[4)]	SD
fo	7.85	3.63	9.41	3.46	7.20	3.53	6.98	3.35
co	7.49	3.81	8.05	3.72	7.28	3.85	6.04	3.31
le	9.63	3.61	10.41	3.51	9.01	3.60	8.77	3.64
is	9.10	3.51	9.77	3.35	8.82	3.53	9.51	3.41
so	8.97	3.49	10.89	2.89	7.79	3.42	9.49	2.86
em	8.80	3.52	9.51	3.57	8.28	3.50	9.07	2.91
re	7.22	3.29	6.84	3.00	6.87	3.36	9.39	3.06
or	7.08	3.50	6.38	3.36	7.62	3.42	9.28	3.62
pc	8.53	3.64	8.58	3.54	8.39	3.64	9.09	3.61
th	8.26	3.63	6.90	3.55	9.23	3.36	10.97	3.26
dc	8.31	3.56	8.01	3.45	8.46	3.52	7.86	3.90
am	8.99	3.34	9.17	3.25	8.96	3.33	9.61	3.12
op	9.32	3.85	11.43	3.17	8.17	3.76	7.67	3.83
sr	7.73	3.59	9.14	3.54	6.76	3.33	5.16	3.48

[1)] 1646 adults in varied recruitment and development programs. [2)] Recruitment population: 554 adults in varied recruitment programs. [3)] Training population: 656 adults in varied training programs. [4)] Student population: 109 students of psychology and cultural studies.

Focused achievement (fo), sociability (so), analytical thinking (low th), optimism (op), lesser amount of self-reflection (high sr score) and higher social desirability seem to be emphasized in recruitment situations as people are applying for jobs. In other words, in recruitment situations people generally want to be seen as focused, sociable, analytic and optimistic and be less intrigued by their ethical conduct thereby demonstrating wish to appear socially appropriate. Worth of noting is that such a score pattern coincides with the pattern of socially desirable responding. Social desirability may well explain such score elevation in recruitment situations. The only socially desirable scale (indexed by both Marlowe-Crowne and WOPI sr-scale) that doesn't rise in recruitment situations is empathy (em). Although a socially valued motive, the "soft-hearted" quality of empathy may not be seen a "sure bet" for success in applying for jobs. The third respondent population comprises students from a specific field of study which obviously calls for caution in interpretation. Students - perhaps young people in general - at least in the field of culture-arts - seem to differ from the adult working population by heavier reliance on other people, by their idea-orientation and by intuitive thinking. Young people, at least in culture and arts, also seem to have a less tendency to appear and present themselves in socially desirable light.

Norms

CRITERION VALIDITY - Concurrent criteria

As stated earlier, reliability is the necessary but not sufficient condition of validity. Ultimately validity is more important for measures than reliability which refers merely to the measure's technical proficiency

to function as a measurement instrument. Validity is divided into criterion-related, content and construct validity (Cronbach & Meehl, 1954). Criterion validity divides further into concurrent and predictive designs depending on the time availability of the criterion. In the former, the criterion measure is attained essentially at the same time as the target measure. An example is a self-report
measure of neuroticism validated against a psychiatrist's evaluation which is allotted a criterion status. In the latter case, the criterion of truth is attained at some later point of time. An example is career progress as validation for a self-report measure of achievement motivation. While content validity concerns mainly intelligence tests (coverage of the targeted content universe), construct validity is important for all behavioral science measures. The goal of construct validation is to establish the target measure's position within a theoretical, nomological network of theoretical and empirical entities (Cronbach & Meehl, 1954). Construct validation may involve many kinds of evidence, empirical and theoretical, derived from different research designs.

Self-other agreement

One of the most widely used ways to study (concurrent) criterion validity of self-report personality scales is to compare them to external judgments of personality as the criterion (John & Robins, 1993; Funder, 1999). Today there is considerable consensus over the notion that people are on the average able to come up with fairly accurate self-reports of personality when compared to external judges' ratings (Zebrowitz & Collins, 1997; Funder, 1999).

Table 6. Peer judgments, total

WOPI	All peers
fo	.25**
co	.32**
le	.32**
is	.28**
so	.39**
em	.36**
re	.32**
or	.26**
pc	.24**
th	.21**
dc	.51**
am	.26**
op	.39**
sr	.16*
N	202

N = 202. * p < .05, two-tailed.

WOPI scales' criterion validity was studied through relation to external judgments of personality at three levels of acquaintanceship, casual peers, close peers and people with spouse-like relation to the target individuals (Ikonen, 2003). Brief behaviorally anchored descriptions of the fourteen scales were given to the target persons' casual and close work colleagues and to spouses or persons living in spouse-like, close relationship with the targets. The judges were asked to rate the targets' personality on a 1-10 graphical rating scale while remaining blind to the targets' WOPI scores. Table 7 shows correlations across all fourteen WOPI scales.

Table 7. Judges across levels of acquaintanceship

WOPI	Casual	Close	Spouse
fo	.09	.26	.24
co	.46*	.39*	.29*
le	.31	.44*	.31*
is	.09	.47*	.30*
so	.44*	.36*	.50*
em	.57*	.45*	.31*
re	.40	.41*	.45*
or	.04	.42*	.25*
pc	-.16	.50*	.28*
th	.07	.05	.35*
dc	.45*	.55*	.61*
am	.18	.41*	.30*
op	.21	.36*	.49*
sr	.05	.15	.26
N	24	51	62

N = 137. * p < .05, two-tailed, (Ikonen, 2003).

Table 7 shows that ratings by casual peers' (work colleagues) yield 4 significant correlations, close peers (work colleagues in close cooperation) reach 11 significant correlations and ratings by targets' spouses or individuals living in spouse-like relationship yield 12 significant correlations. The overall magnitude of the self-other agreement is comparable to those derived from more established measures of personality such as the Personality Research Form (see Paunonen, 1989, on nine levels of acquaintanceship), the Five-Factor traits of personality (John & Robins, 1993), as well as Q-sortings of personality (Funder & Colvin, 1988). Altogether, the findings on self-other agreement lend strong support for WOPI scales' validity in terms correspondence of self-reports and judgments by knowledgeable external observers. This corroborates also with the earlier findings (and common wisdom) according to which increase in acquaintance increases accuracy in perceiving the other person's personality. Overall, competitive achievement, sociability, empathy and decision making appear as personality dimensions easiest to perceive by external judges.

Table 8. Male targets; male + female judges

WOPI	Male	Female
fo	.13	.32*
co	.19	.41*
so	.38*	.51*
em	.04	.64*
re	.43*	.41*
le	.25*	.47*
is	.18	.45*
or	.24	.34*
pc	.18	.31*
th	.14	.23
dc	.55*	.55*
am	.24	.30*
op	.44*	.38*

sr	.18	.10
N	65	73

N = 138. * p < .05, two-tailed, (Ikonen, 2003).

Table 8 displays the situation between male and female peers serving as judges. Female peers are clearly more perceptive of targets' personality with 12 significant correlations, compared to male peers with only 5 significant correlations with targets' WOPI. Overall, judges seem to assess motives better than thinking. Thinking obviously offers less observable material for external eyes. One exception to this rule is decision making which ranks as the most accurately judged personality dimension. This is probably due to the fact that, in contrast to thinking in general, decision making has more immediate, observable social-motor indications. Attitudes display a mixed picture, with optimism being judged with relatively good accuracy while the individual's self-reflection, perhaps expectedly, remains less known to external observers. Table 9 shows differences between male and female judges when the targets consist of only females.

Table 9. Female targets; male + female judges

WOPI	Male	Female
fo	.12	.31*
co	.19	.32*
so	.35*	.37*
em	.05	.59*
re	.46*	.51*
le	.30*	.49*
Is	.19	.55*
or	.22	.27
pc	.20	.25
th	.20	.18
dc	.54*	.50*
am	.25	.37*
op	.40*	.46*
sr	.26*	.08
N	55	60

N = 115. * p < .05, two-tailed, (Ikonen, 2003).

When females are targets, female peers are again more perceptive of target's personality. This result suggests that there are real differences in the level of agreement due to the sex of the judge. Female peers reached 10 significant correlations compared to males' tally of 6 significant correlations when targets were women. The present data suggests consistently that women may be more perceptive of other people's personality. A fascinating topic obviously deserving further study.

Criterion group differences

Some groups of people, for example men vs. women and leaders vs. non-leaders have been allotted a concurrent criterion status. In other words, they are seen as groups with such existing, distinctive psychological qualities that they may serve as validity criteria for measurement scales. At work, leaders exemplify

such a distinctive group. Both leadership and gender have been thought, although not without dispute, to to be distinguishable by personality characteristics.

Stogdill's (1948) influential review the situational explanation of leadership led to a several decades lasting dismay and skepticism about personality factors' influence on leadership. Renewed interest in personality explanations of behavior through the five-factor framework incepted in the eighties, changed the scene. The more than eight meta-analyses on the five factors' relation to general job performance have confirmed small to moderate predictiveness of job performance for personality (eg., Barrick & Mount, 1991).

The five-factor framework was subsequently adopted to leadership research. The meta-analysis by Judge and colleagues (Judge et al., 2002) presents substantial validity for personality in predicting emergence and effectiveness of leadership. Extraversion-related traits (dominance facet in particular) had the strongest correlations (.31), conscientiousness (achievement facet in particular) came in second (.28) and openness to experience stood in the third place (.24) among all positive correlations with leadership emergence and effectiveness. The multiple correlation for all the five factors reached the impressive magnitude of .48.

Aspiring leaders vs. non-leaders. To test the non-leader vs. leader dictinction, Koskinen (2010) compared in his Master's thesis the WOPI scale scores of 107 candidates to non-leader and 102 candidates to leader jobs. Participants were drawn randomly from a database of 3000 individuals tested at a Nordic HR consultancy as the final recruitment phase. The estimates are somewhat conservative as the author unfortunately instead of raw scores he used standardized scores with a range of 1-10 leading to some loss of information. The table below shows the significant differences in red.

