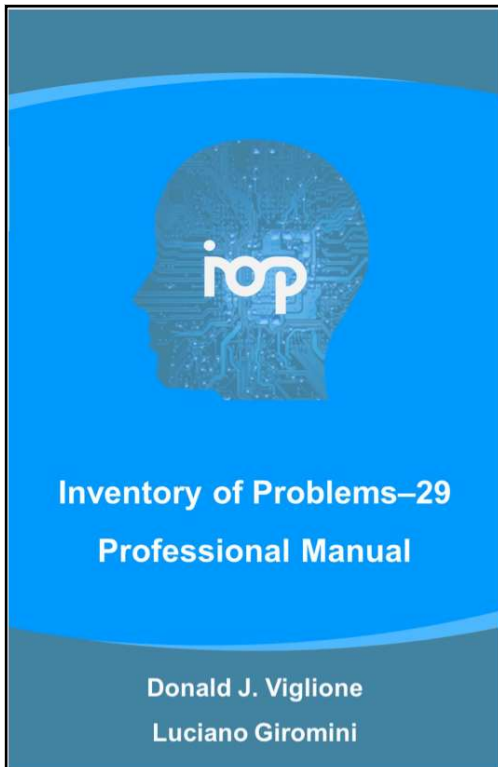


## Using the Inventory of Problems – 29 (IOP-29) to evaluate the credibility of presented mental health problems

Donald J. Viglione <sup>1</sup> & Luciano Giromini <sup>2</sup>

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<sup>2</sup> Department of Psychology, University of Turin, Italy



### Conflict of Interest

*Donald J. Viglione & Luciano Giromini are members of the LLC that publishes and provides income for the sale and use of the IOP-29.*

## What is the IOP-29?



- The IOP-29 is a **brief, symptom validity test** (Viglione, Giromini & Landis, 2017)
- It is applicable to presentations related to **PTSD, depression, psychosis, and neuropsychological problems (e.g., mTBI)** including combinations thereof
- Available in **paper-and-pencil** and **online** formats and takes **5-10 min.**
- It is **comprised of 29 items.**

For more info, visit:

[www.iop-test.com](http://www.iop-test.com)

## Why another “malingering” test?



- We aimed at addressing “**two essential test utility problems**”...

1) **Optimal cutoffs vary from one study to another**

van Impelen, A., Merckelbach, H., Jellic, M., & Merten, T. (2014). The Structured Inventory of Malingered Symptomatology (SIMS): A systematic review and meta-analysis. *The Clinical Neuropsychologist*, 28(8), 1336–1365. <https://doi.org/10.1080/13854046.2014.984763>.



**Table 7.** Possible cut scores of the Structured Inventory of Malingered Symptomatology (SIMS) and corresponding interpretations and recommendations as to their use

Cut score	Considerations
>16	Recommended when the SIMS is employed as a <i>screen</i> for feigned psychopathology. Carefully investigate and possibly exclude false-positive classifications.
>19	Recommended when the SIMS is employed as part of a test battery that is utilized for conclusive assessment of feigned psychopathology. It yields lower sensitivity, but higher specificity (reduced risk of false-positive classification).
>16 – >19	Combined cutoffs. Use scores from 17 to 19 as indicating <i>possible</i> feigning, or <i>relatively mild</i> feigning. Follow-up testing is warranted.
>24	Only recommended when the SIMS is employed as part of a test battery for conclusive assessment in populations with particularly heightened SIMS scores due to <i>genuine</i> psychopathology (e.g., schizophrenia, intellectual disability). It yields high specificity, but low sensitivity (high risk of false-negative classification).
General Caveat	Heightened SIMS scores do not necessarily reflect feigned psychopathology: They might also be the result of irrelevant responding due to, for example, fatigue, frustration, indifference, defiance, or incomprehension.

Hawes, S. W., & Boccaccini, M. T. (2009). Detection of overreporting of psychopathology on the Personality Assessment Inventory: A meta-analytic review. *Psychological Assessment*, 21(1), 112–124. <https://doi.org/10.1037/a0015036>.



**Table 3**  
Average Hit Rate, Sensitivity, and Specificity for Commonly Reported NIM and MAL Cut Scores

Scale/Cut score	k	Hit rate				Sensitivity				Specificity			
		M	SE	$Q_w$	$I^2$	M	SE	$Q_w$	$I^2$	M	SE	$Q_w$	$I^2$
<b>NIM</b>													
>77	7	.75**	.07	2.12	.00	.75**	.11	1.75	.00	.77**	.05	5.68	.00
>81	5	.79**	.09	4.07	.02	.73**	.13	4.95	.19	.83**	.07	2.75	.00
>92	3	.69**	.11	4.57	.56	.59**	.16	5.52	.64	.80**	.08	1.55	.00
>110	4	.72**	.09	2.97	.00	.33**	.13	2.10	.00	.98**	.04	0.04	.00
<b>MAL</b>													
>2	4	.68**	.08	1.20	.00	.76**	.12	2.01	.00	.65**	.07	0.79	.00
>3	10	.71**	.05	6.10	.00	.58**	.08	10.52	.14	.86**	.04	7.77	.00
>4	3	.62**	.10	3.62	.45	.35*	.14	2.22	.10	1.00**	.11	0.00	.00
>5	8	.70**	.06	5.20	.00	.28**	.08	4.38	.00	.99**	.03	1.91	.00

Note. NIM = Negative Impression scale; MAL = Malingering Index;  $Q_w$  = extent to which variability in studies contributing to the effect can be accounted for by chance;  $I^2$  = the proportion of variance in effects that is attributable to heterogeneity between studies.  
\*  $p < .05$ . \*\*  $p < .01$ .



## Why another “malingering” test?

- We aimed at addressing “two essential test utility problems”...

- 1) Optimal cutoffs vary from one study to another
- 2) There is a lot of context-related variability



- **SIMS** → low specificity with **schizophrenia** or **intellectual disability** (van Impelen et al., 2014)
- **MMPI-2** → Ds performs sub-optimally with **PTSD** or **psychotic symptoms** (Rogers et al., 2003)
- **PAI** → validity scales are more effective with **psychotic** than with **mood/anxiety disorders** (Hawes & Bocaccini, 2009)
- **TOMM** → designed for **cognitive impairment** only (Tombaugh, 1996)





## Why another “malingering” test?

- We aimed at addressing “two essential test utility problems”...

1) Optimal cutoffs vary from one study to another

2) There is a lot of context-related variability



The same score means different things for different people!!!



