



An Analysis of the Hebrew Translation of the OLIW-S to Assess Adult Playfulness

Psychometric Properties, Factorial Validity, and Measurement Invariance With the German Version

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Abstract: Adult playfulness is an individual difference variable that receives increasing interest. A multifaceted model of playfulness distinguishes between Other-directed, Lighthearted, Intellectual, and Whimsical playfulness. A 12-item brief version to assess these four facets with three items each, the OLIW-S, has been introduced in German. In this study, we investigate the psychometric properties of the Hebrew translation of the OLIW-S in an Israeli sample ($N = 298$). Our analyses of the item and scale parameters showed acceptable internal consistencies for short scales aimed for research purposes (α s and ω s between .53 and .80), item-total correlations, factorial validity, and metric measurement invariance with the original German language version (German sample, $N = 302$). Overall, our findings provide initial evidence for the psychometric qualities of the Hebrew translation of the OLIW-S, and analyses using the data from Germany replicate prior findings. We discuss future perspectives for extending the study of the reliability and validity of the Hebrew OLIW-S.

Keywords: adult playfulness, OLIW, OLIW-S, measurement invariance, Hebrew



Adult playfulness describes individual differences in the disposition to frame or reframe situations in a way such that they are experienced as intellectually stimulating, personally interesting, and/or entertaining (Proyer, 2017). There is increasing interest in the study of playfulness (Bittermann et al., 2021) as its role for life domains such as relationships (see Brauer, Proyer, & Chick, 2021, for an overview) and potential usages in clinical psychology have been highlighted (Rubinstein & Lahad, 2023). The OLIW model of playfulness in adults comprises four facets: Other-directed, Lighthearted, Intellectual, and Whimsical playfulness (Proyer, 2017). There are two instruments to assess the four facets: namely, the standard 28-item OLIW questionnaire (Proyer, 2017) and a 12-item short form (OLIW-S; Proyer et al., 2020). In the present study, we report the translation and adaptation of a Hebrew version

of the OLIW-S to assess the four facets of adult playfulness in a sample from Israel. We examined the psychometric properties of the Hebrew translation of the OLIW-S, its factorial validity, and measurement invariance with the German version.

Adult Playfulness and the OLIW Model

There is much debate in the literature about the basic components of adult playfulness. Differences refer to both, the number of factors, but also the content they cover. A lot of the existing models can be criticized for the lack of distinctiveness with other related traits. For example, many of the older models contain factors, such as creativity or creative playfulness or (sense of) humor (see Proyer & Brauer, 2023). While these are correlates of playfulness, more recent approaches have tried to delineate more clearly what constitutes playfulness. Of course, the idea that playfulness is not only of importance for children, but for adults, it is also not new; for example,

already Murray (1938) described the need for play as one of his basic human needs. It has been argued that playfulness can have important functions among adults, for example, a signal function in sexual selection, innovativeness at work, facilitating creativity, and experiencing sexuality (e.g., Brauer, Sendatzki, et al., 2021; Brauer, Friedemann, et al., 2023; Chick, 2001; Proyer, Tandler, & Brauer, 2019). More recently, the contribution of playfulness at work has begun to be examined. Concepts, such as playful work design, have shown that playfulness can be beneficial at work (e.g., Scharp et al., 2023).

Nevertheless, the measurement of adult playfulness has suffered from approaches that lack theoretical foundations and the usage of measures that were developed ad hoc and only used in one study without validity studies. Finally, only for a few of these measures, a documented thorough analysis of their psychometric properties exists, and in some cases, the findings are far from convincing (e.g., Glynn & Webster, 1992).

There is no consensus about how playfulness can be defined among adults, but recently Proyer (2017) suggested a revised definition of playfulness:

Playfulness is an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting. Those on the high end of this dimension seek and establish situations in which they can interact playfully with others (e.g., playful teasing, shared play activities) and they are capable of using their playfulness even under difficult situations to resolve tension (e.g., in social interactions, or in work-type settings). Playfulness is also associated with a preference for complexity rather than simplicity and a preference for – and liking of – unusual activities, objects and topics, or individuals (p. 114).

The model comprises four facets (OLIW-Model): Other-directed (O) playfulness covers playful social interactions, such as teasing others, and all forms of playful interactions among two or more people. Lighthearted playfulness (L) is characterized by a preference for improvisation, not liking to plan ahead, and generally speaking, seeing the lighter side of life rather than its darker aspects. Intellectual playfulness (I) describes a preference of complexity over simplicity, a dislike of repetitive and monotonous tasks, and liking to play things through in one's mind. Finally, Whimsical playfulness (W) is characterized by a preference for unusual and strange ideas, objects, persons, and activities. Those high in whimsical playfulness like to do unusual things, have interests outside of the mainstream, and, generally

speaking, are open to unconventional ideas. The model and self-report measures have been developed in Germany (Proyer, 2017; Proyer et al., 2020).