Table 11. Differences between aspirants to non-leader vs. leader positions

WOPI	Non-leader	SD	Leader	SD	Sig
fo	5.70	1.75	5.08	1.71	ns
co	5.24	1.94	6.77	1.99	.001
le	5.28	1.76	7.14	1.22	.001
is	5.18	2.11	6.36	1.81	.001
so	5.58	2.00	5.19	1.93	ns
em	5.74	1.98	5.48	1.93	ns
re	6.21	2.09	5.39	1.92	ns
or	4.61	1.71	4.55	1.58	ns
pc	4.81	1.90	4.71	1.85	ns
th	4.96	1.87	5.23	1.72	ns
dc	5.12	2.04	6.03	1.74	.001
am	5.37	1.77	5.52	1.83	ns
op	5.37	1.73	6.03	1.63	ns
sr	6.29	1.75	6.68	1.71	ns
N	107		102		

209 Finnish candidates to non-leader vs. leader jobs (123 men, 86 women). Significance of means by T test.

The results coincide fully with the Judge and colleagues' finding on extraversion. In the five factor framework, extraversion is a broad construct incorporating such facets as dominance, sociability and competition which correspond fairly directly to the WOPI scales of leading behavior (le), leading thoughts or

inspiring others (is) and competitive (co) achievement (see the subsequent chapter on how the WOPI scales map out on the five-factor structure). However, no evidence was found on WOPI scales corresponding to the five-factor constructs of conscientiousness nor to the openness to experience construct. Instead, quick and risk-taking decision scale (dc) appeared to distinguish leader candidates from candidates to non-leader positions. The candidate gender showed no effect on the found relations.

Nonleaders vs. leaders. Bruhin's Bachelor's thesis (Bruhin, 2010) compared incumbents of non-leader vs. leader (middle management) positions in a financial services company in Switzerland. The table below displays average raw scores (0-16) and standard deviations among 100 study participants. Significant differences are presented in red.

Table 10. Differences between non-leaders vs. leaders

WOPI	Non-leader	SD	Leader	SD	Sig
fo	9.8	3.1	8.8	3.6	ns
co	7.6	3.8	10.1	3.1	.001
le	8.5	3.7	11.7	2.6	.000
Is	8.7	3.2	10.9	2.7	.000
so	9.3	3.3	9.9	2.8	ns
em	10.5	3.7	9.4	3.0	ns
re	8.2	3.2	7.5	3.3	ns
or	7.4	2.6	6.6	3.5	ns
pc	7.5	2.8	7.4	3.2	ns
th	9.9	3.5	8.5	3.5	.043
dc	8.3	3.2	9.3	3.0	ns
am	8.2	3.0	7.9	3.2	ns
op	10.3	3.4	11.1	3.1	ns
sr	8.7	3.5	9.7	3.5	ns
N	50		50		

100 Swiss (mid-level) leaders and non-leaders. Signicance of mean differences by independent groups T test.

The comparison of Swiss individuals already working in non-leader and leader (mid-manager) positions also coincides perfectly with the three (extraversion related) WOPI dimensions of competitive achievement (co), behavior leadership (le) and inspiration (is). Again, no effect appeared on conscientiousness or openness to experience constructs reported in the Judge et al.s meta-analysis. In fact, the fourth distinctive factor, analytic thinking runs counter to the openness of experience hypothesis. Thinking (th) in WOPI is a bipolar scale with low scores indicating analytic and high scores intuitive thinking. Intuition is usually viewed a facet of openness to experience. Thus the Swiss emphasis (in financial services, among mid-managers) on analytic-logical thinking is an antithesis to the openness to experience hypothesis.

One curious finding concerns the comparison of leadership competence between Finland and Switzerland. Among the ways of thinking, Finland seems to put more weight on quick, risk-taking decisions while Switzerland puts more value on predictable analytic-logical thinking. Further research can probe into the question whether the culture of accurate watchmaking or processing of financial information is the explanation for competence value attributed to analytic thinking in Switzerland. However, extraversion presented in the Judge et al. meta-analysis received clear support.

Gender differences in personality. Gender differences in psychological chracteristics have through times been a socially and politically controversial topic**.** Relatively robust evidence has been presented supporting gender differences in personality traits in the general population. According to this, women tend to score weakly to moderately higher on communal traits such as sociability and agreeableness and lower on agentic traits such as the dominance facet of extraversion (eg., McCrae et al., 2005).

However, the issue of gender appears different when looked at the leadership level. Accumulating evidence shows that the gender differences in people working on executive level are smaller or insignificant. A recent study on a large European sample (577 executives; 52,139 non-executive employees) supports the gender-similarity perspective (Willea et al., 2018). Gender differences on leadership ascendancy traits such as Extraversion and Conscientiousness appeared smaller among executives compared to the non-executive population. Further, similar traits distinguished executives from non-executives in both genders. The study also indicates that instead of communal traits, ascendancy to leadership positions seems to be explained by the same agentic traits in women and men. Overall, the meta-analysis by Eagly and colleagues (1995) shows that there appears no significant gender difference in leadership effectiveness as such.

Moreover, the question of gender differences in the general population seems to remain short from any final closure. The table below presents data on gender differences based on a very large sample from Finland. The left-hand columns show average WOPI scale scores derived from a sample of 1646 men and women participating in recruitment assessments and leadership training programs. This data shows only partial support for the results presented by McRae (2005) and others. With perhaps the exception of competitive achievement (co), women don't score lower on neither of the agentic dispositions leadership of behavior (le) or leadership of thoughts (is).

However, the previous studies on gender differences do receive support on the communal Agreeableness construct. High scores (women) on the WOPI reliance scale (re) reflect strong reliance on others which leads to listening and serving others in social interaction situations. However, sociability (so) and empathy (em), the two other communal, Agreeableness-related scales in WOPI don't distinguish between the genders. What is of interest is that in addition to the Reliance scale, intuition indicated by high scores on the bipolar analytic-intuitive thinking scale (th) also distinguish women from men. Executive level women's inclination to intuitive thinking has also been reported in large-scale organizational samples (Agor, 1989). Other significant but smaller differences in the ways of thinking appear on women's stronger idea-orientation (high scores on the or-scale). Women in this sample also tend to spend more time in reflecting upon one's moral conduct (sr). The above reported results must be taken with reservation. The sample of final phase job candidates and participants in leadership training programs obviously don't represent the general population, rather by several qualifications a more advanced population.

Table xx. Gender differences

WOPI	All	SD	Male	SD	Female	SD
(fo) Focused achievement	7.9	3.6	8.0	3.7	7.7	3.6
(co) Competitive achievement	7.5	3.8	8.1	3.9	7.0	3.6
(le) Leadership of behavior	9.6	3.6	9.9	3.7	9.4	3.5
(is) Inspiration	9.1	3-5	9.1	3.6	9.1	3.4
(so) Sociability	9.0	3.5	8.9	3.6	9.1	3.4
(em) Empathy	8.8	3.5	8.6	3.5	9.0	3.5
(re) Reliance	7.2	3.3	6.5	3.2	7.9	3.3

(or) Orientation	7.1	3.5	6.5	3.5	7.6	3.4
(pc) Perception	8.5	3.6	8.6	3.6	8.4	3.7
(th) Thinking	8.3	3.6	7.3	3.5	9.1	3.5
(dc) Decision making	8.3	3.6	8.0	3.6	8.6	3.5
(am) Ambiguity-change	9.0	3.3	8.9	3.4	9.0	3.3
(op) Optimism	9.3	3.9	9.7	4.0	9.0	3.7
(sr) Self-reflection	7.7	3.6	8.2	3.6	7.3	3.6
N	1646		786		857	

1646 adults participating in recruitment and training programs; 786 male, 857 females participants.

Women's ascendancy to leadership positions. The table below presents a brief view on the topic of women's ascendancy to leadership positions through comparison of the drivers of aspiring female leaders drawn from a business school's career planning program and women executives drawn from a women's leadership mentoring program organized by the Finnish Chamber of Commerce. The table below shows significant differences between the two groups, data drawn from Sakki's recent Bachelor's thesis (Sakki, 2020).

Table xx. Differences between non-leaders vs. leaders

WOPI	Aspiring ♀ leaders	SD	Acting ♀ leaders	SD
(fo) Focused achievement	8.6		8.0	
(co) Competitive achievement	7.7		11.6*	
(le) Leadership of behavior	10.4		12.9*	
(is) Inspiration	9.8		11.9*	
(so) Sociability	9.7		10.0	
(em) Empathy	11.2		9.4*	
(re) Reliance	9.3		7.1*	
(or) Orientation	7.5		7.0	
(pc) Perception	9.1		8.5	
(th) Thinking	9.2		8.0*	
(dc) Decision making	8.2		11.2*	
(am) Ambiguity-change	8.9		9.8	
(op) Optimism	8.1		11.2*	
(sr) Self-reflection	9.1		10.1	
N	39		41	

39 aspiring female leaders (students), 41 current women executives in Finland. Significance by the Mann-Whitney test.

The results coincide with the Judge and colleagues (2002) meta-analytic findings on leader-distinctive individuals and the afore-presented comparisons between leader vs. non-leader candidates and job incumbents. Women executives appear to be driven by agentic personality dispositions. Scores on the extraversion-related dispositions of competitive achievement (co), leadership of behavior (le) and leadership of others' thoughts (is) are significantly higher than women's average scores both in the wider population (see previous table) and the mean scores of aspiring female leaders. High scores on quick, risk-taking decision making (dc) lends additional support for the notion of agentic qualities of executives.

An interesting finding is women executives' lower scores on Agreeableness-related dispositions of empathy (em) and reliance on others (re) which for the latter runs counter to the pattern in the wider population. In similar fashion, the executive women appear to favor analytic to intuitive thinking which strongly characterizes women's ways of thinking in the wider population. Finally, executive level women seem to spend less time reflecting upon their moral conduct than both the wider population and aspiring women leadeers.

Overall, the data supports the gender similarity hypothesis at the executive level presented by Willea et al. (2018). Comparison of the aspiring leaders with acting leaders also speaks for the researchers' conclusion that the same personality qualities contribute to men's and women's ascendancy to leadership positions. The comparison of aspiring vs. acting leaders exposes rather large differences specifically concerning the agentic-communal dispositions of personality. Whether this is a question of idealism among women business school students or indication of the new breed of millennials with stronger guest for communality – only further research can answer. Naturally the sample sizes in both groups are too small to draw more differentiated conclusions. Finally, one intriguing finding is the aspiring leaders' lesser optimism. The optimism construct in WOPI has both trait and state qualities and the lesser amount of optimism in female students may reflect the current insecurities felt by young people about the future.

CRITERION VALIDITY - predicted criteria

Predicting job satisfaction in teams

In a doctoral dissertation in progress (Nederström, M.) altogether 980 individuals reported on their job satisfaction by answering to questions pertaining to leadership practices and other HR procedures carried out in the organization. The data allowed organizing all respondents according membership in work teams led by the altogether 182 managers who had taken the WOPI test prior to the survey. The sample included all individuals in supervisory positions in the particular organization, from team leaders to top management. Although the questions were in terms of organizational practices, it can be argued that the evaluations must to an important extent derive from leadership practices of the respondents' immediate supervisors, therefore justifying the look into the managers' personality and consequent effects. Table 12 shows all significant correlations between managers' personality (WOPI dimensions) and job satisfaction ratings. The ratings represent averages over work teams each with 3 to 11 members. Negative correlations in italics.