## Distinctive Features

The most important Distinctive Feature is that from the beginning it was designed to detect **PTSD, depression, psychosis, neuropsychological problems (for example, mTBI)** and combinations thereof

**#1** Designed to address multiple psychiatric and cognitive disorders



## Distinctive Features

It uses **two different sets of normative reference data**: one coming from ***bona fide patients*** and one coming from ***experimental simulators***. Rather using one single set of reference data coming from healthy non-clinical examinees or merely raw scores.

#2

The False Disorder Probability Score

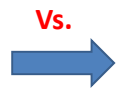
#2

The False Disorder Probability Score

## Distinctive Features



Examinee



Vs.



Healthy controls  
(normative data)



≠



Malingers



≠



Bona fide patients



#2

The False Disorder Probability Score

# Distinctive Features



Examinee

Vs.



Malingers

Vs.



Bona fide patients

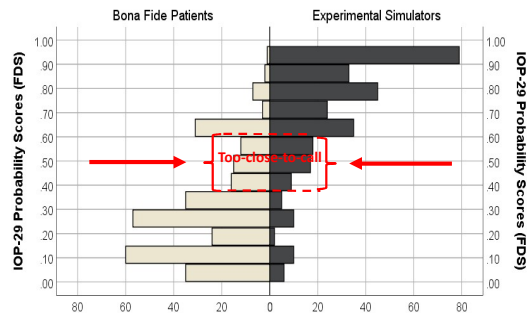
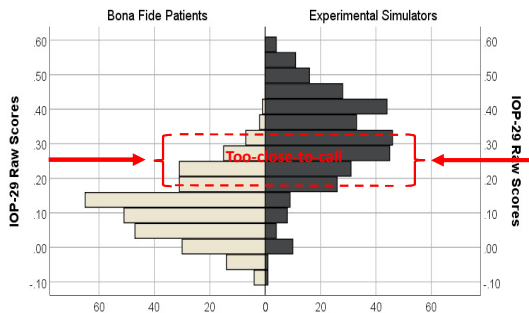


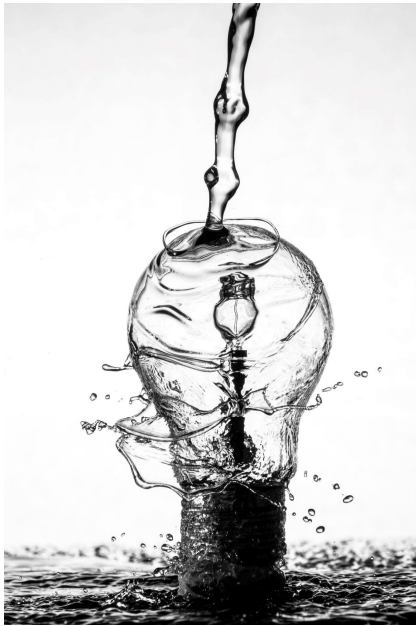
Differently from several other tests, the IOP-29 uses TWO DIFFERENT SETS OF REFERENCE DATA

#2

The False Disorder Probability Score

# Distinctive Features



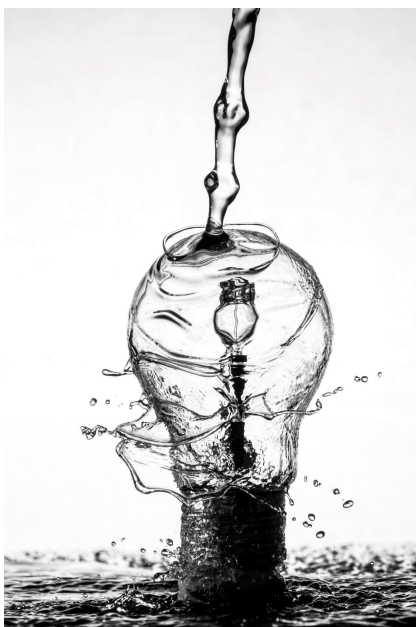


## Distinctive Features

In addition to the typical “true” versus “false” response options, most of the IOP-29 items also offer a third response option, “**doesn’t make sense**”

- This trichotomous response choice also allows each item provide more precise data from a statistical perspective.
- This option allows to indicate that the question is unanswerable or awkwardly stated.

### #3 The “Doesn’t Make Sense” response option

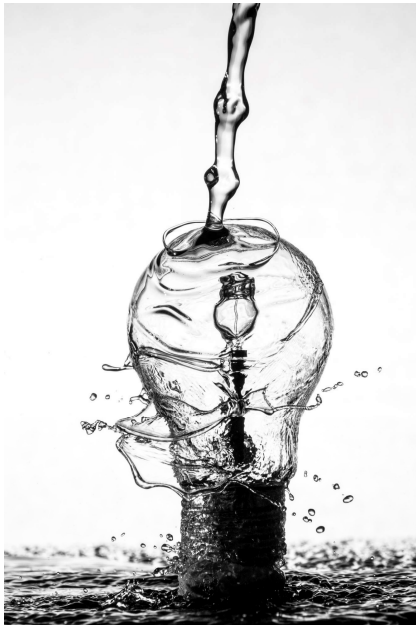


## Distinctive Features

It **intermixes self-report with cognitive (e.g., calculation, logic) items, and behavioral items**, so it is applicable for both psychiatric and cognitive complaints.

- Combining SVTs and PVTs in an assessment battery likely improves signal detection accuracy over using SVTs only or PVTs only (Boone, 2013; Fox & Vincent, 2020; Giromini et al., 2020; Larrabee, 2008; Rogers & Bender, 2018).

### #4 SVT-like plus PVT-like items



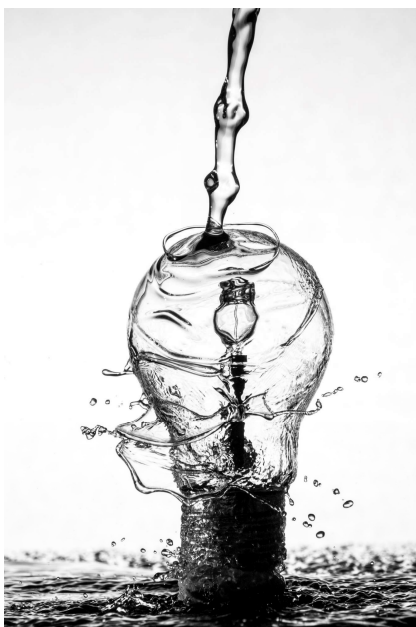
## Distinctive Features

It focuses on the **manner** in which purported **symptoms are presented**, as opposed to the presence or absence of atypical versus bona fide symptoms.

- As such, it likely yields incremental validity when used in combination with SVTs using rare-symptom endorsement-based detection strategies.

### #5

Beyond Rare-Symptom  
Endorsement



## Distinctive Features

Item selection and scaling procedures aimed at maximizing **generalizability and incremental validity**.