The definition presented earlier highlights the importance of distinguishing facets of playfulness. It is argued that playfulness can contribute to the daily life of adults in different ways. For example, in social exchange, when Other-directed playfulness helps managing social relationships (e.g., Brauer, Sendatzki, et al., 2021; Proyer, Brauer, et al., 2019; see Brauer, Proyer, & Chick, 2021, for an overview). Another example would be Intellectual playfulness, which should be particularly important in work contexts (e.g., facilitating innovative behavior or finding unusual and new problem-solving strategies). Applications of the model exist for adolescents (Proyer & Tandler, 2020) and younger children (Tandler & Proyer, 2022). The standard measure for the four facets is a questionnaire, which exists in a standard form and a short form (Proyer, 2017; Proyer et al., 2020).

The OLIW and OLIW-S Questionnaire

The standard OLIW questionnaire comprises 28 items that were developed multimethodologically analyzing lay peoples' perceptions about functions of playfulness, linguistic corpora analyses, and factor analyses of existing questionnaires (Proyer, 2017; for an overview, see Proyer & Brauer, 2023). The test development was aimed at using items, which (a) cover the full breadth of playfulness and (b) focus on the core of playfulness, rather than its *consequences* and correlates. The latter can be illustrated by discussing the difference between seeing sense of humor as part of playfulness in other models and whimsical playfulness in the OLIW model. Whimsical playfulness comprises the ability to make unusual observations or having unusual ideas and thoughts that *could* be used to generate humor or to experience humor, either for oneself or others. However, these observations could also be used differently, for example, for daydreaming or either cognitively or physically playing with ideas that are non-humorous. Hence, whimsical playfulness can lead to humorous outcomes, but not all whimsical playfulness must be humorous and vice versa: Not all humor must be playful (e.g., incongruity-resolution humor based on common stereotypes requires little to no playfulness).

The factorial validity of the OLIW questionnaire was examined with exploratory (EFA) and confirmatory factor analyses (CFA), showing good model fit (CFA: RMSEA = .066, CFI = .890, SRMR = .056). Furthermore, the convergent and nomological validity was high (e.g., correlations with other measures of playfulness and big five traits). Moreover, the scales converged well with diary data

on play activities and other behaviors (e.g., impulsivity or exhibitionism; aggregated across 14 days). Proyer (2017) also reported robust self-peer agreement supporting the validity of the scales. The latter has been replicated and extended in studies testing the interpersonal perception of the four facets at different degrees of acquaintanceship and extending the research to additionally including inter-rater agreement, which was also robust for all scales, as well as showing measurement invariance between self-reports and peer reports (Brauer et al., 2023a; Proyer & Brauer, 2018). When testing the reliability, Proyer reported α coefficients between .66 and .78, showing that there is low redundancy between items and each scale aiming to cover the breadth of the construct. Additionally, Proyer assessed the test-retest reliability with a 12-item brief form of the OLIW across 1-week, 2-week, 1-month, and 3-month intervals and found strong correlations (all 3-month correlations \geq .67). The 12 items were selected on the basis of their content, their corrected item-total correlations (CITC), and factor loadings. The OLIW questionnaire has been used in several countries outside of Germany, such as Australia, Brazil, the United States, and the United Kingdom using English and Portuguese language versions (e.g., Clifford et al., 2022; de Moraes et al., 2021; Farley et al. 2021). Studies testing the factorial structure and item and scale properties in item response theory analyses supported the psychometric soundness of the instrument (Brauer et al., 2023a; Clifford et al., 2022; Davis & Boone, 2021; Farley et al., 2021; Proyer, 2017).

Proyer et al. (2020) further examined the 12-item short form (OLIW-S) that was introduced in Proyer's (2017) original study of the retest stability of the standard measure in four independently collected German-speaking samples. Across all samples, they found satisfying model fit in CFAs with RMSEAs between .06 and .08. The internal consistencies were as expected for short scales (cf. Ziegler et al., 2014), with α s between .54 (Intellectual) and .76 (Whimsical), and McDonald's ω between .53 (Intellectual) and .76 (Lighthearted and Whimsical; see also Ziegler et al., 2014, for a discussion of internal consistency estimates in short scales). Also, they replicated associations with the big five personality traits and extended the findings to pathological personality traits (Krueger et al., 2011). Overall, the findings of Proyer and colleagues support the reliability and validity of the OLIW-S scores and allow to assess fine-grained facets of adult playfulness in large-scale studies that are limited in using full-scale personality assessment instruments (e.g., repeated assessments in longitudinal studies or research of interpersonal perception where few observers rate many target persons). The OLIW-S has been used in a randomized placebo-control study examining whether playfulness can be stimulated with short daily tasks (e.g., counting

playfulness experiences during the day) and sensitivity to change (Proyer et al., 2021).

The Present Study

In the present study, we examined a Hebrew translation of the OLIW-S regarding its psychometric properties and factorial validity by means of CFA and testing the invariance of the measurement model with the German language version. Therefore, we analyzed data of a sample from Israel who completed the Hebrew translation of the OLIW-S and a German-speaking sample who completed the original German version. We expected to find the same structural properties (four factors representing the OLIW scales; Proyer, 2017) in the Hebrew version with regard to the number of factors (configural invariance) and the item-factor loadings (metric invariance). To our knowledge, this was the first study examining the OLIW facets in Israel, and we cannot derive assumptions about the invariance in item intercepts. Finally, we expected to replicate the findings regarding the internal consistencies in the German-speaking sample and to find similar reliability estimates for the Hebrew version.

