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Norwegian Validation Addendum

to Everything DiSC® Research Report for ***Everything DiSC Work of Leaders***® Assessment

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Norwegian Validation: *Everything DiSC Work of Leaders®*

The purpose of this **addendum** is to expand the *Everything DiSC® Research Report for Adaptive Testing Assessment* by Wiley (2012), with validation results from research conducted on the Norwegian Everything DiSC Work of Leaders® assessment. Included in this addendum are descriptions of the translation and validation of the Norwegian Work of Leaders scale items. For information about the background and research on Everything DiSC and the circumplex representation of the DiSC® model, including information about the validation process, please consult the ***Everything DiSC Research Report for Adaptive Testing Assessment*** (hereafter referred to as the AT Research Report).

Description of the Norwegian Validation of *Work of Leaders*

Sample

A total of 397 Norwegian speaking men (51.1%) and women (48.9%) responded to a total of 92 items. The majority of the participants lived in Norway (N=394). The demographics of the sample are shown in Table 1.

Table 1. Everything DiSC Assessment Development Norwegian Sample Demographics

Gender	Male	51.1%
	Female	48.9%
Age	18–25	2.3%
	26–30	4.8%
	31–35	8.3%
	36–40	13.9%
	41–45	20.9%
	46–50	18.4%
	51–55	14.6%
	56–60	11.1%
	61+	5.8%
Education	Skolegang til og med 16 år	2.5%
	Skolegang før høyskole/universitet eller introduksjon på arbeidsmarkedet	5.8%
	Universitet/høyskole eller videreutdanning (post-graduate)	84.9%
	Yrkesopplæring/fagutdannelse	6.8%

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Employment	Employees (not lead)	4.5%
	Low-level manager	9.6%
	Mid-level manager	49.4%
	Top-level manager	26.2%
	Self-employed	6.8%
	Student / apprentice / trainee	1.8%
	Other	1.7%
Citizenship	Midt-Norge	56.9%
	Østlandet	22.2%
	Vestlandet	14.9%
	Nord-Norge	3.5%
	Sørlandet	1.8%
	Brasil	0.5%
	Danmark	0.3%
Industry	Offentlig sektor	29.7%
	Servicenæring	16.9%
	Bank/finans/forsikring/eiendom	10.8%
	Energi, olje og gass	8.8%
	IKT – IT, kommunikasjon, telekommunikasjon	4.8%
	Samferdsel	2.3%
	Service innen energi, olje og gass	2.0%
	Handel	1.0%
	Salg	1.0%
	Other	22.7%

N=397

Translation of Items

The quality of the translation of the items was ensured through a six step process: 1) The items were translated by a professional translator from English (source language) to Norwegian (target language). It was a requirement that the translator's native language was the target language. 2) A second professional translator, also a native speaker of the target language, was tasked with back-translating the items from target language to source language. 3) The original items and the back-translated items were reviewed by two bilingual subject matter experts. 4) In situations where there were differences in meaning/connotations between the source and the back-translation this was fed back to the first translator. 5) The translator assessed the differences and, when appropriate, stated why an item should remain the same or substituted it with a more suitable item to

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match the meaning of the original English item. 6) In situations where extra input was needed to aid the translation, the development team was contacted to establish the intended meaning/connotation of an item.

The Norwegian Work of Leaders Assessment

The Norwegian Work of Leaders assessment is comprised of items consisting of two statements placed at opposite ends of a four-point continuum. Participants are instructed to choose the point on the continuum that best describes them. For instance, one continuum states: *When I present an idea, I speak spontaneously* on one end and *When I present an idea, I have my thoughts well prepared* on the other end of the continuum.

Reliability Measure: Internal Reliability for Norwegian Work of Leaders Scales

Analysis of internal consistency was performed on the Norwegian Work of Leaders items and is documented below. This analysis evaluates the degree of correlation among questions that profess to measure the same thing. That is, each of the 18 scales in the Work of Leaders is measured using a series of items. Researchers recognize that if all of the items on a given scale (e.g., Remaining Open scale) are in fact measuring the same thing (e.g. Openness), they should all correlate with each other to some degree. In other words, all of the items on a scale should be consistent with each other. A statistic called Cronbach´s Alpha is usually regarded as the best method for evaluating internal consistency. This analysis was performed on the Norwegian data to ensure that the construct developed and tested on a US population could be adapted to a Norwegian population using the translated items and the Norwegian group.

Cronbach´s Alpha expresses the degree of consistency as a specific number, which typically varies between 0 and 1. If the value of Alpha is 0 then there is no relationship among the items/statements that have been grouped as a scale. On the other hand, if all the statements in an assessment measure in an identical fashion, then the value of Alpha will be 1.0, which indicates absolute internal consistency. Cronbach´s Alpha is calculated separately for each of the assessment´s 18 Work of Leaders scales.

The following guidelines are frequently used to evaluate the quality of a scale´s internal reliability: Alpha values above .70 are generally considered acceptable and satisfactory. Alpha values above .80 are usually considered quite good, and values above .90 are considered to reflect exceptional internal consistency. In fact, Alpha values that are too high may indicate that the items on a scale are redundant or too similar, suggesting that the respondent is asked to respond to the same thing many times repeatedly, not providing any new information about the respondent.

Alpha coefficients were calculated for the Norwegian sample (N=397). The Norwegian Work of Leaders assessment demonstrate good to excellent internal consistency, as shown by the Alpha values listed in Table 2.