- The 29 IOP-29 items were empirically selected from a pool of about 300 items, across two version of the test, samples of bona fide patients and feigners of psychosis, depression, PTSD, and cognitive problems. They are designed, revised to perform similarly well with a wide variety of symptom presentations.

### #6

Same Cut-Off for all 4 Dx;  
FDS  $\geq$  .50



# Research Foundation

JOURNAL OF PERSONALITY ASSESSMENT  
http://dx.doi.org/10.1080/00223891.2016.1233882



## The Development of the Inventory of Problems–29: A Brief Self-Administered Measure for Discriminating Bona Fide From Feigned Psychiatric and Cognitive Complaints

Donald J. Viglione,<sup>1</sup> Luciano Giromini<sup>2</sup> and Patricia Landis<sup>1</sup>

<sup>1</sup>California School of Professional Psychology, Alliant International University; <sup>2</sup>Department of Psychology, University of Turin, Italy

### ABSTRACT

This article describes the development of the Inventory of Problems–29 (IOP–29), a new, short, paper-and-pencil, self-administered measure of feigned mental and cognitive disorders. Four clinical comparison simulation studies were conducted. Study 1 (*n* = 451) selected the items and produced an index of potential feigning. Study 2 (*n* = 331) scaled this index to produce a probability score, and examined its psychometric properties. Study 3 tested the generalizability of Study 2's findings with 2 additional samples (*n*s = 128 and 90). Results supported the utility of the IOP–29 for discriminating bona fide from feigned psychiatric and cognitive complaints. Validity was demonstrated in feigning mild traumatic brain injury, psychotic, posttraumatic stress disorder, and depression. Within the independent samples of Studies 2 and 3, the brief IOP–29 performed similarly to the MMPI–2 and Personality Assessment Inventory, and perhaps better than the Test of Memory Malingering. Classifications within these samples with base rates of .5 produced sensitivity, specificity, positive predictive power, and negative predictive power statistics of about .80. Further research is needed testing the IOP–29 in ecologically valid field studies.

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Psychiatry, Psychology and Law, 2020  
Vol. 0, No. 0, 1–20, https://dx.doi.org/10.1080/13218719.2020.1767720



## The Development of the Inventory of Problems–29: A Brief Self-Administered Measure for Discriminating Bona Fide From Feigned Psychiatric and Cognitive Complaints

Donald J. Viglione,<sup>1</sup> Luciano Giromini<sup>2</sup> and Patricia Landis<sup>1</sup>

## Cultural Validity of the Inventory of Problems–29 (IOP–29): an Italian Study of Court-Ordered, Psychological Injury Evaluations Using the Structured Inventory of Malingered Symptomatology (SIMS) as Criterion Variable

Paolo Roma<sup>1</sup>, Luciano Giromini<sup>2</sup>, Franco Burtà<sup>1</sup>, Stefano Ferracuti<sup>2</sup>, Donald J. Viglione<sup>1</sup>, Cristina Miazzi<sup>2</sup>

## An Inventory of Problems–29 (IOP–29) study investigating feigned schizophrenia and random responding in a British community sample

Christina L. Winters<sup>1</sup>, Luciano Giromini<sup>2</sup>, Trevor J. Crawford<sup>1</sup>, Francesca Ales<sup>1</sup>, Donald J. Viglione<sup>2</sup> and Lara Warmelink<sup>1</sup>

INTERNATIONAL JOURNAL OF FORENSIC HEALTH  
https://doi.org/10.15801/ijfh13.2021.1909798



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https://doi.org/10.1007/s12207-021-09405-3



APPLIED NEUROPSYCHOLOGY: ADULT  
https://doi.org/10.1080/23746990.2020.1864375



## Detecting Coached Feigning of Schizophrenia with the Inventory of Problems–29 (IOP–29) and its Memory Module (IOP–M): A Simulation Study on a French Community Sample

Ingrid Banovic<sup>1</sup>, Federica Filippi<sup>2</sup>, Donald J. Viglione<sup>2</sup>, Fabrizio Scrima<sup>1</sup>, Alessandro Zennaro<sup>2</sup>, Angelo Zappalà<sup>2</sup>, and Luciano Giromini<sup>2</sup>

## Discriminating Feigned from Credible PTSD Symptoms: a Validation of a Brazilian Version of the Inventory of Problems–29 (IOP–29)

Lucas de Francisco Carvalho<sup>1</sup>, Ana Rêti<sup>1</sup>, Maira Stivaleri Colombarini<sup>1</sup>, Sonia Regina Pasian<sup>1</sup>, Fabiano Koch Miguel<sup>1</sup>, Larzelo A. Erdodi<sup>1</sup>, Donald J. Viglione<sup>2</sup>, Luciano Giromini<sup>2</sup>

## An Australian study on feigned mTBI using the Inventory of Problems–29 (IOP–29), its Memory Module (IOP–M), and the Rey Fifteen Item Test (FIT)

Jennifer Gegner<sup>1</sup>, Larzelo A. Erdodi<sup>1</sup>, Luciano Giromini<sup>2</sup>, Donald J. Viglione<sup>2</sup>, Jessica Boss<sup>1</sup>, and Emanuela Bruscedelli<sup>1</sup>

APPLIED NEUROPSYCHOLOGY: ADULT  
https://doi.org/10.1080/23746990.2020.1725518



## A clinical comparison simulation study using the Inventory of Problems–29 (IOP–29) with the Center for Epidemiologic Studies Depression Scale (CES–D) in Lithuania

Guste Ilgunaitė<sup>1</sup>, Luciano Giromini<sup>2</sup>, Jessica Boss<sup>1</sup>, Donald J. Viglione<sup>2</sup>, and Alessandro Zennaro<sup>2</sup>

Psychological Injury and Law  
https://doi.org/10.1007/s12207-021-09412-2



## Using the Inventory of Problems–29 (IOP–29) with the Inventory of Problems Memory (IOP–M) in Malingering-Related Assessments: a Study with a Slovenian Sample of Experimental Feigners

Maja Maša Šömen<sup>1</sup>, Staša Lesjak<sup>1</sup>, Teja Majaron<sup>1</sup>, Luca Lavopa<sup>2</sup>, Luciano Giromini<sup>2</sup>, Donald Viglione<sup>2</sup>, Anja Podsek<sup>1</sup>

Cross-cultural Applicability & Generalizability

APPLIED NEUROPSYCHOLOGY: ADULT  
https://doi.org/10.1080/23746990.2019.1671929



## Using the inventory of problems – 29 (IOP–29) with the Test of Memory Malingering (TOMM) in symptom validity assessment: A study with a Portuguese sample of experimental feigners