Method

Participants and Procedure

The Israeli sample comprised 298 participants between the age of 18 and 85 years ($M = 44.0$, $SD = 17.2$). The majority (87.2%) were women. The educational level was high according to the highest level of education, with 61.2% holding a university degree (bachelor's, master's, or PhD), 20.1% having completed vocational training, 18.5% having completed high school, and one participant having finished elementary school. The sample was heterogeneous with regard to area of residence in Israel (see ESM for a breakdown). The majority considered themselves as secular (72.8%), whereas 13.1% identified themselves as *traditional*, 10.4% described themselves as *religious*, 3.0% as *other*, and 0.7% as *ultra-orthodox*.

The participants were recruited through a Facebook campaign during three consecutive weeks, and the data were finally collected at the end of January 2023. The inclusion criterion for participant selection was based on age, with a requirement for individuals to be over 18 years. All participants provided informed consent voluntarily, demonstrating their willingness to partake in the study, and completed an informed consent agreement prior to commencing the questionnaire phase. There was no

financial compensation for participants. This study received ethical approval from the Institutional Review Board (#13-6/2022) at Tel-Hai College, Kiryat Shemona, Israel.

The German sample consisted of 302 participants between the ages of 18 and 68 years ($M = 25.6$, $SD = 8.0$). Most participants were women (78.1%), and 1.3% did not indicate their gender. The educational status was high because the majority (60.6%) held a high school diploma qualifying them to attend university, 29.4% held a university degree, 7.0% completed vocational training, 1.3% held the regular high school diploma, and three participants held no educational degree.

We recruited participants through leaflets and flyers on-campus and our department website and advertised the study to examine personality traits. The data were collected online before the COVID-19 pandemic. The online questionnaire was hosted by <https://www.sosicurvey.de>. There was no financial compensation for participation in the study, but psychology students could earn course credit. The study was carried out in line with the ethical guidelines of the German Association of Psychology.

Instruments

Our participants completed the 12 items of the OLIW-S questionnaire (Proyer et al., 2020). Participants give their responses on a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*). The German-speaking sample completed the German language OLIW-S (Proyer et al., 2020), and Israeli participants completed the Hebrew version that was newly translated. The translation of the questionnaire involved a team of three researchers who employed the back-translation method and discussed the item wordings. The translation did not involve changes regarding the content of the items. The items of the OLIW-S in German and Hebrew languages are available in the ESM. In addition, participants of the German sample completed the Big Five Inventory-10 (Rammstedt & John, 2007), and Israeli participants completed the Fantastic Reality Ability Measurement (Rubinstein et al., 2021, 2023).

Data Analysis

We examined the measurement models of the OLIW-S by computing CFAs using the data of the German and Israeli samples. Therefore, we fitted a model containing four correlated factors with the item assignment for the four factors, as shown in Proyer et al. (2020). We used the WLSMV estimator to account for the ordinal nature of the response data generated by Likert-type rating scales

(Brauer, Ranger, et al., 2023). We evaluated the model fit with regard to RMSEA, CFI, TLI, and SRMR. Conventional rules suggest acceptable model fit when $RMSEA \leq .08$, CFI and $TLI \leq .95$, and $SRMR \leq .08$ (Hu & Bentler, 1999). However, note that these cutoffs have been criticized because they do not generalize to ordinal data, and estimation procedures such as WLSMV are particularly rarely met in multidimensional questionnaires of personality (Hopwood & Donnellan, 2010; Marsh et al., 2004). Also, the SRMR has been found to outperform RMSEA when analyzing categorical data and using samples with $n < 500$ (Shi et al., 2020). To our knowledge, no recommendations of dynamic cutoffs have been suggested for the study of ordinal data and use of the WLSMV estimator.

We computed a multigroup CFA to examine the measurement invariance between the responses from German and Israeli participants. Therefore, we examined three degrees of invariance: Configural invariance assumes that the number of factors is the same between groups, metric invariance additionally constrains the loadings to be equal between groups, and scalar invariance constrains the items' latent thresholds between response categories to be invariant across samples. We used Chen's (2007) recommendations for cutoffs when interpreting the change in model fit and rejected metric MI when $\Delta CFI \geq .01$ and $\Delta RMSEA \geq .015$ or $\Delta SRMR \geq .030$, and we rejected scalar MI when $\Delta CFI \geq .01$ and $\Delta RMSEA \geq .015$ or $\Delta SRMR \geq .010$.

We computed all factor analyses in Mplus 8 (Muthén & Muthén, 1998–2019). As estimates of internal consistency, we computed Cronbach's α and McDonald's ω (Dunn et al., 2014). We computed the latter analyses with the MBESS package (Kelley, 2017) in R. All data, syntaxes, and materials (including the Hebrew translation of the OLIW-S) are openly available at <https://osf.io/7xq3b/>.