Table 12. Leader personality and staff job satisfaction, significant r's

fo	ns.
co	.23 general development spirit
	.22 appreciation for one's job
	.20 possibility of defining personal development goals
	.20 emphasis on cross-functional communication
	.20 employment security
le	.28 acknowledging good performance
	.27 adequacy of performance feedback
	.26 usefulness of performance reviews
	.25 seeing own job as part of the larger organisation
	.23 effectiveness of meetings
	.22 rewarding good performance
	.21 possibility of defining personal development goals
	.20 effectiveness of team activities
	.20 emphasis on cross-functional communication

	.19 emphasis on cooperation
	.19 good working climate
	-.22 reasonable workload
is	.20 usefulness of performance reviews
so	.25 effectiveness of meetings
	.22 usefulness of performance reviews
	.22 emphasis on cooperation
	.20 emphasis on cross-functional communication
em	.21 emphasis on cooperation
re	ns.
or	*-.20 work-leisure balance, -.20 rewarding of good performance*
pc	ns.
th	*-.20 work-leisure balance*
dc	*-.20 reasonable workload*
am	.23 possibility of modifying own job content
	.19 possibility of participating in decision making
op	.20 possibility of using personal skills
	-.20 reasonable workload
	-.19 work-leisure balance
sr	ns.

Table 12 shows broad relations between managers' personality and subordinates' job satisfaction in a big research organization. Leadership (le), competitive achievement (co) and sociability (so) as well as attitude towards ambiguity-change (am) appear to have broad positive effects on job satisfaction. What is remarkable about this data set is that the 182 work teams represent a heterogeneous set of situational realities across the organization's vertical and horizontal dimensions. One curious single finding concerns the negative correlation of reasonableness of workload with managers' strong leadership (le), quick decision making (dc) and high optimism (op). Strong, fast-deciding and zealous managers may be setting too high performance standards for people.

Predicting behavior in small groups

One of the strongest evidence of predictive validity comes from direct observation of behavior. In an assessment center targeted at recruitment of trainees to a big ITC company, 88 candidates had taken the WOPI online prior to arriving at to the assessment site. At the center, their behavior was observed in a leaderless group discussion (LGD) by two psychologists. The discussions took place in groups of five candidates at a time and discussants were given controversial issues to discuss and solve. To avoid contamination, halo-effects, the psychologists were kept unaware of any test scores (cognitive or personality) of the candidates. They used rating scales from 1 to 5 and the ratings were averaged to increase reliability. The rated dimensions were: overall activity shown in group (active), cooperative acts (cooperator), presentational skills (presenter) and leadership ascendancy (leader). Table 13 shows significant correlations between WOPI and the behavior ratings.

Table 13. Significant correlations to behavior in leaderless group discussions.

WOPI	active	cooperator	presenter	leader

fo				
co				
le			.31**	.24*
is	.37**		.47**	.43**
so				
em	-.22*			-.22*
re				
or		.21*		
pc				
th				
dc			.29**	.27*
Am	.28**	.28**	.32**	.38**
Op				.23*
Sr				
N	88	88	88	88

88 job candidates to a large ICT company, participating in AC . *p < .05, **p < .001, 2-tailed.

Several expected and a few unexpected results were found. Inspiration (is) emerges as the overall strongest predictor of active and leaderlike behavior in small groups. Particularly, the occurrence of highest correlation with presentational skills coincides perfectly with the scale's construct definition. Expected was also the correlation between leadership (le) and two activity indices in the LGD. However, somewhat unexpected was the strong and broadly predictive capability of the attitude to ambiguity-change (am) dimension. Obviously, the situation (leaderless quality) where individuals, previously unknown to each other, are put together for an hour's time to discuss and come up with solutions to controversial topics, is highly ambiguous in character. Apparently, the am dimension not only tells about being curious and drawn into ambiguous and novel situations but also predicts ability to handle and excel in such situations. Obviously, LGD type of assessment situations may exaggerate the effect of handling ambiguity, real organizational life is much more structured diminishing its effect in long-term leadership.

In the early years of constructing the WOPI, the ambiguity-change dimension was not thought of as carrying such proactive, leadership predictive qualities. Rather, the dimension was expected to "merely" cognitive, predict the capability to work successfully in foreign cultures. But research has growingly demonstrated prediction of competent leadership, evidenced for example in the next table 14. The decision making dimension's (dc) predictive effect may be related to the time-pressed quality of LGDs, participants have to act before the time-limited situation is over. Finally, at first a disconcerting finding was the negative (though low) relation of empathy with performance in small groups. Obviously, the competitive group situation (race for jobs) hardly offers opportunities to "lend the helping hand" for the highly empathetic individuals. Rather, they seem to turn away from such competitive group situations. However, next table 14 shows several prosocial behaviors for empathetic managers.

Predicting leadership performance

A doctoral dissertation study in progress (Peltokangas, H.) concerning leadership as a function of the match between leader's drivers (WOPI) and his/her job's driver requirements involved a research organization (N = 51) and a machinery plant (N = 44). Managers in the former are highly educated individuals, engineers many of whom hold PhD's. The latter manager group consisted of first-line supervisors, responsible for production lines, a clearly more "blue collar" organization context. In other words, it was a composite sample of two very different kinds of organizations.

Peltokangas employed a multirater procedure (360^o) to assess leadership behavior. In a comprehensive 360^o procedure the manager's (or non-manager's) behavior is rated by him/herself, the immediate supervisor, colleagues, direct subordinates and/or other associates. The ratings are averaged across rater groups for objectivity. WOPI360 (WOPI360, 2012) is a multi-rater instrument for assessment of managers' and non-managers' competent behaviors. The 50-item questionnaire presents descriptive statements on managerial (and non-managerial) work. The raters use a 1-7 graphic scale to appraise how descriptive each statement is of the target person's habitual behavior (1 = not at all descriptive; 7 = very descriptive). In her study, Peltokangas used only one rater group, the manager's direct subordinates the number of which ranged from 3 to 6 for each manager. Significant r's are displayed in table 14.

Table 14. Significant r's between WOPI and WOPI360 in two organizations, N = 95

fo	-.26 Looks for new ways of doing things
	-.25 Encourages others to take up new challenges
	-.25 Comes up with broad, big pictures over things
	-.22 Has others participate in planning and developing
	-.22 Is inspired by new ideas
co	ns.
le	.22 Implements things in a brisk, unhesitating manner
	.21 Is quick to tackle occurring problems
is	.29 Gives recognition and praise for work well done
	.27 Is inspired by new ideas
	.25 Encourages others to take up new challenges
	.23 Gives timely and concise feedback
	.22 Has others participate in planning and developing
	.21 Takes challenges outside one's comfort zone
	.21 Strong and determined, gets things going
	.20 Comes up with creative solutions to problems
so	.32 Maintains and fosters relations with others
	.22 Is open and easily approachable
	.21 Actively shares information with others
em	.32 Maintains and fosters relations with others
	.23 Actively shares information with others
	.21 Advises and supports others in problems
re	.23 Advises and supports others in problems
or	.26 Is inspired by new ideas
	.24 Looks for new ways of doing things
	.24 Notices signs of overload and fatigue in others
	.22 Maintains and fosters relations with others
	.21 Acts decisively in ambiguous situations
pc	.26 Maintains and fosters relations with others
	.25 Takes challenges outside one's comfort zone
	.24 Settles disputes in a calm and controlled manner
	.23 Gives timely and concise feedback
	.21 Acts decisively in ambiguous situations
	.21 Has others participate in planning and developing
	.21 Is open and easily approachable
th	-.27 Follows persistently through with what he/she has started
	-.25 Projects action milestones and sticks to deadlines
	-.22 Gives clear and understandable instructions
dc	.28 Is inspired by new ideas
	.24 Looks for new ways of doing things

	.20 Maintains and fosters relations with others
am	.41 Maintains and fosters relations with others
	.36 Looks for new ways of doing things
	.33 Is inspired by new ideas
	.31 Has others participate in planning and developing
	.29 Settles disputes in a calm and controlled manner
	.28 Takes challenges outside one's comfort zone
	.28 Encourages others to take up new challenges
	.27 Notices signs of overload and fatigue in others
	.27 Comes up with broad, big pictures over things
	.26 Is open and easily approachable
	.23 Acts decisively in ambiguous situations
	.23 Actively shares information with others
	.23 Gives recognition and praise for work well done
	.22 Comes up with inspiring visions and goals to others
op	ns.
sr	ns.

Table 14 shows that by far the strongest predictor of competent leadership behavior is the manager's positive attitude towards environmental ambiguity and change (am) with altogether 14 separate correlations to different indicators of competent, "good" leadership. Some of the correlations rise to quite remarkable levels as behavior predictors. In addition to handling of varied challenging tasks and demonstrating creative-curious behaviors predicted by the scale definition (see WOPI Interpretation Manual) the ambiguity-change (am) scale also appears, somewhat surprisingly, to predict managers' prosocial leadership behaviors. In parallel to the previous job satisfaction study, the inspiration scale (is) shows a broad set of connections to subordinates' perception of their manager's leadership behavior. While the leadership scale (le) fails to show a larger number of predicted relations (cf. previous job satisfaction study), inspiration (is) seems to carry several behaviour-directing effects - something which is attributed primarily to the leadership motive (le). One explanation to this might be that direct subordinates may have a less favourable attitude towards strong direction giving, the essence of the leadership motive (le). Finally, all three interaction motives, sociability (so), empathy (em) and reliance (re) demonstrate positive effects on managers' observed behavior, something which is more or less predictable from the respective scale definitions.

Somewhat unexpected is the extent to which managers' creative thinking seems to predict their leadership behavior. Both idea orientation (high or) and abstract, broad perception (high pc) affect leadership. Both appear to contribute to prosocial behaviour besides their main predicted effect on planning and problem solving. However, intuition (high th) seems to stand in stark contrast to the other ways of thinking. The manager's emphasis on intuition appears, at least in this data set, to lead to undisciplined, unpredictable behaviors on part of the manager which is felt as distressing to the subordinates. Another factor decreasing leadership competence is the manager's emphasis on quality and detail predicted from the manager's focused achievement scale (fo). Overall, the results demonstrate strong behavior-predictive validity for WOPI scales. Altogether 54 significant correlations to observed behavior render convincing support for the scales' validity. Finally, mention must be made on the two different samples (total N = 95). The fact that the results derive from two very different organizations and managerial levels testifies to the robustness of the predicted relations.