Luciano Giromini<sup>2</sup>, Fernando Barbosa<sup>1</sup>, Giulia Coga<sup>1</sup>, Andrea Azere<sup>2</sup>, Donald J. Viglione<sup>2</sup>, and Alessandro Zennaro<sup>2</sup>



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<https://doi.org/10.1007/s12007-021-09437-7> Psychological Injury and Law  
 INTERNATIONAL JOURNAL OF FORENSIC MENTAL HEALTH  
<https://doi.org/10.1080/14999013.2021.1906798>

Routledge  
 Taylor & Francis Group

**Introducing Psychological Injury and Law**

Gerald Young<sup>1</sup> · William E. Foote<sup>1</sup> · Patricia K. Kerig<sup>1</sup> · Angela Mailis<sup>1</sup> · Julie Brovko<sup>1</sup> · Eileen A. Kohutis<sup>1</sup> · Shawn McCall<sup>1</sup> · Eleni G. Hapidou<sup>1</sup> · Kathryn F. Fokas<sup>1</sup> · Jane Goodman-Delahunty<sup>1</sup>

**Young (2020a) refers to the relatively new Inventory of Problems-29 (IOP-29; Viglione, Giromini, & Landis, 2017) as a newer stand-alone SVT that has the required psychometric properties for use in forensic disability and related assessments. Its research profile is accumulating, a hallmark for use in legal settings.**

**ABSTRACT**  
 Evaluating the credibility of a defendant is a core component of forensic mental health practice. The Inventory of Problems-29 (IOP-29) and a new IOP-Memory (IOP-M) research suggests that they might provide an efficient check of an examinee's presentation of symptom and performance validity indicators. In this study, we used a simulation design to test the robustness of the IOP-29 and IOP-M in a French sample. Results suggest that the IOP-29 and IOP-M may not generalize to females.

**KEYWORDS**  
 IOP-29; IOP-M; simulation; forensic mental health; symptom validity test; credibility assessment

**1.00 to 4.50, reporting the optimal support**

**1.00 for use vs. AC either test alone. This study the multimethod symptom validity can be used also in Portugal.**

**Instructions to the sensitivity of our pants. Together provided by our humans' random**

**Validity of the coached simulation the validity of the IOP-29 and IOP-M**

**the IOP-29, together with a new IOP-29 add-on memory module, to nonclinical volunteers; 101 asked to respond honestly, 100 instructed to feign PTSD. Taken together, the results of both study 1 (specificity = .96) and study 2 (Cohen's  $d = 2.15$ ,  $AUC = .92$ ) support the validity, effectiveness, and cross-cultural applicability of the IOP-29. Additionally, study 2 provides preliminary evidence for the incremental utility of the newly introduced IOP-29 add-on memory module. Despite the encouraging findings, we highlight that the determination of feigning or malingering should never be made off a single test alone.**

Psychological Injury and Law  
<https://doi.org/10.1007/s12007-021-09437-7>

**Research Foundation**

**Assessing Negative Response Bias with the Inventory of Problems-29 (IOP-29): a Quantitative Literature Review**

Luciano Giromini<sup>1</sup> · Donald J. Viglione<sup>2</sup>

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**Abstract**  
 This article reviews published, journal articles informing on the conditions of use, strengths, weaknesses, and optimal cut scores of the Inventory of Problems-29 (IOP-29; Viglione & Giromini, 2020). To provide more accurate information on the convergent and incremental validity, hit rates, and optimal cut scores of the IOP-29, in addition to reviewing all published IOP-29 studies, we also retrieved the datasets associated with each of those studies and performed some additional analyses. Taken together, the findings presented in this quantitative literature review indicate that (a) the IOP-29 correlates more strongly with other symptom validity tests (SVTs) than with other performance validity tests (PVTs), (b) the IOP-29 yields incremental validity when used together with other validity checks, (c) its classification accuracy compares favorably to that of other established tools, and (d) its suggested cut scores perform similarly well across various diagnoses and contexts. When considering the 3777 IOP-29 protocols included in the statistical analyses comparing credible ( $k = 16$ ) versus noncredible ( $k = 17$ ) presentations, the standard IOP-29 cut score of False Disorder probability Score  $\geq .50$  yielded a weighted mean sensitivity of .86 (weighted  $SD = .07$ ; range: .63–.96) at a weighted mean specificity of .92 (weighted  $SD = .06$ ; range: .79–1.00). The weighted mean Cohen's  $d$  was 3.02 (weighted  $SD = .98$ ; range: 1.48–5.31), and the weighted mean  $AUC$  was .95 (weighted  $SD = .04$ ; range: .83–1.00). These excellent statistics, however, could be inflated by the fact that almost all of the examined studies used a simulation research paradigm.

**Keywords** Inventory of Problems · IOP-29 · Malingering · Review · Symptom validity




## Incremental validity

Table 2. Incremental Validity of the IOP-29.

Source	Honest Controls		Experimental Feigners		SVT/PVT Entered at Step 1	$\chi^2$ of the Model at Step 1	$\chi^2$ of the Model at Step 2 (w/IOP-29)	$\Delta \chi^2$
	Characterization	n	Characterization	n				
Abramsky' subsample of Viglione et al. (2017)	Patients w/depression from the US	43	Experimental feigners of depression from the US	42	TOMM-1	26.8	67.1	40.3**
					TOMM-2	40.2	71.8	31.5**
Gegner et al. (2021)	Community-based controls from Australia	93	Experimental feigners of mTBI from Australia	182	FIT	180.9	331.6	150.6**
Giromini et al. (2018)	Patients w/various diagnoses from Italy	216	Experimental feigners of various conditions from Italy	236	SIMS	170.2	269.8	99.6**
Giromini et al. (2019) <sup>a</sup>	Patients w/depression from Italy	62	Experimental feigners of depression from Italy	93	MMPI-2 F	81.1	105.1	24.0**
					MMPI-2 Fb	72.2	93.1	20.9**
					MMPI-2 Fp	45.4	94.5	49.1**
McCullough' subsample of Viglione et al. (2017)	Offenders on community-based probation from the US (controls)	64	Offenders on probation instructed to feign various conditions from the US (feigners)	64	PAI NIM	120.8	146.8	26.0**
					PAI MAL	50.5	121.6	71.1**
					PAI RDF	72.4	126.2	53.8**
O'Brien' subsample of Viglione et al. (2017)	Patients w/psychosis from the US	43	Experimental feigners of psychosis from the US	45	MMPI-2 F	19.5	37.0	17.5**
					MMPI-2 Fp	25.0	40.1	15.2**
					MMPI-2 Ds-r2	45.8	49.8	4.0*
Wood' subsample of Viglione et al. (2017)	Patients w/psychosis from the US	45	Experimental feigners of psychosis from the US	45	PAI NIM	46.2	60.3	14.0**
					PAI MAL	54.4	68.6	14.2**
					PAI RDF	50.1	73.3	23.2**

Notes: TOMM-1 = Test of Memory Malingering, Trial 1; TOMM-2 = Test of Memory Malingering, Trial 2; FIT = Fifteen Item Test; SIMS = Structured Inventory of Malingering Symptoms; MMPI-2 = Minnesota Multiphasic Personality Inventory-2; PAI = Personality Assessment Inventory. All models were statistically significant both at step 1 and at step 2 at  $p < .01$ . \*  $p < .05$ ; \*\*  $p < .01$ . <sup>a</sup> Results from this study have been published before in Giromini et al. (2019).