Results

Confirmatory Factor Analyses

The inspection of the model fit parameters of the CFAs in the Israeli and German samples showed comparable findings. The model fit was $RMSEA = .103$, $CFI = .883$, $TLI = .839$, and $SRMR = .049$ in the Israeli sample and $RMSEA = .110$, $CFI = .893$, $TLI = .863$, and $SRMR = .051$ in the German sample. The loadings were statistically significant in both samples, and Table 1 presents an overview about ranges of the loadings for each facet and sample.

The scale intercorrelations between the four OLIW-S scales are reported in Table 2 and show the expected positive correlations in both samples. The coefficients are

Table 1. Descriptive statistics, factor loadings, and internal consistencies (α and ω) of the OLIW-S in an Israeli sample (Hebrew translation) and German sample (original German version)

	Israeli (<i>n</i> = 298)				German (<i>n</i> = 302)			
	Other-directed	Lighthearted	Intellectual	Whimsical	Other-directed	Lighthearted	Intellectual	Whimsical
<i>M</i>	4.65	4.41	4.35	4.63	4.55	4.18	4.09	4.37
<i>SD</i>	0.97	1.00	0.92	1.07	1.26	1.12	1.13	1.25
<i>SK</i>	-0.11	0.10	-0.03	0.11	-0.24	-0.09	0.02	-0.19
<i>K</i>	-0.17	0.55	0.25	-0.22	-0.35	-0.20	-0.37	-0.36
<i>CITC</i>	[.26, .43]	[.41, .47]	[.31, .36]	[.49, .57]	[.39, .49]	[.44, .56]	[.41, .46]	[.59, .67]
λ	[.51, .62]	[.53, .67]	[.33, .89]	[.65, .79]	[.52, .75]	[.49, .91]	[.58, .69]	[.73, .81]
α	.53	.63	.53	.70	.62	.68	.63	.79
ω	.59	.64	.53	.70	.63	.69	.63	.80
<i>r</i> _{Gender}	.20***	.01	.12*	.10	-.03	-.14*	-.05	-.05
<i>r</i> _{Age}	-.20***	.03	-.09	-.03	-.10	.09	.03	.03

Note. *SK* = skewness. *K* = kurtosis. *CITC* = corrected item-total correlation. λ = standardized factor loading.

* $p < .01$. *** $p < .001$. Two-tailed.

Table 2. Intercorrelations between the four OLIW-S scales (Hebrew version above diagonal and German version below diagonal)

	Other-directed	Lighthearted	Intellectual	Whimsical
Other-directed	—	.34	.36	.39
Lighthearted	.25	—	.31	.41
Intellectual	.31	.26	—	.26
Whimsical	.34	.23	.34	—

Note. *n* = 298 (Israeli sample) and 302 (German sample).

similar to prior findings of the full version of the OLIW (Proyer, 2017).

Measurement Invariance Between the Hebrew and German Versions

Table 3 presents the fit indexes and the change in model fit. While we did not find evidence against the assumption of metric invariance (ΔCFI and $\Delta RMSEA \leq 0.01$), the fit indexes worsened when constraining the item intercepts to be equal among the German and Israeli samples ($\Delta CFI = 0.107$ and $\Delta RMSEA = 0.015$). Thus, we rejected scalar

invariance. While the factor loadings are invariant across samples, Israeli and German participants differed regarding their item intercepts and latent means. The inspection of mean differences shows that effect sizes of differences are of small size, namely, Hedges $g = 0.09$ (Other-directed), 0.22 (Lighthearted), 0.25 (Intellectual), and 0.22 (Whimsical).

Psychometric Properties

Table 1 presents the descriptive statistics, CITCs, and internal consistencies of the OLIW-S for the German and

Table 3. Measurement invariance analysis for Israeli (*n* = 298) and German (*n* = 302) samples in the OLIW-S four-factor model

	Model fit			Model comparisons	
	Configural (I)	Metric (II)	Scalar (III)	I versus II	II versus III
<i>RMSEA</i>	.106	.098	.113	.008	.015
90% CI	[.096, .117]	[.088, .108]	[.105, .121]	—	—
<i>CFI</i>	.889	.898	.791	.009	.107
<i>SRMR</i>	.050	.050	.059	.000	.009
χ^2	421.50	401.22	770.32	9.52 ^a	399.93 ^b
<i>df</i> (χ^2)	180	172	116	8	56

Note. ^a $p = .301$. ^b $p < .001$.

Israeli samples. We found that the findings from the German-speaking sample are comparable to those reported in Proyer et al.'s (2020) initial data on the development of the OLIW-S. When inspecting the descriptive statistics of the Israeli sample, we found that their mean scores in Lighthearted and Whimsical playfulness were slightly elevated in comparison to German-speaking participants from the present study (Hedges' $g = 0.21$ and 0.22) and earlier findings (Proyer et al., 2020, 2021), but effect sizes were negligible. Furthermore, the response score distributions were similar to German samples, with no robust deviation from the normal distribution (all skewness and kurtosis coefficients ≤ 0.55).