Predicting emotionally intelligent leadership

Based on the concept of emotional intelligence, Lappalainen constructed scales for self-reported and staff-rated "emotionally intelligent leadership" (EIL) in her published doctoral dissertation (Lappalainen, 2012). Accordingly, emotionally intelligent leadership incorporates three subscales: assertive communication,

emotional availability and inspiration. The staff ratings represent averages over 3 to 7 immediate staff members' ratings on their manager's behavior. The managers' staff-rated EIL correlated with the following WOPI scales: inspiration (is) .27, sociability (so) .26, and perception (pc) -.25 (negative correlation indicates the manager's concrete perception of plans and problems), and quick decision making (dc) .26. The managers' self-rated EIL correlated strongly with numerous WOPI scales which is obviously expected from the shared method variance of two self-reports. The figure below displays only correlations replicated from the staff ratings: inspiration (is), sociability (so) and decision making (dc).

Table xx. Correlations with emotionally intelligent leadership (EIL)

WOPI	Staff	Self
(fo) Focus		
(co) Competition		
(le) Leadership		
(is) Inpiration	.27	.38
(so) Sociability	.26	.39
(em) Empathy		
(re) Reliance		
(or) Orientation		
(pc) Perception	-.25	
(th) Thinking		
(dc) Decision making	.26	.25
(am) Ambiguity-Change		
(op) Optimism		
(sr) Self-reflection		

Predicting production workers' salary bonuses

The doctoral dissertation study (Peltokangas, H.) concerning leadership as function of the match between leader's drivers (WOPI) and the jobs' driver requirements also includes a study on subordinates' job performance. In the sample of 215 skilled production line workers at a machinery plant, correlations were computed between the workers' competency drivers (WOPI) and bonuses paid for outstanding work performance (appraised by immediate supervisors). Both WOPI scales supposed to predict independent performance, the focused (fo) and competitive (co) achievement motive showed significant correlations (.25, .22) to independent work performance rewarded with bonuses. Although the correlations are modest in size, the occurrence of this perfect hit with the objective success criterion is extremely pleasing. The two motives purported to predict good independent performance proved to do the job.

CONSTRUCT VALIDITY

Occupational differences

Occupational differences are often reported as evidence for construct validity. Table 5 displays scale raw score averages on six contentwise diverse occupational groups. The five figures exceeding the averages in the wider population (Pop.) are colored in red. The strongest differentiating competence is marked in boldface red.

Table 5. Scale means in diverse occupational groups

COMPETENCIES	Pop.	Sales	♀Exec	MBA	Psych	Justice	Ballet
(fo) Seeks quality	7.9	10.9	8.0	10.0	5.7	7.1	9.9
(co) Seeks results	7.5	**13.1**	**11.6**	**11.0**	4.9	4.6	7.9
(le) Leads action	9.6	11.1	12.9	10.8	7.4	8.5	6.6
(is) Leads thoughts	9.1	8.9	11.9	10.8	8.8	6.9	7.1
(so) Communicates	9.0	10.9	10.0	8.6	7.8	6.8	7.0
(em) Advises	8.8	10.2	9.4	10.6	9.5	8.7	8.1
(re) Listens	7.2	7.2	7.1	8.0	7.8	6.7	8.9
(or) Seeks facts - Ideas	7.1	5.0	7.0	9.5	8.7	5.3	8.4
(pc) Concr. vs. Abstract perception	8.5	5.3	8.5	8.8	**10.2**	7.4	7.3
(th) Standard vs. Creative solutions	8.3	7.4	8.0	10.7	9.6	7.7	11.0
(dc) Risky, quick implementation	8.3	10.2	11.2	9.7	7.9	7.0	6.4
(am) Stable - Mobile environments	9.0	8.1	9.8	9.9	9.3	7.8	6.9
(op) Realism - Optimism	9.3	11.7	11.2	10.3	9.0	**6.4**	**5.2**
(sr) Lesser ethical self-reflection	7.7	11.1	10.1	9.0	8.1	7.9	6.3
N	1646	65	41	26	61	105	40

Population: 1646 adults across varied recruitment and training programs. Sales: 65 used car salespersons in Finland + Sweden. ♀ Executives: 41 female executives. MBA: 26 students in a creative MBA program (USA). Psych: 61 occupational health psychologists. Judges: 105 senior justices (presidents) of municipal courts. Ballet: 40 dancers at National Ballet.

Sales: salespeople's average driver profile reminds of the profession's common stereotype with very strong results orientation driven by competitive achievement (co), concrete, practical perception of the world (pc), quick, risky implementation of things (dc) and lesser moral self-pondering (high scores on sr). The unexpected finding is the strong quality orientation (fo) because perfection striving and detail focus are typically not seen as qualities of salespeople. However, the focused achievement scale (fo) has the second highest social desirability value next to optimism (see table xx for the WOPI scales' correlations with two independent scales of social desirability). In addition to pondering upon one's moral conduct, the WOPI self-reflection scale (sr) is also a measure of social desirability, ie., tendency to present oneself in socially desirable light (readiness vs. nonreadiness to admit insufficiencies in one's moral conduct). The sales group's elevated score on the sr scale, ie., tendency to present oneself in socially desirable light might offer an explanation for the unexpected result.

Female executives: high-level women executives share the strong results orientation with salespeople. Other differentiating competencies include leadership of others' action (le) as well as others' thoughts (is) and the executives' quick, risk-taking style of implementing things (dc). Similar to the salespeople, lesser moral self-pondering (sr) enables more straightforward proceeding in things.

MBA students: similar to sales and management jobs, results orientation is the strongest differentiating competence among MBA students. In addition, leadership of others' thoughts driven by inspiration (is) appears characteristic to MBA students. In contrast to sales and management, MBA students convey a picture of creative planning and problem solving evidenced in the strong idea orientation (or) as well as production of creative solutions driven by intuitive thinking (high scores on th). This creative slant may be explained by the US-based program's specialization on creativity and design thinking. In other words, an MBA program specialized in finance is expected to show competence rather in standard solutions driven by analytic thinking (low scores on th).

Occupational health psychologists: psychologists are a prime example of a planning-centered profession evidenced with the group's abstract perception of the world (high scores on pc) being their strongest differentiating competence. In addition, the production of ideas, new openings in planning and problem solving (or) attests to the profession's emphasis on thinking-driven competencies. Particularly in health care, psychologists face complex and ill-structured human problems, the grasping and delineation of which marks the profession's core competency.

Justices in municipal courts: as with salespeople, civilian court justices' average scores remind of the lay stereotype in which realism as opposed to optimism (low scores on op) is the strongest differentiating competence. Awareness of limited resources, delineation of the "plain" truth freed from naïvely high hopes certainly count as important ingredients in court work. Realism goes hand in hand with the search for facts as opposed to new ideas (low scores on or) which together reflect the principle of "truth and nothing but the truth". Similar to psychologists, the justice's job is essentially planning-centered in nature. There is little use for maximizing results (low co), inspiring or leading other people's thoughts (low is). Even communication and creation of relationships (low so) are not included in court justices' competence repertoire.

Ballet dancers: professional dancers in (elite-level) classical ballet seem to share court judges' emphasis on realism as their strongest differentiating competence (low op). Acute awareness of limited resources, doubts about success seem characteristic. On the other hand, creative solutions driven by intuition (high scores on th) is something in common with (creative) MBA students. Intuition-led creativity is commonly found in members of artistic professions. Ballet dancers' combination of creativity and quality seeking perfection (fo) is certainly a rare occasion. Equally rare is the ballet dancers' creativity combined with the favoring stable, structured and repetitive environments (low scores on am). Quality-seeking perfectionism and detail orientation and the liking of stable and structured environments are usually viewed as antidotes to creativity.

Occupational prototypes

Example occupational health psychologists.

In contrast to the emphasizedly "doing" centered occupation of used car salesmen, occupational helth psychologists as well as court joudges represent "thinking-planning" centered occupations. Two elements: professionals typically face complex and amorphous problems to be deciphered and understood. The other element is that activity in both occupations evolves from external referrals instead of having to compete for clients as in car sales. Judges and occupational health psychologists are not working in a competitive environment such as in sales.

The big picture: On the basis of their dominant motivation, half, ie. 30 out of 61 individuals were classified as Collaborators (interaction being the strongest motivation irrespective of its scale value). 14 were classified as Leaders-Influencers (leadership as strongest motivation) and only 4 individuals were classified as Independent performers (Achievement as strongest motivation). The remaining 13 individuals displayed combonations of two motivations.

In terms of the two main "lanes" in planning and problem solving, there was a clear Innovator dominance with 46 individuals were classified as Innovators, relying predominantly on new processes and 15 individals were classified as Implementors, relying on existing, proven processes. Idea-oriented approach, abstract perception and creative solutions

In terms of preference for different work environments or "worlds" the sample was split even into 32 preferring stable, unchanging environments and 29 on mobile, changing environments.

Occupation-differentiating scales.

Relation to intelligence. According to the traditional notion intellect and personality represent two distinct faculties of the human mind. While this notion is theoretically justifiable in regard to personality traits, motives and attitudes, the issue on cognitive styles is less clear. The very focus of thinking processes should bring cognitive styles closer to the domain of intelligence.

Raven's Advanced Progressive Matrices Test (APM) is an assessment instrument of high-level non-verbal reasoning. It is designed to differentiate individuals at the high end of intellectual ability and provides information about an individual's capacity to analyze and solve problems, to abstract reasoning and ability to learn at a high level. It is designed for use with senior management and high level professional positions (Raven et al., 1998). In the test, participants are asked to respond to 36 items that gradually increase in difficulty. WOPI was given to a composite sample of 80 mid-managers in finance and ICT companies (N = 80) after the managers had taken the APM (Lappalainen, 2012). The 20-minute timed version of APM has been reported to correlate strongly (.75) with the untimed version (Hamel & Schmittman, 2006).

Two significant correlations emerged, .33 with abstract perception (high scores on pc) and .29 with the leadership scale (le). The first correlation is an important finding in suggesting that abstract perceptual style may be related to analytic-abstract intelligence. The construct definition (for detailed description, see WOPI Interpretation Manual) of the pc scale mentions interest in abstract mental operations and as well as ability for conceptual learning as the scale's content elements. In this regard the correlation supports the pc scale's construct validity. Of equal importance is the absence of correlation between intelligence and any other of the cognitive style dimensions, fact vs. idea-orientation (or), analytic vs. intuitive thinking (th) and decision making (dc). If the pc-intelligence relation proves robust, the pc scale might be considered as substitute to intelligence tests in applied settings. The correlation of intelligence and the leadership motive is unexpected and no immediate explanation may be suggested. Further studies on the topic are on call.

Personality traits

The concept of personality traits has throughout times occupied a dominant position in personality psychology and probably the field cannot do without the concept of observable traits (McAdams & Pals, 2006). It is important to understand that traits represent a very different way of describing people from that of motives or ways of thinking. Traits are about observable behavior consistencies while motives and ways of thinking are regulators, drivers of such behavior consistencies.