## Incremental validity

### (example)

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Using the inventory of problems – 29 (IOP-29) with the Test of Memory Malingering (TOMM) in symptom validity assessment: A study with a Portuguese sample of experimental feigners

Luciano Giromini<sup>a\*</sup>, Fernando Barbosa<sup>b,†</sup>, Giulia Coga<sup>a</sup>, Andrea Azeredo<sup>b</sup>, Donald J. Viglione<sup>c</sup>, and Alessandro Zennaro<sup>a</sup>

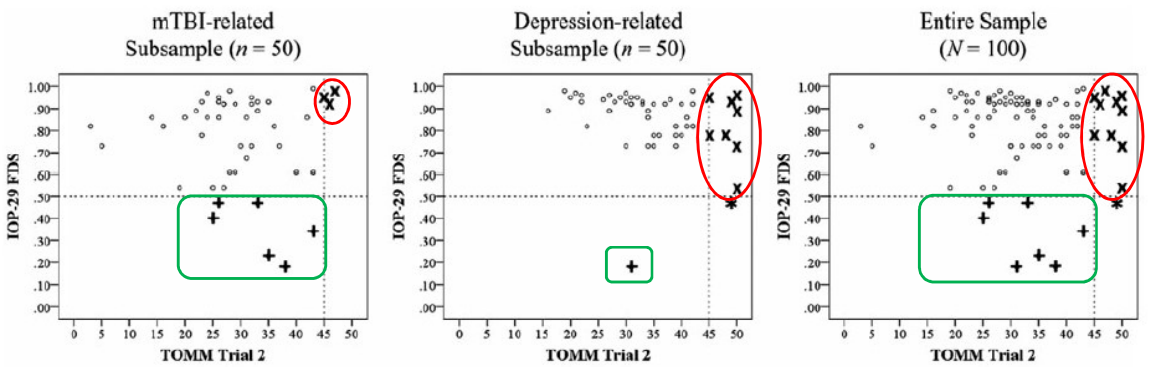




Table 3. Hit Rates of the IOP-29: Individual Studies.

## Hit Rates (1/2)

Source	Credible Group		Noncredible Group		FDS ≥ .30		FDS ≥ .50		FDS ≥ .65		AUC	Cohen's <i>d</i>
	Characterization	<i>n</i>	Characterization	<i>n</i>	Sp	Se	Sp	Se	Sp	Se		
Abeare et al. (2021)	Students from Canada	46	Experimental feigners of cognitive impairment from Canada	27	.93	.70	.98	.63	1.00	.59	.83	1.48
Ales et al. (2021)	Community sample from England	40	Experimental feigners of schizophrenia from England	43	.90	.93	.98	.88	1.00	.86	.98	3.84
Banovic et al. (2021)	Community sample from France	37	Experimental feigners of schizophrenia from France	77	.81	.86	.92	.73	.97	.60	.89	1.82
Carvalho et al. (2021)	Firefighters exposed to potentially traumatic event(s) ( <i>n</i> = 154) & community sample ( <i>n</i> = 101) from Brazil	255	Experimental feigners of PTSD from Brazil	100	.68	.97	.89	.87	.97	.69	.95	2.71
Gegner et al. (2021)	Community sample from Australia	93	Experimental feigners of mTBI from Australia	182	.94	.98	1.00	.96	1.00	.89	1.00	5.31
Giromini et al. (2018)	Patients w/various diagnoses from Italy	216	Experimental feigners of various disorders from Italy	236	.60	.90	.82	.81	.93	.73	.89	1.93
Giromini et al. (2019)	Credible evaluatees ( <i>n</i> = 26) & patients w/depression ( <i>n</i> = 36) from Italy	62	Experimental feigners of depression from Italy	93	.71	.89	.87	.75	.89	.67	.89	1.80
Giromini et al. (2020a)	N/A	0	Experimental feigners of depression ( <i>n</i> = 50) or mTBI ( <i>n</i> = 50) from	100	N/A	.97	N/A	.92	N/A	.82	N/A	N/A

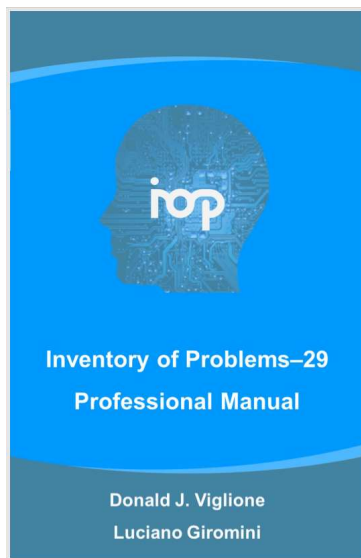
## Hit Rates (2/2)

Giromini et al. (2020b) <sup>a</sup>	Community sample from Italy	400	Experimental feigners of various disorders from Italy	400	.76	.96	.93	.91	.99	.72	.98	3.27
Giromini et al. (2020d)	Community sample from Italy, w/elderly responders ( <i>n</i> = 32) likely suffering from cognitive impairment	192	Experimental feigners of various disorders from Italy	168	.82	.97	.94	.86	.99	.72	.98	3.27
Ilgunaite et al. (2020)	Patients w/depression from Lithuania	50	Experimental feigners of depression from Lithuania	50	.72	.98	.96	.94	.98	.74	.98	3.31
McCullaugh' subsample of Viglione et al. (2017)	Offenders on community-based probation from the US (controls)	64	Offenders on probation instructed to feign various conditions from the US (feigners)	64	.97	.80	1.00	.72	1.00	.66	.94	2.66
Roma et al. (2019)	Credible forensic evaluatees (SIMS score < 17) from Italy	43	Noncredible forensic evaluatees (SIMS score ≥ 17) from Italy	32	.74	.97	.98	.81	1.00	.66	.98	2.98
Šómen et al. (2021)	Community sample from Slovenia	50	Experimental feigners of depression ( <i>n</i> = 50) or schizophrenia ( <i>n</i> = 50) from Slovenia	100	.88	.97	.98	.88	.98	.73	.99	3.41
Viglione et al.'s (2017) cross-validation sample	Patients w/various diagnoses from the US	82	Experimental feigners of various disorders from the US	83	.57	.93	.79	.81	.90	.69	.87	1.67
Winters et al. (2020) <sup>a</sup>	Community sample from England	151	Experimental feigners of schizophrenia from England	151	.89	.99	.97	.92	.97	.83	.99	4.20
Wood' subsample of Viglione et al. (2017)	Patients w/psychosis from the US	45	Experimental feigners of schizophrenia from the US	45	.67	.96	.80	.82	.87	.69	.90	1.95

## Hit Rates (summary)

Table 4. Hit Rates of the IOP-29: Weighted Mean Values.