Our inspection of the CITCs showed that the German sample replicated prior findings, with coefficients between .39 and .67. In the Israeli sample, the CITCs exceeded .31 for all OLIW-S items, with the exception of Item 11 (Other-directed; "I can express my feelings to my partner in a playful manner"). This item yielded an item-total correlation of .26 for the manifest scores, but the loading from the CFA indicated a robust relation between the item and the latent Other-directed factor ($\lambda = .52$).

The analyses of internal consistencies (see Table 2) showed overall satisfying and good reliability estimates considering the low number of items and low redundancy between item content (see Ziegler et al., 2014, for a discussion). Both samples showed coefficients that were in line with prior studies (Proyer et al., 2020, 2021). One finding should be highlighted: There is a numerical discrepancy between the α and ω estimates for the Other-directed scale. This fits into the previously discussed finding of Item 11 showing a comparatively low CITC, but high factor loading because the coefficient α is computed on the basis of the observed responses, whereas ω is estimated from the factor loadings. This might explain why the α value is numerically lower than ω in this case. In comparison, the remaining coefficients align well with the literature (Proyer et al., 2020, 2021).

Finally, correlations with age and gender showed negligible associations, except for Other-directed in the Israeli sample ($r = -.20, p < .001$), which replicates findings from the literature (e.g., Proyer, 2017; Proyer et al., 2020, 2021). Also, men yielded slightly higher scores than women in Other-directed playfulness (Hedges' $g = 0.61$) in the Israeli sample.

Discussion

We examined the Hebrew translation of a short measure to assess four facets of adult playfulness (OLIW-S; Proyer et al., 2020) regarding its psychometric properties,

factorial structure, and measurement invariance with responses from German-speaking participants. First, the CFA showed comparable model fit concerning the CFI, TLI, and SRMR values as in prior research on the full and brief versions of the OLIW questionnaire (Brauer et al., 2023a; Proyer, 2017; Proyer et al., 2020), but here the RMSEA yielded numerically higher values than previously found. As noted, it has been shown that the SRMR outperforms the RMSEA index when analyzing categorical data (Shi et al., 2020) and considering that all loadings were robust, we accept the assumed measurement model of four correlated factors. An ongoing debate on whether Hu and Bentler's (1999) cutoff values can be applied to the analysis of noncontinuous data favors the notion that the decision rules should not be applied for this type of data and that these are rarely met in factor models of multi-dimensional personality questionnaires (e.g., Hopwood & Donnellan, 2010; Marsh et al., 2004).

The scale intercorrelations were comparable across samples and in line with previous findings (e.g., Proyer et al., 2020). Moreover, we conducted measurement invariance analysis between responses to the Hebrew and German versions of the OLIW-S and found evidence for metric invariance. Hence, the number of factors and the factor loadings are equal across versions, but item thresholds differ, which suggests that the meaning of the items and their assignment to the four OLIW factors are invariant across the language versions (Chen, 2007). Thus, our findings support the notion that the scores of the German and Hebrew OLIW-S versions can be compared without psychometric artifacts, for example, for questions of cross-cultural comparisons in expressions of Other-directed, Lighthearted, Intellectual, and Whimsical playfulness. The current study suggests that there are only minor- to medium-sized effect sizes when it comes to mean differences in the facets of playfulness between German and Israeli participants and provide further evidence on the notion that the assumed structure of individual differences in adult playfulness is also to be found in non-German-speaking samples (cf. Davis & Boone, 2021). Given that there is only limited understanding of cross-cultural research in playfulness (e.g., Barnett, 2017; Pang & Proyer, 2018; Shen et al., 2021), more research in this area is encouraged for a better understanding of how playfulness is expressed (e.g., verbally and nonverbally), valued, or even fostered in different cultures. For the future, such studies could also be helpful for continued research on culturally appropriate assessments and interventions across different cultural contexts. Eventually, studying, embracing, and highlighting cultural diversity in playfulness can foster a more inclusive society that appreciates and celebrates different forms of play and playfulness.

We estimated the internal consistencies based on Cronbach's α and McDonald's ω . Overall, the coefficients converged well in showing the expected values previously reported for the OLIW questionnaire and its brief form (e.g., Proyer, 2017; Proyer et al., 2020; see also Brauer et al., 2023a). As discussed with regard to short scales (Ziegler et al., 2014), the internal consistency is lower than that in longer versions. One finding that must be highlighted is that ω of Other-directed was numerically lower than the α reliability estimate. This might be based on the factor loading of Item 11, which showed a robust yet comparatively lower coefficient. Considering that ω is estimated on the basis of factor loadings can explain the slightly lower internal consistency estimate in comparison to α (Dunn et al., 2014). Since the CITC and loading of Item 11 were robust and invariant with the German comparison sample, discussion of this finding awaits replication in future research.