The currently popular trait framework is the five-factor model (FFM) according to which personality can be described with five broad categories: conscientiousness, extraversion, agreeableness, openness to experience and neuroticism, sometimes expressed as its opposite, emotional stability. WOPI scales were correlated with the Big Five Inventory (John & Srivastava, 1999) in a group of 51 students of psychology and cultural studies, see in table 15. Two highest trait correlations are in red.

Table 15. Correlations with Big Five traits

WOPI	Consc	Extra	Agree	Open	Neur

fo	.46*	.08	.07	.06	.04
co	.55*	.52*	.00	.03	-.19
le	.26	.46*	-.08	.08	-.32*
is	.28*	.64*	.12	.37*	-.23
so	.24	.55*	.42*	.16	-.42*
em	-.01	.12	.49*	.16	.23
re	.17	.25	.38*	.00	.40*
or	-.42*	-.36*	-.09	.56*	.23
pc	-.29*	-.27*	.00	.40*	.05
th	-.28*	-.05	.03	.23	.27*
dc	-.03	.38*	.01	.06	-.08
am	-.27*	-.08	.00	.22	-.22
op	.38*	.38*	.07	.16	-.69*
sr	.08	-.15	.45*	.13	.21

N = 51 students of psychology & cultural studies, $p < .05$, two-tailed.

Overall, correlations with five factor traits of personality are very much in the expected direction, most relations are easily expectable from the WOPI dimension definitions. The highest correlations (> .40) with Consciousness are Competitive (.55) and Focused achievement (.46). Extraversion correlates with Inspiration (.64) and Sociability (.55). Agreeableness is connected to Empathy (.49) and Sociability (.42). Openness has its strongest correlations with Idea-seeking on the orientation scale and Abstract perception on the perception scale. Finally, Neuroticism correlates negatively with Optimism (-.69) and Sociability (-.42). Of the numerous single relations between the two inventories, there appear two instances that delineate further WOPI scales' construct validity. The creative element in the WOPI inspiration scale (is) is illuminated in the moderate correlation with openness to experience, the creativity-related scale in the FFM. The WOPI reliance scale's (re) positive correlation with FFM emotional stability demonstrates that the WOPI reliance scale reflects positive, non-stressed dependence on other people, that is, free of the neurotic quality that is often reported on dependency-related personality scales. The WOPI self-reflection scale's (sr) correlation with the FFM agreeableness is understandable in light of the fact that the WOPI sr-scale functions as a scale of social desirability. On the other hand, the FFM agreeableness seems to be linked to social desirability.

What should be noted is that the intercorrelation pattern points to a structural asymmetry between the two systems in describing personality. FFM describes personality with much fewer categories and is therefore a more economical description. For example, FFM consciousness and extraversion show eight significant correlations with particular WOPI scales. The criticism against the FFM has been that distinct psychological contents are collapsed together through statistical criteria with the consequence that potentially meaningful and more specific information becomes lost. Another information loss arises in the blurring of the functional processes (emotion, cognition, motivation, behavior, etc.) in the effort of attaining economical description. The strength of the five-factor model is in its economical explanation, its ability to describe personality with a small set of categories.

Factor analysis - WOPI mapped onto the five-factor structure

Factor analysis was run for heuristic purposes In a sample 235 managers at a technology research organization. See the rotated factor matrix in table 16 below.

Table 16. Factor analysis and Big Five structure, Rotated Factor Matrix[a]

WOPI scales	Factor				
	EXTRA	CONSC	AGREE	OPEN	NEUR
(is) Inspiration	,744				
(le) Leadership	,702				
(co) Competitive achievement	,656				
(am) Ambiguity-change		-,654			
(fo) Focused achievement		,651			
(dc) Decision making		-,646			
(so) Sociability			,639		
(em) Empathy			,629		
(re) Reliance (on others)			,608		
(or) Orientation (to ideas)				,847	
(pc) Perception (abstract)				,599	
(th) Thinking (intuitive)				,430	
(sr) Ethical self-reflection					,727
(op) Optimism	,423	-,445			-,546

N = 235, Extraction by Maximum Likelihood. Rotation through Varimax with Kaiser Normalization. Rotation converged in 7 iterations.

The WOPI scales map out rather neatly into the five-factor structure with inspiration, leadership and competition and optimism loading on the Extraversion factor. Preference for stable, non-ambiguous environment (low am), focused achievent motive and cautious, controlled decision making (low dc) load on the Conscientiousness factor in the five-factor system. Sociability, empathy and reliance on others make up the Agreeableness factor. Idea-orientation (high or), abstract perception (high pc) and intuition (high th) can be labeld as the Openness to experience factor. Low self-reflection and high optimism resemble the Neuroticism factor in the five-factor model.

Today, probably the globally most widely used personality test in the trait tradition is the Occupational Personality Questionnaire (OPQ). The particular feature of the OPQ is its differentiation of work life through the no less than 32 trait dimensions in the questionnaire. In a project looking at at the structural similarities and differences between WOPI and OPQ-32, a large consultant company had 40 recruitment candidates take both tests. Significant intercorrelations are displayed in table 17.

Table 17. Significant r's with Occupational Personality Questionnaire (OPQ-32)

fo .34* vigorous
-.32* decisive, less cautious

co .60** competitive, .60** controlling, .40* persuasive
-.52 detail conscious, -.39* rule following, -.36* modest**

le .66** controlling, .57** persuasive, .39* achieving, ambitious
-.52 worrying, -.43** rule following, -.37* abstract, conceptual,**
-.32* emotionally controlled

is .44** controlling, .36* competitive
-.58 modest, -.54** conventional -.50** rule following, -.48** emotionally controlled,**
-.38* detail conscious -.35* conscientious

so .47** outgoing, .43** socially confident, .36* vigorous
-.47 variety seeking -.43** emotionally controlled, -.40* independent minded,**
-.35* modest, -.32* worrying

em .65** caring, .41** democratic, .39* trusting

re .59** democratic, .40* affiliative, .37* trusting, .32* outgoing
-.47 independent minded, -.36* evaluative**

or .58** innovative, .39* abstract, conceptual
-.64 conventional, -.45** detail conscious, -.44** conscientious**

pc ns.

th .61** abstract, conceptual, .43** innovative, .34* evaluative
-.35* modest, -.42 conventional, -.33* rule following**

dc .64** decisive, less cautious, .48** controlling, .32* adaptable
-.45 worrying, -.42 rule following, -.39* detail conscious, -.34 emotionally controlled**

am .44** socially confident
-.47 conventional, -.45** worrying, -.38*, rule following, -.36* detail conscious**

op .64** socially confident, .41** outgoing, .39* toughminded, .37* relaxed,
.36* persuasive, .35* achieving, ambitious
-.64 worrying, -.41** emotionally controlled, -.39* independent minded,**
-.37* abstract, conceptual, -.37* variety seeking

sr .42** toughminded, .36* conscientious, .34* detail conscious
-.34* variety seeking, -.32* decisive, less cautious

Job candidates participating in recruitment assessments, N = 40. *p < .05, **p < .001, 2-tailed.

A great majority of the correlations are in the expected direction and it makes sense only to comment on the seeming anomalies. The absence of any relation of the perception dimension (pc) with OPQ dimensions difficult to explain, particularly when OPQ's abstract-conceptual dimension correlates highly with the intuition end of the thinking dimension (th) dimension in WOPI. Another anomaly is the correlation of WOPI self-reflection with OPQ's toughmindedness. Of course, the sample size is very small and the two anomalies may derive from sample effects.

Life values

Values link the individual to the social world as socially shared "conceptions of the desirable" (Kluckhohn, 1951). Some theorists view values as cognitive representations of underlying motives, transformed to take into account institutional goals and demands (Rokeach, 1979). Milton Rokeach's Value Survey (RVS-Form G; Rokeach, 1988) is one of the most widely studied value instruments in the world. The RVS contains two value sets: instrumental and terminal. The former reflect the preferred ways of conduct while the latter reflect what the person would like to achieve in his or her lifetime. The ingenuity of RVS is in the ability to control for social desirability through the ranking procedure: individuals cannot endorse all socially valued contents but must make a ranking. Rank order correlations were computed between WOPI scales and the instrumental values in a group of 72 recruitment candidates to an ITC company.

Table 18. Rank order correlations with instrumental values (Rho ≥ .30)

(fo)	.40 obedient
(co)	.42 ambitious; .30 logical; **-.48 forgiving**
(le)	.33 ambitious; **-.31 loving**
(is)	.36 ambitious

(so)	ns.
(em)	.49 helpful; .32 forgiving; **-.43 capable**
(re)	ns.
(or)	.44 imaginative; **-.32 responsible; -.31 logical**
(pc)	ns.
(th)	.36 loyal; **-.33 logical; -.32 capable**
(dc)	ns.
(am)	.30 broad-minded
(op)	.37 ambitious
(sr)	ns.

N = 72 candidates to ITC company, negative correlations in boldface.

The correlation pattern falls well in the expected direction. Because of the numerous entries, the reader may examine the rank-order (Spearman) correlations by himself/herself. For an illustrative example, the WOPI scales of competitive achievement (co) and leadership (le) show negative correlation to forgivingness and lovingness (ranked low). In other words, people strong on these motives tend to be "tough-minded" and attribute less importance to such "tender" values.

Organizational culture

Organizational culture has been a lively research topic during the last three decades (e.g., Schein, 1985), and there has been a profileration of different research instruments. One well-known measurement instrument is O'Reilly's and colleagues' Organizational Culture Profile (OCP; O'Reilly et al., 1991). The OCP has been used to assess employees' value congruence with organizations presumably leading to commitment, satisfaction and longer tenure. The OCP is composed of 54 values that make up the cultural fabric of the organization. The values are ranked by a Q-sorting procedure. In the present study, 64 vocational counselors Q-sorted their desired, i.e., ideal organizational culture. Rank order correlations (Spearman) were computed against WOPI scales, see in table 19.