	Specificity			Sensitivity			Effect size							
	<i>N</i>	<i>k</i>	FDS ≥ .30	FDS ≥ .50	FDS ≥ .65	<i>N</i>	<i>k</i>	FDS ≥ .30	FDS ≥ .50	FDS ≥ .65	<i>N</i>	<i>k</i>	<i>AUC</i>	<i>d</i>
<b>Overall</b>	1,826	16	.76 (.11)	.92 (.06)	.96 (.03)	1,951	17	.94 (.05)	.86 (.07)	.76 (.08)	3,677	16	.95 (.04)	3.02 (0.99)
<b>Target Condition of the Study</b>														
Depression/Anxiety	112	2	.71 (.00)	.91 (.04)	.93 (.04)	143	2	.92 (.04)	.82 (.09)	.69 (.03)	255	2	.93 (.04)	2.39 (0.74)
PTSD	255	1	.68	.89	.97	100	1	.97	.87	.69	355	1	.95	2.71
Psychosis	273	4	.84 (.08)	.94 (.06)	.96 (.04)	316	4	.95 (.05)	.85 (.08)	.76 (.10)	589	4	.96 (.04)	3.34 (1.08)
Neuropsychological	139	2	.94 (.00)	.99 (.01)	1.00 (.00)	209	2	.94 (.09)	.92 (.11)	.85 (.10)	348	2	.96 (.07)	4.51 (1.56)
Mixed/Other	1,047	7	.74 (.11)	.91 (.06)	.96 (.03)	1,183	8	.94 (.04)	.86 (.05)	.76 (.06)	2,130	7	.94 (.04)	2.81 (0.63)



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# Administration, Scoring, & Interpretation

**iop** Pricing Sign up Login

## Inventory of Problems - 29

*An omnibus test designed to assist practitioners assessing malingering of psychiatric or cognitive complaints*

**USERS**  
Mental health professionals. Clinical and forensic applications and evaluations. Use alone or together with other malingering tools.

**KEY FEATURES**  
Highly automated, fully validated, self-administered instrument of feigned mental and cognitive disorders.

**ADMINISTRATION FORMATS**  
Computer, tablet or paper and pencil. Efficiently scored in the Cloud.

**FAST**  
With only 29 questions the IOP-29 achieves classification accuracy indices superior to other available performance and symptom validity tests.

**ACCURACY AND PRECISION**  
Tested with about 2,000 individuals – half bona fide patients and half experimental feigners. Calculates the probability of coming from one of these two groups.

**DIAGNOSTIC TARGETS**  
Psychiatric disorders including schizophrenic spectrum or psychosis, PTSD, and depression or anxiety. Cognitive or neuropsychological disorders, for example, mTBI. Also, combinations of these psychiatric cognitive and mental disorders as encountered in clinical and forensic practice.

**www.iop-test.com**

**iop** Home Pricing Sign up

**Login**  
Sign in to your IOP-29 account

Username

Password

Login

**Forgot password?**  
Contact us at info@iop-test.com and we will help you retrieve your password

**iop** Home Pricing Sign up

**Login**  
Sign in to your IOP-29 account

Username

Password

Login

**Forgot password?**  
Contact us at info@iop-test.com and we will help you retrieve your password

**iop**

Welcome, luci

You have 983 scoring credit(s). To purchase more credits, please [click here](#).

Using the menu on your left, you can:

- **Administer a new IOP-29, either online, or via paper-and-pencil format**  
To administer a new test online, please select [Online](#) under the New test option. To administer a new test via paper-and-pencil format, please select [Download](#) under the New test -> Paper option.
- **Enter the responses of a previously administered, paper-and-pencil IOP-29**  
If you have administered an IOP-29 via paper-and-pencil format, you can enter your client's answers by selecting [Score](#) under the New test -> Paper option. This step is necessary to generate the False Disorder Score for paper-and-pencil administrations only.
- **View the results of a previously administered IOP-29**  
To retrieve a record or to submit it for final scoring, please select the option [Stored tests](#).

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## Administration – paper & pencil

**iop**

**Paper-and-pencil Administration: Download**

Click on Download the IOP-29 to produce your PDF; then print the document and administer it following the guidelines described in the manual.

Please note that you are the only person allowed to use this paper-and-pencil version of the IOP-29. However, you can print it and use it as many times as you want, as long as you use this website to generate the IOP-29 scores. Hand scoring is not permitted.

- Download the IOP-29 (Brazilian Portuguese)
- Download the IOP-29 (Dutch)
- Download the IOP-29 (English)
- Download the IOP-29 (European Portuguese)
- Download the IOP-29 (German)
- Download the IOP-29 (French)
- Download the IOP-29 (Italian)
- Download the IOP-29 (Simplified Chinese)
- Download the IOP-29 (Traditional Chinese)
- Download the IOP-29 (Lithuanian)
- Download the IOP-29 (Latin American Spanish)



# Administration – paper & pencil

## The Essentials

### Paper-and-Pencil Administration

**Preliminary procedure.** Login to the IOP-29 website, select "New test" → "Paper," and download the pertinent IOP-29 version, i.e., the version that is in the mother tongue of the examinee. Print a copy of it and have it ready on your working desk, along with a couple of pens, when you begin your administration.

**Introducing the task.** Say something like, "The Inventory of Problems is a short test of psychological problems that I'd like you to take. It has 29 statements or questions for you to answer. Have you ever heard of it, or have you taken it before?" If "No," begin the administration; if "Yes," briefly discuss their experiences as you would when considering the suitability of using any other test in a high stakes evaluation or clinical context.

**Initiating the administration.** Say something like, "OK, so this is the Inventory of Problems. Please read all the instructions carefully, and if you have any questions or don't understand something please ask me about it. If you would like me to read the instructions for you, I'd be glad to." If there is evidence that the examinee has difficulty reading, one can offer to read the items and item response choices to the examinee.