Taking the findings on the internal consistency into account, it must be highlighted that the OLIW-S is not recommended for individual assessments, but for research purposes or when having limited testing time and the full 28-item OLIW questionnaire (Proyer, 2017) cannot be administered. The present study has only evaluated the internal consistency as measures of reliability, but McCrae et al. (2011) showed that test-retest stability and inter-rater agreement are more important estimates of reliability than internal consistency. Prior research has provided evidence for the robust test-retest correlations for the (German) OLIW-S for up to 3-month intervals (Proyer et al., 2020), and recently, the inter-rater agreement among six judges who provided ratings of 160 target persons showed robust intraclass correlation coefficients between .71 and .78 (Brauer et al., 2023b). Taking these promising findings into consideration, we are optimistic that findings for the Hebrew translation will be comparable. However, it is desirable that future research replicates these findings to extend the knowledge on the reliability beyond internal consistencies for data that were not collected in German-speaking countries.

Associations with age and gender were negligible, except for higher Other-directed playfulness in younger participants and men. The age association is in accordance with prior work showing negative correlations with age in the same size (e.g., Proyer, 2017; Proyer et al., 2020). Considering the imbalanced gender ratio, the gender effect of medium size might not be overinterpreted and awaits replication. It must be noted that our samples differed regarding the average age of participants, with the Israeli participants being older than the German participants. Considering that the literature and our present findings do not suggest robust changes with age and the stability of findings across age (see, e.g., Brauer, Sendatzki,

et al., 2021; Proyer, 2014, 2017; Proyer, Brauer, et al., 2019), we assume that our findings can be interpreted well.

Prior research has shown that some personality traits are connected to country-level characteristics, such as individualism versus collectivism (Hofstede, 2001), and there is initial evidence of cross-cultural differences when it comes to playfulness with regard to its meaning, structure, and consequences (e.g., Barnett, 2017). For example, Pang and Proyer (2018) noted that the concept of play is represented differently in mainland China than in Western countries (e.g., *play* is described by actual verbs such as *kicking football* instead of *playing football*). To our knowledge, research of the OLIW facets is currently limited to Western countries characterized by individualism (e.g., the United States, Germany, and Australia). Providing a Hebrew version of the OLIW-S extends the study of playfulness to Israel, which is characterized by both individualistic and collectivistic elements (Hofstede, 2001), and allows using the instrument for testing the cross-cultural replicability of earlier research. This is a first step for extending research of the OLIW facets in samples from the individualism – collectivism dimension.

Limitations

Our study has several limitations. As noted, the gender ratio in the Israeli sample was imbalanced and replication in more heterogeneous samples is desirable, as this would also allow examining the measurement invariance of the responses between men and women. However, we expect no robust differences with regard to gender in line with prior findings not suggesting that men and women (or participants identifying as nonbinary) differ. Furthermore, although the Israeli sample covered many regions within Israel, replication of the findings in broader representative Hebrew-speaking samples is desirable to generalize our findings. Also, our study only examined the psychometric characteristics and factorial validity of the Hebrew version of the OLIW-S, but more findings on the concurrent and discriminant validity is needed to expand the knowledge on the nomological validity of the Hebrew OLIW-S. Furthermore, prior findings on the strong inter-rater agreement and self-other agreement should be replicated with the Hebrew OLIW-S as tests of reliability and validity (Brauer et al., 2023a; Proyer & Brauer, 2018).

Conclusion

In conclusion, our study provides initial evidence that supports the use of the Hebrew translation of the OLIW-S from a psychometric perspective. We hope that our

findings stimulate further research on adult playfulness in Hebrew-speaking countries and allowing for an extension of the knowledge of adult playfulness in non-German-speaking countries (Barnett, 2017), for example, by replicating prior findings (e.g., creativity, mental and physical health, sexual preferences, and relationships; Brauer, Friedemann, et al., 2023; Brauer, Proyer, & Chick, 2021; Proyer et al., 2018; Proyer, Brauer, et al., 2019) and extending the study of playfulness toward new domains such as experiences and behaviors in the domain of work.