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All reliabilities are above .70, with a median of .853. These results suggest that the items selected for each of the 18 Norwegian Work of Leaders scales are appropriate to use for measuring a unified construct.

Table 2. Internal Reliability for Norwegian Work of Leaders

WOL Scale	Cronbach´s Alpha	Number of items
Remaining Open	.881	16
Prioritizing the Big Picture	.843	11
Being Adventurous	.856	10
Speaking Out	.857	15
Seeking Counsel	.642	5
Exploring Implications	.850	7
Explaining Rationale	.842	6
Structuring Messages	.764	6
Exchanging Perspectives	.789	12
Being Receptive	.870	26
Being Expressive	.858	11
Being Encouraging	.805	12
Being Driven	.856	19
Initiating Acton	.889	12
Providing a Plan	.869	11
Analyzing In-Depth	.782	8
Addressing Problems	.871	21
Offering Praise	.821	14

Construct Validity: Scale Intercorrelations for Norwegian *Work of Leaders*

As part of examining the construct validity of the *Work of Leaders*, intercorrelations among the 18 scales (Table 3) were performed to test if hypothesized relationships between the scales were supported by Norwegian data. Coefficients for the 18 scales range from -.90 to .89, and many of the stronger correlations are the result of overlapping items among the scale. For instance, the Seeking Counsel scale, which measures a tendency to consult with others when making decisions, has many items in common with the Exchanging Perspectives scale, which measures a tendency to discuss with others before making decisions and these two scales are therefore expected to be somewhat correlated with each other (r =.49). Overall, correlations are as expected. For instance, we would expect a high positive correlation between the Speaking Out scale and the Addressing Problems scale, and a high negative correlation between the Providing a Plan scale and the Remaining Open scale. As you can see in Table 3, these patterns are supported by the Norwegian data.

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Table 3. Intercorrelations Norwegian Work of Leaders

Remaining Open	Prioritizing Big Picture	Being Adventurous	Speaking Out	Seeking Counsel	Exploring Implications	Explaining Rationale	Structuring Messages	Exchanging Perspectives	Being Receptive	Being Expressive	Being Encouraging	Being Driven	Initiating Action	Providing a Plan	Analyzing In-Depth	Addressing Problems	Offering Praise	
	.72	.50	.48	-.05	-.54	-.51	-.50	.00	.03	.38	.33	.14	.53	-.90	-.32	.08	.25	Remaining Open
		.50	.45	-.08	-.54	-.30	-.24	-.04	-.12	.30	.21	.25	.54	-.73	-.11	.20	.11	Prioritizing Big Picture
			.61	-.15	-.47	-.24	-.22	-.10	-.21	.45	.26	.62	.89	-.45	-.22	.36	.07	Being Adventurous
				-.07	-.51	-.35	-.38	-.08	-.30	.88	.33	.60	.70	-.47	-.29	.53	.12	Speaking Out
					.14	-.03	.03	.49	.40	.05	.21	-.32	-.13	.05	.00	-.35	.30	Seeking Counsel
						.48	.56	.15	.13	-.42	-.23	-.35	-.50	.70	.66	-.25	-.05	Exploring Implications
							.58	-.23	-.26	-.42	-.51	-.05	-.27	.50	.63	.13	-.41	Explaining Rationale
								.06	.01	-.38	-.17	-.09	-.25	.58	.49	-.07	-.06	Structuring Messages
									.62	.06	.46	-.28	-.13	.06	-.02	-.44	.53	Exchanging Perspectives
										-.05	.59	-.59	-.25	.03	-.14	-.90	.71	Being Receptive
											.47	.44	.58	-.36	-.35	.26	.29	Being Expressive
												-.03	.26	-.27	-.36	-.34	.84	Being Encouraging
													.67	-.15	-.12	.73	-.21	Being Driven
														-.46	-.24	.41	.10	Initiating Action
															.40	-.13	-.17	Providing a Plan
																.04	-.25	Analyzing In-Depth
																	-.52	Addressing Problems
																		Offering Praise

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Work of Leaders Priorities

The Norwegian Work of Leaders assessment demonstrate good internal consistency of the leadership priority scales, as shown by the Alpha values listed in Table 4. The median alpha was .823 and the values ranged from .751 to .862.

Table 4. Internal Reliability of the Work of Leaders Priority Scales

Priority	Cronbach's Alpha	Number of Items
Pioneering	.856	10
Energizing	.839	12
Affirming	.776	12
Inclusive	.751	5
Humble	.745	6
Deliberate	.858	11
Resolute	.807	6
Commanding	.862	14

N = 397

Summary

Analysis of data collected on the Norwegian version of the Everything DiSC Work of Leaders® assessment using Norwegian participants indicates that the development and translation of the assessment was successful. The Norwegian assessment shows acceptable to high reliability measures on each of the 18 scales and correlations between the different scales showing similar patterns as those found in the English version of *Work of Leaders*.

- The reliability of the instrument on the 18 scales of the *Work of Leaders* demonstrates good to excellent internal consistency. All reliabilities are above .70, with a median of .853.

- The reliability of the instrument on the 18 scales of the *Work of Leaders*, indicated by internal consistency present intercorrelations that range from -.90 to .89, supports the hypothesized relationships.

- The reliability of the instrument on the 8 priority scales of the Work of Leaders demonstrates good internal consistency. All reliabilities are above .70, with a median of .823.

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