**Answering examinee's questions during administration.** If the examinee were to ask about a confusing or global word or phrase, for example "the incident" (#7), "that thing" (#9), "it" (#13), or "the accident" (#25), say something like, "Think about what that means for you the way it is used in that sentence. It could mean different things for different people." For other questions that answer might work but also consider saying something like, "It's really up to you. Choose the option that applies to you." If the person requires more explanation, try, "OK, just read the statement

and think about it, and if it is true or mostly true select T, if it is false or mostly false select F. On the other hand, if the statement doesn't make sense to you, select D." Do not give any extra or leading information in your answers.

**Dealing with missing answers when the test is returned to the examiner.** If one or more items are blank, say something like, "I see you skipped / didn't do item(s) #(s) [name the number of the skipped item(s)]. If you could please take a look and choose an answer to this/those one(s), that would be very much appreciated." If the examinee were to say that s/he cannot answer, just accept the rejection.

**Dealing with confusing answers when the test is returned to the examiner.** Sometimes, examinees circle two answers or write their answers in a way that the examiner cannot determine whether they endorsed T, F, or D. If that happens, say something like, "For item [name the item number] I can't tell whether you meant to answer [name the response options on which you are uncertain, e.g., T or F]. Could you please take a look at it and tell me what your final answer was?" If you cannot read the answer to the math calculation items, #3 and/or #10, say something like, "For item [#3 and/or #10] I need to be sure of what you wrote. Can you tell me what number(s) this is (these are)?"



# Administration – online

**Case-relevant information**  
Now, please enter some additional, case-relevant information

**Case-relevant information**

Client ID:  max 80 chars

Gender:  Male  Female  Other

Age (in years):

Education (in years):

Ethnicity:

Language:

Is this person taking the IOP-29 in his/her native language?  Yes  No  I don't know

Is this person currently taking psychiatric medication?  Yes  No  I don't know

Any additional comments on this case?  max 150 chars



2

3

**IOP-29 Online Administration**

You are about to start a new IOP-29 online administration. Before handing the device to your client, please paste below the unique token associated with his/her administration. Then, before clicking "Submit" please close all other open tabs, to prevent your client from accessing your account and results from IOP-29 tests.



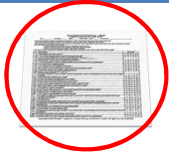
1

**Start Online Administration**

The case-relevant information concerning this case has been stored. You may now start your online administration, or you can administer the IOP-29 to this case later. The unique code (or "Token") generated by the system for this specific case is: **9229763-24d7-4664-8335-85c2575703db**

- **Administer the IOP-29 now, from this device.** First, copy the Token above. Then, [click here](#) and paste the Token in the appropriate space.
- **Administer the IOP-29 later or from another device.** To administer the IOP-29 to this specific client at a later time or from a different device, simply enter the Token indicated above, in the appropriate space of the IOP-29 online administration webpage ([www.iop-test.com/online](http://www.iop-test.com/online)). Please note that the Token associated with this specific client may be retrieved at any time from the listed tests section of your IOP-29 account.

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## Scoring – paper & pencil

- First, you will need to enter your client's responses under the section **score**.
- **In case of ambiguity, enter the response exactly how it appears on the paper.** For example, if both *T* and *F* were circled for any given item, and the client could not clarify whether s/he meant to answer *T* or *F*, enter both response options for that item.
- If an item was left unanswered, simply leave it blank.



## Scoring – paper & pencil

**Case relevant information**  
Now, please enter some additional, case-relevant information

**Case relevant information**

Unique ID label/number:  max 80 chars

Gender:  Male  Female  Other

Age (if of years):

Education (if of years):

Ethnicity:

Is this person taking the IOP-20 in his/her native language?  Yes  No  I don't know

Is this person currently taking psychiatric medication?  Yes  No  I don't know

Any additional comments on the case?  max 150 chars

**Insert responses**  
Now please enter the responses of your client by clicking on the pertinent boxes. Should you have any doubts on how to enter a given response for example, what if the person selected both T and D1, please consult the manual.

**Case relevant information**

Items#	Response Options
1	<input checked="" type="checkbox"/> T <input type="checkbox"/> F <input type="checkbox"/> D
2	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
3	<input type="text" value="14"/>
4	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
5	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
6	<input checked="" type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
7	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
8	<input checked="" type="checkbox"/> T <input type="checkbox"/> F <input type="checkbox"/> D
9	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
10	<input type="text" value="112+5"/>
11	<input checked="" type="checkbox"/> T <input type="checkbox"/> F <input type="checkbox"/> D
12	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
13	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
14	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D
15	<input type="checkbox"/> T <input checked="" type="checkbox"/> F <input type="checkbox"/> D

## Scoring – both formats...

- Once your client's responses have been entered, you may generate the FDS under the section **stored tests** → **in progress**, by selecting the relevant case, and clicking **"Generate"**.

## Scoring – both formats...

The image shows two screenshots from the IOP-29 software interface. The left screenshot displays a table of 'IOP-29 data in progress' with columns for Client ID, Age, Gender, IOP-29 format, Scoring date, and Status. The 'In progress' tab is selected in the sidebar, and the 'Generate' button for the first row is circled in red. The right screenshot shows the 'Back to "In progress"' screen with a 'Generate' button circled in red at the bottom. A blue arrow points from the 'Generate' button in the first screenshot to the 'Generate' button in the second screenshot.

Client ID	Age	Gender	IOP-29 format	Scoring date	Status
example WS San Diego	35	Male	Online	-	Incomplete
et ANNA top29M			Paper and pencil	5/2/2019	Completed
jessica87			Paper and pencil	4/25/2019	Completed
Dario	Male		Online	4/13/2019	Completed
federica esempio onesto			Paper and pencil	3/14/2019	Completed
federica esempio simulazione SCZ	Female		Paper and pencil	3/14/2019	Completed
AnnaEsempio			Paper and pencil	3/4/2019	Completed
cambio item			Paper and pencil	3/4/2019	Completed
dif			Paper and pencil	3/4/2019	Completed
strepitosa			Paper and pencil	3/4/2019	Completed
manual instructions			Online	-	Not scored
giù/ghiù			Online	-	Not scored
esempio workshop milano 2019			Paper and pencil	-	Incomplete
Anna Maffei - esempio			Online	2/20/2019	Completed
Chiara battaglin esempio SCZ	Female		Online	2/20/2019	Completed
Priva archivio			Online	2/17/2019	Completed
Spencer #10			Online	-	Not scored

Item #	Response	Item #	Response	Item #	Response
1	D	11	F	21	F
2	D	12	F	22	F
3	BBW/19501941.B07	13	F	23	F
4	F	14	F	24	F
5	F	15	F	25	F
6	F	16	F	26	F
7	F	17	F	27	F
8	F	18	F	28	F
9	F	19	F	29	F
10	BBW/19501941.B07	20	F		