References

- Barnett, L. A. (2017). The inculcation of adult playfulness: From west to east. *International Journal of Play*, 6(3), 255–271. <https://doi.org/10.1080/21594937.2017.1383010>
- Bittermann, A., Batzdorfer, V., Müller, S. M., & Steinmetz, H. (2021). Mining Twitter to detect hotspots in psychology. *Zeitschrift für Psychologie*, 229(1), 3–14. <https://doi.org/10.1027/2151-2604/a000437>
- Brauer, K., Friedemann, S. F., Chick, G., & Proyer, R. T. (2023). "Play with me, darling!" Testing the associations between adult playfulness and indicators of sexuality. *The Journal of Sex Research*, 60(4), 522–534. <https://doi.org/10.1080/00224499.2022.2077289>
- Brauer, K., Proyer, R. T., & Chick, G. (2021). Adult playfulness: An update on an understudied individual differences variable and its role in romantic life. *Social and Personality Psychology Compass*, 15(4), Article e12589. <https://doi.org/10.1111/spc3.12589>
- Brauer, K., Proyer, R., Rubinstein, D., & Lahad, M. (2023). *Hebrew translation of the OLIW-S* [Open data and materials]. <https://osf.io/7xq3b/>
- Brauer, K., Ranger, M., & Ziegler, M. (2023). Confirmatory factor analyses in Psychological Test Adaptation and Development: A non-technical discussion of the WLSMV estimator. *Psychological Test Adaptation and Development*, 4(1), 4–12. <https://doi.org/10.1027/2698-1866/a000034>
- Brauer, K., Sendatzki, R., & Proyer, R. T. (2023a). Exploring the acquaintanceship effect for the accuracy of judgments of traits and profiles of adult playfulness. *Journal of Personality*. Advance online publication. <https://doi.org/10.1111/jopy.12839>
- Brauer, K., Sendatzki, R., & Proyer, R. T. (2023b). *Replicating and extending findings on the interpersonal perception of adult playfulness at zero-acquaintance: A study of self-other agreement, consensus, and two accuracy criteria* [Manuscript in preparation]. Martin Luther University Halle-Wittenberg.
- Brauer, K., Sendatzki, R., Scherrer, T., Chick, G., & Proyer, R. T. (2021). Revisiting adult playfulness and relationship satisfaction: APIM analyses of middle-aged and older couples. *International Journal of Applied Positive Psychology*. Advance online publication. <https://doi.org/10.1007/s41042-021-00058-8>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling*, 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Chick, G. (2001). What is play for? Sexual selection and the evolution of play. *Play and Culture Studies*, 3, 3–25.
- Clifford, C., Paulk, E., Lin, Q., Cadwallader, J., Lubbers, K., & Frazier, L. D. (2022). Relationships among adult playfulness, stress, and coping during the COVID-19 pandemic. *Current Psychology*. Advance online publication. <https://doi.org/10.1007/s12144-022-02870-0>
- Davis, D. R., & Boone, W. (2021). Using Rasch analysis to evaluate the psychometric functioning of the other-directed, light-hearted, intellectual, and whimsical (OLIW) adult playfulness scale. *International Journal of Educational Research Open*, 2, Article 100054. <https://doi.org/10.1016/j.ijedro.2021.100054>
- de Moraes, Y. L., Varella, M. A. C., da Silva, C. S. A., & Valentova, J. V. (2021). Adult playful individuals have more long-and short-term relationships. *Evolutionary Human Sciences*, 3, Article e24. <https://doi.org/10.1017/ehs.2021.19>
- Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. <https://doi.org/10.1111/bjop.12046>
- Farley, A., Kennedy-Behr, A., & Brown, T. (2021). An investigation into the relationship between playfulness and well-being in Australian adults: An exploratory study. *OTJR: Occupation, Participation and Health*, 41(1), 56–64. <https://doi.org/10.1177/1539449220945311>
- Glynn, M. A., & Webster, J. (1992). The adult playfulness scale: An initial assessment. *Psychological Reports*, 71(1), 83–103. <https://doi.org/10.2466/pr0.1992.71.1.83>
- Hofstede, G. H. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (2nd ed.). Sage.
- Hopwood, C. J., & Donnellan, M. B. (2010). How should the internal structure of personality inventories be evaluated? *Personality and Social Psychology Review*, 14(3), 332–346. <https://doi.org/10.1177/1088868310361240>
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Kelley, K. (2017). *MBESS* (Version 4.0.0 and higher) [Computer software and manual]. <http://cran.r-project.org>
- Krueger, R. F., Eaton, N. R., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2011). Personality in the DSM-5: Helping delineating personality disorder content and framing the meta-structure. *Journal of Personality Assessment*, 93(1), 325–331. <https://doi.org/10.1080/00223891.2011.577478>
- Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2
- McCrae, R. R., Kurtz, J. E., Yamagata, S., & Terracciano, A. (2011). Internal consistency, retest reliability, and their implications for personality scale validity. *Personality and Social Psychology Review*, 15(1), 28–50. <https://doi.org/10.1177/1088868310366253>
- Murray, H. A. (1938). *Explorations in personality*. Oxford University Press.
- Muthén, L. K., & Muthén, B. O. (1998–2019). *Mplus 8 user's guide*.
- Pang, D., & Proyer, R. T. (2018). An initial cross-cultural comparison of adult playfulness in mainland China and German-speaking countries. *Frontiers in Psychology*, 9, Article 421. <https://doi.org/10.3389/fpsyg.2018.00421>
- Proyer, R. T. (2014). Playfulness over the lifespan and its relation to happiness: Results from an online survey. *Zeitschrift für Gerontologie und Geriatrie*, 47(6), 508–512. <https://doi.org/10.1007/s00391-013-0539-z>
- Proyer, R. T. (2017). A new structural model for the study of adult playfulness: Assessment and exploration of an understudied individual differences variable. *Personality and Individual Differences*, 108, 113–122. <https://doi.org/10.1016/j.paid.2016.12.011>
- Proyer, R. T., & Brauer, K. (2018). Exploring adult playfulness: Examining the accuracy of personality judgments at zero-acquaintance and an LIWC analysis of textual information.