Table 19. Rank order correlations with desired organizational culture (Rho ≥ .30)

(fo)	.33 quality emphasis; .30 precision; **-.31 fairness**
(co)	.51 competition; .38 results orientation; .35 aggressiveness; .33 action orientation; .31 high level of performance; **-.39 being careful; -.39 employment security**; **-.37 stability; -.31 low level of conflict; -.30 fairness; -.30 supportiveness**
(le)	.36 action orientation; 35 competition; **-.36 being careful; -.31 supportiveness**
(is)	.32 action orientation; .30 aggressiveness; .30 reputation of organization; .30 taking adv. of opportunities; **-.43 stability; -.34 employment security**
(so)	.35 aggressiveness; .33 action orientation; **-.38 stability; -.37 predictability**; **-.31 individual responsibility**
(em)	.40 collaboration; .37 tolerance; .36 social responsibility; .32 adaptability; .32 people orientation; **-.43 competition; -.30 achievement orientation**
(re)	.40 collaboration; .35 social responsibility; **-.34 experimentation**
(or)	**-.35 rule-orientation; -.33 precision**
(pc)	.46 individual responsibility; .36 analytic thinking; **-.36 fitting in**; **-.35 low level of conflict; -.35 rule-orientation**
(th)	.37 social responsibility; .36 supportiveness; .32 developing friendship relationships;

-.35 competition; -.30 working long hours

(dc) .31 competition; **-.41 reflection; -.35 employment security**

(am) .36 working long hours; .33 innovativeness; **-.52 rule-orientation; -.48 stability*;* -.30 employment security**

(op) .36 innovativeness, .32 competition; **-.43 employment security; -.41 supportiveness**

(sr) **-.36 competition**

N = 64 vocational counsellors, negative correlations in boldface.

Overall, the relations of WOPI scales to organizational culture support the scales' construct validity. A particularly good example on construct distinction concerns the two achievement scales, Focused (fo) and Competitive (co) achievement which relate differentially and in predicted ways to the ideal organizational culture. Focused achievement relates to quality and precision while competitive achievement correlates with competition and results orientation. This is precisely what is predicted from the WOPI construct definitions on the two different achievement motives. Also, worthy of mention is the finding that, in similarity to the previous study on instrumental values, the competitive achievement (co) and leadership scales (le) link with socially "tough" cultural values, evidenced in the negative correlation with fairness as a value. Some unexpected findings arise too. The sociability scale's (so) connection to aggressiveness and negative correlation to stability-predictability are difficult to interpret. Overall, the connections to organizational values bring clear evidence to construct validity of WOPI scales.

Occupational interests

John Holland (1959) devised a theory of careers and vocational choice which has become perhaps the most widely used concept in career counseling in the world. The RIASEC model presents six personality types in a hexagonal arrangement: Realistic, Inverstigative, Artistic, Social, Enterprising and Conventional. Realistic individuals are practical, prefer concrete approaches to problem solving. Investigative individuals are analytical and prefer to work with data instead of people. Artistic individuals are creative and like to work in unstructured situations where they can use their creativity. Social individuals are cooperative and like to work with other people rather than things. Enterprising individuals are ambitious and like to lead and persuade others. Conventional individuals are conforming and detail oriented, like rules and regulations. An ongoing project to collect data on RIASEC career themes the measure used was a 42 item, 1-5 Likert open source, brief RIASEC test for career pathways published by Hawaii department of education.

Table XX. Correlations with RIASEC occupational interest scales

WOPI scale	Real	Invest	Artist	Social	Enterp	Conven
(fo) Focus				-.29*		.53**
(co) Competition					.39**	
(le) Leadership					.61**	
(is) Inpiration					.31*	
(so) Sociability		-.33*				
(em) Empathy						
(re) Reliance						
(or) Orientation			.33*			-.39**
(pc) Perception		.32*	.38**			

(th) Thinking		-.33*				-.34*
(dc) Decision making					.50**	-.40**
(am) Ambiguity-Change						-.37**
(op) Optimism					.36**	
(sr) Self-reflection			-.35*			.49**

Participants in WOPI certification training, N = 50., *p < .05, **p < .001, 2-tailed.

xxx

Several single RIASEC items falling outside of WOPI contents such as liking to cook, work outdoors, being good at math, etc., were computed for their correlation with the WOPI scales. "Seeing oneself as proficient in mathematics" was the only single item reaching significance on the p < .001 level. The negative correlation with the Thinking scale (th) -.37, indicates co-variation with analytic thinking as the low scores reflect analytic-logical thinking and high scores indicate intuitive thinking. The small accumulated sample restricts any wider reaching conclusions. More severe restrictions follow from

Team roles

Team roles. Today work is increasingly carried out in teams. The organizational hierarchy has melted down dramatically and organizations are built around teams as independent performance units. All this has made teamwork more and more important. Perhaps the most well-known developer of the team role concept is Meredith Belbin (1981). According to him, teamwork comprises both technical and role aspects. Efficient teams are able to exploit different roles and an ideal situation is where each team member has the capacity to enact several team roles. Belbin's message is simple: efficient teams need members who can master more than one team role. The WOPI framework incorporates an original concept and an assessment-coaching instrument which was constructed independently from WOPI. The concept draws upon Belbin's idea of the fruits of role diversity. According to the WOPI team role concept, individuals benefit from knowing their most developed role and from rehearsing the less developed ones. The WOPI Team Roles questionnaire (TR) includes team roles are presented below with with significant correlations to WOPI scales (N = 118).

Table 22. WOPI Team Roles, significant correlations in descending order, negative r's in boldface

TEAM LEADER - inspiring organiser of action
is .57, le .56, co .47, op .39, so .30, dc .28
CONTROLLER - critical and sharp-eyed controller of action
co .58, fo .49, le .40, is .20 **th -.38, or -.24**
COLLABORATOR - agreeable and enthusiastic alongside-walker
so .43, is .34, em .34, re .34
SPECIALIST - conscientious, quality-oriented "focuser"
fo .23, th .20, **op -.55**, **dc -.46**, **am -.42**, **re -.40**, **le -.36**, **so -.30**, **is -.29**
IDEA GENERATOR - original and creative developer
or .37, is .31, am .31, pc .28, co .27, op .23, dc .19

Table 23 shows significant WOPI correlations to Belbin's team roles. Brief descriptions of Belbin's roles are given for the uninformed reader in the following: Plant = creative problem solver; Resource Investigator = outgoing opportunity seeker; Co-ordinator = clarifier of goals; Shaper = dynamic driver of things and

people; Monitor-Evaluator = clear-sighted judge; Team worker = diplomatic co-operator; Completer-Finisher = conscientious, persistent finisher of things, Implementer = practical implementer of ideas. The WOPI scales were correlated with Belbin's team roles in a group of 70 students of psychology and cultural studies.

Table 23. Significant correlations with Belbin's team roles, negative r's in boldface

(fo)	.40 Completer-Finisher; **-.26 Resource Investigator**
(co)	.31 Plant; .25 Shaper; **-.24 Teamworker**
(le)	.49 Shaper; **-.43 Teamworker**
(is)	.37 Shaper; .23 Resource Investigator; **-.24 Completer-Finisher**
(so)	.26 Teamworker; **-.33 Monitor-Evaluator**
(em)	.24 Co-ordinator
(re)	.43 Teamworker; **-.31 Shaper**
(or)	.52 Plant; .39 Resource Investigator; **-.36 Implementer**; **-.26 Completer-Finisher**
(pc)	.43 Plant; .26 Resource Investigator; **-.28 Implementer**; **-.25 Completer-Finisher**
(th)	.29 Resource Investigator; .25 Plant; **-.25 Monitor-Evaluator***;* **-.23 Completer-Finisher**
(dc)	.32 Shaper; .31 Resource Investigator; .24 Plant; **-.29 Completer-Finisher**
(am)	.43 Resource Investigator; .24 Co-ordinator; **-.49 Completer-Finisher***;* **-.24 Monitor-Evaluator**
(op)	.32 Co-ordinator; .24 Shaper; **-.27 Teamworker**
(sr)	ns.

N = 70, students of psychology & cultural studies, negative correlations in boldface.

Overall, as seen in table 20, the pattern of WOPI correlations with team roles coincides well with what is theoretically expected from the WOPI construct definitions. The only apparent divergence in the overall pattern concerns WOPI scales' relations to the Co-ordinator role. While several correlations emerge to the Chairman role, they seem to be at odds with Belbin's definition of the role. Without going to the specifics of all the observed relationships, it may be concluded that the WOPI scales relate to team roles in ways that support their construct validity.

Leadership roles

Leadership roles. A role is an expected pattern of behaviour. Hersey and Blanchard (1993) have described several roles related to individual behavior in groups. Team roles are important for better understanding of teamwork. The wellknown scholar of leader roles is Henry Mintzberg who formulated three general types of leader roles and three subroles for each general type (Mintzberg, 1973). The WOPI framework incorporates an original concept and an assessment-coaching instrument of leader roles which was constructed independenty from WOPI. According to the WOPI concept, individuals benefit from knowing their most developed role and from rehearsing the less developed ones. The WOPI Leader Roles questionnaire (LR) includes the leader roles presented below with significant correlations to WOPI scales (N = 119).

Table 24. WOPI Leader Roles, significant correlations in descending order, negative r's in boldface

DIRECTION SETTER - Strong and demanding direction-creator
le .49, co .37, is .36, fo .30, em .27, dc .24, **am -.26**
ADMINISTRATOR - Objective cherisher of rules

fo .31, co .28, **am -.49, op -.31**

PARTICIPATOR - Agreeable and warm nourisher of cooperation

re .29, em .27, th .21, **dc -.23**

COACH - Results-oriented and demanding coach

is .39, co .36, fo .23

CHANGE AGENT - Creative and enthusiastic visionary

is .57, le .45, or .46, co .39, op .37, am .35, so .22, dc .18

Learning stages

Lawrence Kolb has devised a widely known learning model (Kolb, 1976) where four learning stages are arranged as a sequence from Concrete Experience, to Reflective Observation, to Abstract Conceptualization and finally to Active Experimentation. WOPI scales were correlated with the four learning stages in Kolb's Learning Style Inventory (LSI), in a group of 93 candidates applying for administrative positions in the Finnish local government, see results in table 20.

Table 20. Significant correlations with Kolb's learning stages (LSI)

(fo) focus	.31 Reflective Observation
(co) competition	ns.
(le) leadership	ns.
(is) inspiration	.27 Concrete Experience
(so) sociability	.22 Active Experimentation
(em) empathy	ns.
(re) reliance	.25 Concrete Experience
(or) orientation	.39 Concrete Experience; **-.36 Active Experimentation**
(pc) perception	.54 Abstract conceptualization; **-.46 Active Experimentation**
(th) thinking	.39 Concrete Experience; **-.29 Abstract Conceptualization**
(dc) decision making	.22 Active Experimentation; **-.43 Reflective observation**
(am) ambiguity-change	.28 Abstract Conceptualization; .21 Concrete Experience
(op) optimism	ns.
(sr) self-reflection	.25 Abstract Conceptualization

N = 93; candidates to local government administration, negative correlations in boldface.