The IOP-29 False Disorder Probability Score has not been generated yet



# Interpretation

**Table 3.** Suggested IOP-29 Cut Scores and Relative Sensitivity and Specificity

Evaluation context	Recommended Cut Scores	Expected	
		Sens	Spec
The IOP-29 is used for <b>screening purposes</b> only. Only positive classifications will be followed up with additional testing involving other symptom or performance validity tests. As such, the goal is to minimize false negative outcomes so that sensitivity levels of about 90% are desired.	FDS $\geq$ .30 (liberal)	$\approx$ 90%	$\approx$ 60%
All situations in which the evaluator wants to evaluate the overall credibility of the reported complaints, and <b>sensitivity and specificity are equally important</b> . The IOP-29 may be used alone or together with other tests. The goal is to minimize both false positive and false negative classifications.	FDS $\geq$ .50 (standard)	$\approx$ 80%	$\approx$ 80%
<b>High-stakes forensic evaluations</b> , in which the IOP-29 is typically used along with other symptom or performance validity tests. The goal is to minimize the risk of false positive classifications, so that a standard approach is to seek for specificity levels of about 90%.	FDS $\geq$ .65 (conservative)	$\approx$ 70%	$\approx$ 90%

Classification accuracy estimates based on Viglione et al. (2017) and Giromini et al. (2018). Sens = Sensitivity; Spec = Specificity.

.40 to .60  
too-close-to-call  
Se  $\approx$  .90 at FDS = .40  
Sp  $\approx$  .90 at FDS = .60

**iop** Certified IOP-29 ID:  
IOP-29-2389

## Inventory of Problems – 29©: Results & Interpretative Report

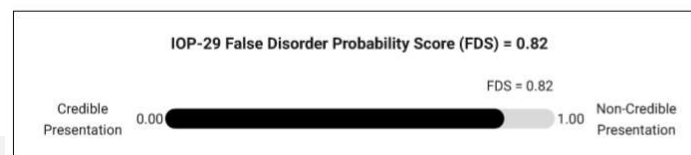
<b>Client ID:</b>	ac ANNA iop29M	<b>Gender:</b>	[none]
<b>Main complaint:</b>	Neuropsychological/Intellectual Dysfunction	<b>Age:</b>	[none]
<b>Additional complaint(s):</b>	[none]	<b>Form language:</b>	[none]
<b>IOP-29 format:</b>	Paper and pencil	<b>Scoring date:</b>	5/2/2019

- Example of report,  
-- Page 1

The Inventory of Problems 29 (IOP-29; Viglione, Giromini, & Landis, 2017) is a brief, self-administered test designed to assist practitioners in evaluating the credibility of various psychiatric and/or cognitive symptom presentations. Its chief scale, the False Disorder Probability Score (FDS), is a probability value reflecting the likelihood of drawing a given IOP-29 from a group of experimental feigners versus a group of bona fide patients when there are no a-priori expectations. The higher the FDS, the lower credibility of the presentation.

### IOP-29 Results for ac ANNA iop29M

This test-taker scored a 0.82. In previously published research samples including half experimental feigners and half bona fide patients (Viglione et al., 2017), there would thus be 82% probability that this IOP-29 belonged to an experimental feigner. Hence, the odds would be 4.56 to 1 that this score arose from a non-credible presentation.





# Interpretation

## Classification Accuracy

The following table is based on Viglione et al.'s (2017) cross-validation sample of Study 2 and Giromini et al.'s (2018) independent validation dataset, which combined include IOP-29 data from 298 bona fide patients and 319 experimental simulators collected in the U.S. and Italy. It reports on the classification accuracy of the IOP-29 FDS:

- Example of report,  
-- Page 2

Cut-off	Se	Sp	Base rate = .50		Base rate = .30		Base rate = .10	
			PPP	NPP	PPP	NPP	PPP	NPP
≥ 0.15	0.95	0.32	0.58	0.86	0.37	0.94	0.13	0.98
≥ 0.30	0.91	0.59	0.69	0.87	0.49	0.94	0.20	0.98
≥ 0.50	0.82	0.81	0.81	0.81	0.65	0.91	0.33	0.98
≥ 0.70	0.65	0.96	0.94	0.73	0.86	0.86	0.62	0.96
≥ 0.85	0.43	0.99	0.98	0.64	0.95	0.80	0.82	0.94

Se = Sensitivity; Sp = Specificity; PPP = Positive Predictive Power; NPP = Negative Predictive Power. PPP and NPP for base rates of .50, .30, and .15 were calculated using Streiner's (2003) formulas.

*(actual interpretive output also includes additional information not reported here)*




# Currently working on...

- The **IOP-M memory module**:

Psychological Injury and Law (2020) 13:261–274  
<https://doi.org/10.1007/s12207-020-09385-8>

SVT Meets PVT: Development and Initial Validation of the Inventory of Problems – Memory (IOP-M)

Luciano Giromini<sup>1</sup>  · Donald J. Viglione<sup>2</sup> · Alessandro Zennaro<sup>1</sup> · Anna Maffei<sup>1</sup> · Laszlo A. Erdodi<sup>3</sup>

Received: 10 March 2020 / Accepted: 2 June 2020 / Published online: 26 June 2020  
 © Springer Science+Business Media, LLC, part of Springer Nature 2020



- The **Random Responding Scale**:

JOURNAL OF PERSONALITY ASSESSMENT  
<https://doi.org/10.1080/00223891.2019.1639188>

 **Routledge**  
 Taylor & Francis Group



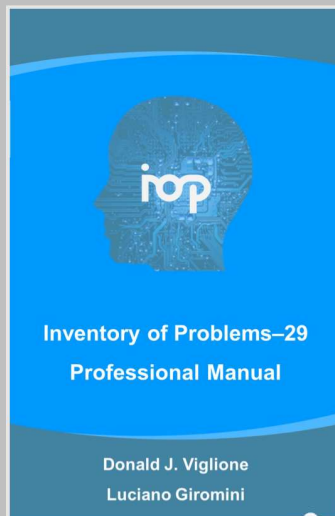
An Inventory of Problems–29 Study on Random Responding Using Experimental Feigners, Honest Controls, and Computer-Generated Data

Luciano Giromini<sup>1</sup> , Donald J. Viglione<sup>2</sup>, Claudia Pignolo<sup>1</sup> , and Alessandro Zennaro<sup>1</sup> 

<sup>1</sup>Department of Psychology, University of Turin, Turin, Italy; <sup>2</sup>California School of Professional Psychology, Alliant International University

## Inventory of Problems - 29

*An omnibus test designed to assist practitioners assessing malingering of psychiatric or cognitive complaints*



[www.iop-test.com](http://www.iop-test.com)



# To learn more about the IOP...

Feel free to contact us!

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