- Journal of Research in Personality*, 73, 12–20. <https://doi.org/10.1016/j.jrp.2017.10.002>
- Proyer, R. T., & Brauer, K. (2023). Assessment of playfulness: Current challenges and overview. In W. Ruch, A. B. Bakker, L. Tay, & F. Gander (Eds.), *Psychological assessment—Science and practice: Handbook of positive psychology assessment* (pp. 145–161). Hogrefe.
- Proyer, R. T., Brauer, K., & Wolf, A. (2020). Assessing other-directed, lighthearted, intellectual, and whimsical playfulness in adults: Development and initial validation of the OLIW-S using self- and peer-ratings. *European Journal of Psychological Assessment*, 36(4), 624–634. <https://doi.org/10.1027/1015-5759/a000531>
- Proyer, R. T., Brauer, K., Wolf, A., & Chick, G. (2019). Adult playfulness and relationship satisfaction: An APIM analysis of romantic couples. *Journal of Research in Personality*, 79, 40–48. <https://doi.org/10.1016/j.jrp.2019.02.001>
- Proyer, R. T., Gander, F., Bertenshaw, E. J., & Brauer, K. (2018). The positive relationships of playfulness with indicators of health, activity, and physical fitness. *Frontiers in Psychology*, 9, Article 1440. <https://doi.org/10.3389/fpsyg.2018.01440>
- Proyer, R. T., Gander, F., Brauer, K., & Chick, G. (2021). Can playfulness be stimulated? A randomised placebo-controlled online playfulness intervention study on effects on trait playfulness, well-being, and depression. *Applied Psychology: Health and Well-Being*, 13(1), 129–151. <https://doi.org/10.1111/aphw.12220>
- Proyer, R. T., & Tandler, N. (2020). An update on the study of playfulness in adolescents: Its relationship with academic performance, well-being, anxiety, and roles in bullying-type-situations. *Social Psychology of Education*, 23(1), 73–99. <https://doi.org/10.1007/s11218-019-09526-1>
- Proyer, R. T., Tandler, N., & Brauer, K. (2019). Playfulness and creativity: A selective review. In S. R. Luria, J. Baer, & J. C. Kaufman (Eds.), *Creativity and humor* (pp. 43–60). Elsevier. <https://doi.org/10.1016/B978-0-12-813802-1.00002-8>
- Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41(1), 203–212. <https://doi.org/10.1016/j.jrp.2006.02.001>
- Rubinstein, D., & Lahad, M. (2023). Fantastic reality: The role of imagination, playfulness, and creativity in healing trauma. *Traumatology*, 29(2), 102–111. <https://doi.org/10.1037/trm0000376>
- Rubinstein, D., Lahad, M., Leykin, D., & Aharonson-Daniel, L. (2021). Development and validation of Fantastic Reality Ability Measurement (FRAME) to measure use of imagination in response to stress and trauma. *Journal of Creativity in Mental Health*, 16(4), 412–427. <https://doi.org/10.1080/15401383.2020.1789017>
- Rubinstein, D., O'Rourke, N., & Lahad, M. (2023). Using imagination in response to stress and uncertainty in the time of COVID-19: Further validation of the Fantastic Reality Ability Measurement (FRAME) scale. *Frontiers in Psychology*, 14, Article 1115233. <https://doi.org/10.3389/fpsyg.2023.1115233>
- Schäp, Y. S., Bakker, A. B., Breevaart, K., Kruup, K., & Uusberg, A. (2023). Playful work design: Conceptualization, measurement, and validity. *Human Relations*, 76(4), 509–550. <https://doi.org/10.1177/00187267211070996>
- Shen, X., Liu, H., & Song, R. (2021). Toward a culture-sensitive approach to playfulness research: Development of the Adult Playfulness Trait Scale-Chinese version and an alternative measurement model. *Journal of Leisure Research*, 52(4), 401–423. <https://doi.org/10.1080/00222216.2020.1850193>
- Shi, D., Maydeu-Olivares, A., & Rosseel, Y. (2020). Assessing fit in ordinal factor analysis models: SRMR vs. RMSEA. *Structural Equation Modeling*, 27(1), 1–15. <https://doi.org/10.1080/10705511.2019.1611434>
- Tandler, N., & Proyer, R. T. (2022). Deriving information on play and playfulness of 3-to-5-year-olds from short written descriptions: Analyzing the frequency of usage of indicators of playfulness and their associations with maternal playfulness. *Behavioral Sciences*, 12, Article 385. <https://doi.org/10.3390/bs12100385>
- Ziegler, M., Kemper, C. J., & Kruey, P. (2014). Short scales—five misunderstandings and ways to overcome them. *Journal of Individual Differences*, 35(4), 185–189. <https://doi.org/10.1027/1614-0001/a000148>

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Open Science

Open Data: The information needed to reproduce all of the reported results is available at <https://osf.io/7xq3b/> (Brauer, Proyer et al., 2023).

Open Materials: The information needed to reproduce all of the reported methodology is available at <https://osf.io/7xq3b/> (Brauer, Proyer et al., 2023).

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