The main expectation was fulfilled as the highest intercorrelations with LSI cluster around the thinking scales in WOPI as seen in table 16. The WOPI orientation scale's (high scores indicating idea orientation) definition resembles the content of LSI Concrete Experience stage. An even more pronounced relation is seen in the strong correlation between the WOPI perception scale (high scores indicating abstract, broad perception) and the Abstract Conceptualization stage in LSI. Finally, the WOPI decision making scale shows fairly strong negative correlation to the LSI Reflective Observation stage which is expected from the WOPI construct definition. Two WOPI motive - LSI learning correlations appeared unexpectedly but are in line with the particular motives' construct definitions. Focused achievement (fo) involves a concentrating,

focused behavior style which is the core LSI Reflective Observation stage. In addition, the WOPI inspiration scale's (is) correlation with LSI Concrete Experience stage corroborates the WOPI inspiration scale's experiential character, suggested earlier. Persuasion and charisma, the elements of inspiration, draw essentially upon experiential elements.

Learning styles

Learning is obviously an important part of today's work life illustrated in the concept of the "Learning organization" (Senge, 1990). Life-long learning has become the central challenge. Individuals have different learning styles which they use in learning new things. The WOPI framework incorporates an original concept and an assessment-coaching instrument for learning styles, instrument which was constructed independently from WOPI. The LS draws upon Kolb's model of learning and the psychoanalyst Erik Erikson's theory of social modalities (Erikson, 1950). According to the WOPI-LS concept, all learning begins with EXPERIENTIAL learning, non-critical acceptance of the thing to be learned. Then, people ANALYZE critically the features of the thing to be learned, taking distance to the object of learning. Then, people CONCEPTUALIZE, create a "theory" of what is to be learned. Finally, people learn by DOING the thing to be learned. Every person goes through all of the phases but individuals differ in their personal preference for each stage. Individuals benefit from knowing their most developed style and from rehearsing the less developed ones. The WOPI Learning Styles questionnaire (LS) includes the dimensions shown below. Significant correlations to WOPI scales are exhibited below (N = 117).

Table 21. WOPI Learning Styles, significant correlations in descending order, negative r's in boldface

LEARNING BY EXPERIENCING - open-minded, receptive "explorer"
th .42, or .40, is .26, dc .24, em .23, re .21
LEARNING BY OBSERVING - critical, measuring "laboratory engineer"
fo .41, dc -. 39, **th -.23**, **am -.23**
LEARNING BY CONCEPTUALIZING - theory-developing "scientist"
pc .55, fo .22, co .19 **dc -.27**, **th -.26**,
LEARNING BY DOING - experimenting "apprentice"
dc .25, so .24, co .19 **pc -.34**, **or -.25**

Creativity

Problem solving is a central process of work behavior. One of the most widely used instruments to study problem solving styles is Kirton's Adaption-Innovation Inventory, KAI (Kirton, 1976). KAI measures two independent, contrasting styles of problem solving. Adaptors perform standard problem solving, whereas Innovators use creative problem solving. While both can be efficient, Adaptors seek improvements to existing problems whereas Innovators seek to change the framework of problems.

Creativity has also been central topic in the world of work. After a quieter period, creativity is reappearing under the term innovation. In the past, innumerable measures of creativity have been developed in psychological and educational research. One of the most successful and well-validated measures of creative personality is the Barron-Welsh Art Scale, BWAS (Welsh, 1987). In this nonverbal measure respondents express their liking or disliking to non-representational line drawings. The scale has shown to relate to creative and extraordinary performance across diverse occupations (cf. IPAR studies at UC Berkeley).

WOPI scales were correlated with KAI and BWAS respectively in groups of 68 vocational counselling psychologists and 50 psychology students. The correlation pattern of WOPI with KAI falls almost perfectly with the expectation. The orientation (or) scale (high scores indicating idea-orientation) correlates very highly with the Innovator style. The scale's negative correlation with the Adaptor style means that fact orientation, the low end of the bipolar or-scale relates to Kirton's Adaptor style. A similar pattern appears on the perception (pc) scale: abstract perception relates to the Innovator style while concrete perception (low scores) is related to the Adaptor style. The thinking scale th (high scores indicating intuitive thinking) is related to the Innovator style although the scale fails to relate to the Adaptor style. Some of the WOPI motive scales show nonexpected but construct-informing relations. Inspiration is correlated to the Innovator style. This finding underscores the creative element in inspiration. As recalled from the earlier, inspiration was related to Openness to Experience in the FFM model. The ambiguity-change scale (am) shows relations to the Adaptor-Innovator measures shedding further light on the construct. See table 25.

Table 25. Correlations with creativity

WOPI	KAI-i[1)]	KAI-a[2)]	BWAS[3)]
fo	.18	.46**	-.38**
co	.28*	-.02	-.48**
le	.08	-.11	-.03
is	.36**	-.13	-.08
so	-.03	.13	.09
em	-.01	.10	.11
re	-.29*	.40**	-.04
or	.59**	-.39**	.30*
pc	.49**	-.21	.26
th	.28*	-.26*	.29*
dc	.37**	-.54**	-.03
am	.44**	-.58**	.39**
op	.18	-.25*	-.12
sr	-.01	.06	.06
N	68	68	50

[1)] KAI-Innovator scale, [2)] KAI-Adaptor scale: 68 vocational counselling psychologists. [3)] BWAS Barron-Welsh Art Scale: 50 psychology students. * 05 level, 2-tailed; ** .01 level, 2-tailed [1)] KAI-Innovator scale measures.

Correlations to the Barron-Welsh Art scale are particularly noteworthy because its nonverbal format cancels out any possibility of shared method variance, the notorious effect burdeoning all self-report to self-report relations. Two of the WOPI scales suggest clear relatedness to "creative personality" measured by the BWAS. Both idea-orientation (high or) and intuitive thinking (high th) are commonly attributed as elements of creativity. The noteworthy and only partially predictable relation concerns the construct of ambiguity-change (am) to creative personality, (high scores indicating preference for novel, variety providing

environments). But, once we realize that the creativity-contributing stimuli in the BWAS comprise ill-formed, unbalanced and messy line drawings, we realize the connection. The WAS drawings represent ambiguity and variety in graphical form. The am-scale is about favoring
non-standard to standard environments which are the core of BWAS. This finding adds to the construct validity of the WOPI Ambiguity-change scale.

The three WOPI scales demonstrate marked-level correlation to BWAS which lends convincing support for the construct validity for each of the thinking and attitude scales. Finally, some non-expected findings appear between the motivational scales in WOPI and creative personality. Both the focused (fo) and competitive (co) achievement scales show moderate to marked negative correlations to BWAS. Generally presumed to be a strong predictor of work accomplishment, achievement motivation seems to work against creativity at least in samples of psychologists (the reader may also note the average scores of occupational health psychologists in table XXX implying that psychologists are not independent achievers-performers in their mentality). Focused achievement, with its disciplined, detail-emphasizing style is more easily understood as reflecting non-creative mentality. The anti-creativity feature of competitive achievement is more difficult to interpret. Perhaps the instrumental, heavily results-driven quality of competition doesn't leave room for the non-directed, freely moving mentality often considered to be the essence of creativity. This finding may also relate to the distinction between creativity and innovation. That is, creativity is not sufficient for innovation which needs the implementing effect provided by achievement motivation.

Rorschach - subconscious personality

If personality traits eg., in the five-factor framework are about the visible behavior or the "surface" of human personality, personality dynamics deals with "deeper" structures which function as mediators to visible behavior. It is about internal structures and mechanisms that regulate, transform, channel or otherwise control impulses, emotions and motives in the production of behavior, the most familiar example being defense mechanisms. One classic instrument to study such deeper levels is the Rorschach inkblot test (Rorschach, 1921). While the classical psychoanalytic, from highly derived interpretation system has remained controversial, Exner devised an "objective" scoring system based on the responses' perceptual properties (2003). This brought renewed empirical research interest in the instrument. Meta-analyses published in the most authoritative scientific journals have attested to the instrument's validity in regard to particular variables (Dumitrascu & Bombel, 2013).

In her doctoral study on personality-job fit, Peltokangas (Peltokangas, H) collected data on 51 managers' Rorschach responses scored with the Exner's Rorschach indices. Altogether 10 correlations between WOPI scales and Ro indices exceeded the level of .35 correlation. One example is SumY (total number of diffuse shading responses) which correlated .49 with the abstract perception construct (pc) in WOPI. Emergence of such extensive, even strong relationships to the "deeper" probing Rorschach came somewhat as a surprise and attests to the construct validity of WOPI.

Another instrument measuring "deeper", subconscious aspects of personality is the Picture-Story-Exercise (PSE), also known as the Thematic Apperception Test (TAT). In parallel to Exner's influence on Rorschach, David McClelland and colleagues devised, though their extensive experimental program, a quantitative scoring system for the PSE-TAT (McClelland, 1987). This led to renewed interest in implicit motivation (Schultheiss, 2008; Schultheiss & Brunstein, 2010). Particularly interesting are Brunstein's studies on well-being effects explained from the mismatch between individuals' implicit motives and their explicit goals (Brunstein, 2010). Also interesting are Weinberger and colleagues' explorations on implicit motives' effects on psychotherapy outcomes and mental health (Weinberger et al., 2010). The present author's doctoral dissertation (Niitamo, 1999) attempted to bridge implicit ("deep") and explicit ("surface") motives. Hopefully new research may be presented on the topic in future editions of the present WOPI Technical Manual.

Health and well-being

Self-consciousness, social anxiety and A-typicality. The following presents correlations with various variables presumed to contribute to the scales' construct validity. Scheier and colleagues' (Fenigstein et al., 1975) self-report measure of self-consciousness includes three sub-scales. Private self-consciousness (PRS) (≈ introspection) reflects attending to one's inner thoughts and feelings. Public self-consciousness (PUS) relates to awareness of the self as a social object. Self-consciousness is not as such related to health and well-being but is included here as Scheier's set of scales incorporates a third subscale, social anxiety. Social

anxiety (SA) reflects feelings of discomfort in the presence of others. The correlations were run in a group of 50 recruitment candidates to an ICT company.

A-typicality refers to a psychologically maladaptive behavior pattern composed of strong ambitious strivings, intolerance and irritability, which together, with genetic factors and bad health habits (overweight, blood pressure, smoking) may contribute to vulnerability to heart and coronary disease. Correlations were run against Spence and colleagues' A-typicality scale (Spence et al., 1987) in a group of 59 vocational counselors. See results in table 26.

Table 26. Correlations with self-consciousness scales and A-typicality.

WOPI	PRS[1)]	PUS[2)]	SA[3)]	A-Typ[4)]
fo	.08	.20	-.27	-.05
co	.11	-.03	-.49*	.40*
le	-.35*	.27	-.41*	.16
is	.02	.04	-.62*	.09
so	-.19	.26	-.48*	-.30*
em	.07	.25	-.31*	-.02
re	.10	.27	-.07	.20
or	.46*	-.28*	-.02	.14
pc	.45*	-.22	.05	.11
th	.53*	-.05	.04	.10
dc	-.05	.13	-.29*	.23
am	-.08	-.27	-.10	-.10
op	-.19	.05	-.42*	-.23
sr	-.22	.21	-.21	-.02
N	50	50	50	59

* p < .05, two-tailed. [1) 2) 3)] 50 candidates to an ICT company. [4)] 59 vocational counsellors.

Noteworthy findings on the sub-scales of self-consciousness include the negative correlation between the leadership motive (le) and private self-consciousness. Apparently, the motive's focus on leading other people's action leaves little room for introspection. The creative end of the three thinking scales, idea-orientation (high or), abstract perception (high pc) and intuitive thinking (high th) seem to associate with

introspective tendencies. The negative correlation between idea-orientation (or) and public self-consciousness may be understandable in that idea orientation may reflect immersion in ideas with consequent detachment from the social world.

The several negative correlations of WOPI scales with social anxiety are noteworthy. Both leadership motives - leadership and inspiration - as well as both achievement motives - focused and competitive - serve as protective factors against social anxiety. Also noteworthy are the interaction motives which seem to independent of anxiety feelings in social situations. The fact that reliance on others (re) is not related to social anxiety is important as dependency is often related to neuroticism. This "positive dependency" finding concurs with the scale's positive relation to emotional stability in the five-factor system. In fact, high reliance on others may reflect its adaptive quality ie., capacity to rely on or be dependent on others.

The moderately strong correlation of the WOPI competitive achievement motive (co) with A-typicality is in the direction predicted in the A-typicality theory, i.e., hard-driving ambition may be deleterious to health (if connected with other precipitating, genetic or life-style factors). The negative correlation of sociability

(so) with A-typicality is again noted as interesting in its protective implication. Sociability (so) appears as generally beneficial for well-being. It is paradoxical is that competitive achievement protects against feelings of social anxiety but under particular circumstances makes the person vulnerable to heart trouble.

Job burnout. A doctoral dissertation in progress (Peltokangas, H.) includes assessment job burnout symptoms in first-line supervisors at a machinery plant. WOPI scores were correlated with scores on the Maslach Burnout Inventory - General Survey (MBI-GS; Maslach et al., 1996), a widely used self-report instrument for assessing job burnout. MBI has three subscales: emotional exhaustion (Exh), cynicism (Cyn) and professional inefficacy (InE). The total burnout score is computed as sum of the subscale scores (But). Table 27 below displays the significant correlations in the sample of 51 study participants.

Table 27. Significant correlations to MBI-GS: supervisors

WOPI	Exh	Cyn	InE	But
fo	.	-.38	.	.
co	.	.	-.41	.
le	.	.	-.41	.
is	.	.	.	.
so	.	-.30	.	.
em	.	.	.	.
re	.	.	.	.
or	.	.	.29	.28
pc	.	.	.	.
th	.33	.	.43	.44
dc	.	.	-.43	-.38
am	.	.	.	.
op	.	.	-.47	.
sr	.	.	.	.

N = 51 first-line supervisors at a machinery plant.

The correlations imply that intuitive (th) and idea-oriented (or) supervisors may be vulnerable to feelings of burnout while quick, risk-taking decision making (dc) serves as a protection from it. Partial protection is also provided by focused (fo) and competitive (co) achievement motives, optimism (op) and the desire to form and maintain social relations (so). However, the sample is small for any firm conclusions. The table 25 below on 215 skilled workers allows more reliable interpretation.

Table 28. Significant correlations with MBI-GS

WOPI	Exh	Cyn	InE	But
fo	-.16	-.18	-.19	-.23
co	.	.	.	.
le	.	.	-.20	.
is	.	.	.	.
so	.	-.19	.	.
em	.	.	.	.
re	.	.	.	.
or	.24	.	.	.25

pc	.19	.	.	.14
th	.20	.	.	.18
dc	.	.	.	.
am	.	.	.	.
op	-.18	-.18	-.17	-.24
sr	.	.	.	.

N = 215 skilled workers at a machinery plant.

In comparison to managers, table 24 on the larger sample of skilled workers replicates the mild correlation between idea-orientation and total job burnout. Small replicating effects are seen also on focused achievement (fo) and optimism (op) indicating protection from feelings of job burnout. However, the correlations are small and it is safe to conclude that WOPI dimensions seem not to be strongly related to (self-reported) job burnout. The following table 25 displays data on general mental symptoms which may help in mapping out this relatively unexplored domain between personality and well-being.

Mental distress symptoms. Another option is to look whether personality factors affect general distress symptoms. The Brief Symptom Inventory (BSI; Derogaitis & Melisaratos, 1983) is a self-report screening device for patient, outpatient and non-patient populations. The particular feature of the BSI is that in addition to an overall distress score it yields information on differential psychiatric symptoms. However, in work-related non-patient samples the prevalence of severe symptoms such as paranoid ideation is rare and it makes sense to look only at scores on symptoms with prevalence in normal populations. No single individual in the present data reached clinically significant score levels in any of the scales. The BSI was given to 81 participants in WOPI certification training during 2014. The resulting significant correlations with the total distress score and depressive symptoms are shown in table 25 below.

Table 29. Significant correlations to symptoms of mental distress

Total distress: -.47** optimism, -.22* sociability, .25* reliance
Depressive: -.43** optimism, -.28* decision making, -.25* sociability

N = 81 participants to WOPI certification training.

The only personality factor with significant and substantial relation to the total distress score is optimism (op). The negative correlation sign indicates that people high in optimism seem to be protected against distress feelings and depressive feelings. This is an expected relation as such. The distress-protective element of quick decision making replicates the previous finding on supervisors' burnout symptoms (Table 23). Obviously, the causal direction is complicated: is fast decision making the cause or effect of the mental state of non-distress. At any rate, decision making which serves as the driver of implementing things appears to be a factor related to burnout and general distress. What is potentially interesting is sociability's relation to absence of mental distress symptoms. The desire and interest in forming and maintaining human relations might provide protection against distress. The relation of reliance on others (re) to the total distress score is understandable but escapes any firm conclusions. Overall, the current relatively small datasets paint a complex picture as only optimism shows consistent (protective) relation to well-being and distress feelings. Obviously larger datasets particularly on patient and subnormal populations are needed to arrive at a comprehensive picture.

Coping styles. Instead of emphasis on symptoms, the lack and loss of well-being a more positive approach focuses on coping with the inevitably occurring problems and stresses. Everyone faces problems and everyone experiences stress. The work life has become mentally more demanding and stressfull making the coping with stress into a competency in itself. The Wopi architecture incorporates an original concept and an assessment-coaching instrument which was developed indpendently of the WOPI. The Coping Styles questionnaire (WOPI-CS) draws upon Richard Lazarus' and colleagues' studies on coping (Lazarus & Folkman). According to the WOPI framework, individuals benefit from knowing their most developed (much used) style and from rehearsing the less developed (less used) styles. The WOPI Coping Styles questionnaire dimensions are displayed in table 30 below with significant correlations to WOPI scales (N=119).

Table 30. WOPI Coping Styles, significant correlations in descending order, negative r's in boldface

DIRECT ACTION - Takes direct action to change the situation
le .39, or -.35, dc .33, **pc -.33**, **th -.26**
INTERACTION - Seeks and receives support from others
re .61, so .40, em .37, th .27, **op -.27**
PLANNING - Takes a rational look at the situation
pc .44, **dc -.32**
DETACHMENT - Evades excessive stress
th .31, or .28, **le -.31, sr -.23**
SELF FOCUS - Instead of active efforts, shifts attention to him/herself
re .31, th .26, pc .24, **op -.48**, **le -.33, am -.26**, **dc -.24**, **so -.20**

Appendix 1. Sample item statements

(fo) FOCUSED ACHIEVEMENT

I like jobs where quality is never compromised because of pressing deadlines.
I always want to work thoroughly, even if it wasn't necessary.
I like the kind of work that allows to concentrate on particular matters.

(co) COMPETITIVE ACHIEVEMENT

I strive for top results in everything I do.
In my ideal job I would compete against my own performance and that of others'.
I want to win, and I hate losing.

(le) LEADERSHIP

I like to give orders and get things going.
In the company of another person, I usually make the decisions.
I am very demanding towards others.

(is) INSPIRATION

I'd much rather work in a well-known organization than an unknown one.
What impression I make on other people is usually important to me.
I want to be noticed when I am with other people.

(so) SOCIABILITY

I'd never want to miss an opportunity to be with other people.
I make friends easily; I quickly feel at home even in the company of strangers.
I always prefer to work with other people rather than by myself.

(em) EMPATHY

I am happy to put my own things aside to do someone else a favor.
I am always willing to give and lend my things to people who need them more than I do.
In my ideal job, I would work for the benefit of other people.

I carefully sound out others' opinions before I can make a decision.
I find it natural to follow stronger individuals.
I often ask other people for advice

(re) RELIANCE

.

(or) ORIENTATION

I am more interested in ideas than facts.
I get the most peculiar ideas.
I'm more of a radical innovator than a stable builder.

(pc) PERCEPTION

I enjoy interpreting complex and difficult concepts.
Theories help me enormously to understand things.
I often question the usefulness of traditional ways of thinking and doing things.

(th) THINKING

I let feelings influence my decision making a great deal.
When I start doing something, I don't often know what the end result will look like.
My thinking is very organized and logical. (R)

(dc) DECISION MAKING

I am able to get many projects going at the same time because I don't plan too much ahead.
I usually make my decisions quickly, without delay.
I enjoy taking risks.

(am) AMBIGUITY-CHANGE

I don't like unexpected situations.
It bothers me if my duties at work are unclear.
I prefer changes to happen gradually.

(op) OPTIMISM

I usually succeed in everything I do.
I am always full of energy.
I always look at the positive side of things.

(sr) SELF-REFLECTION

I never try to cover up my mistakes.
I never cause inconvenience to my colleagues at work.
I can always make the right decisions, even in difficult situations.

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WOPI tool box

TR - Team roles	LR - Leaderhip roles
Team leader	Direction setter
Controller	Administrator
Collaborator	Participator
Specialist	Coach
Idea generator	Change agent

WOPI
WOPI360
WOPI-C

CS - Coping styles	LS - Learning styles
Direct action	Experiencing
Interaction	Observing
Planning	Conceptualizing
Detachment	Doing
Focus on self	

WOPI - Standardized questionnaire for assessment and coaching of competency drivers.
WOPI360 - Questionnaire for appraisal of managers' and non-managers' competencies.
WOPI-C - Questionnaire for appraisal of organization's competence culture.

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