**CORE KNOWLEDGE CONFUSIONS**

**Information**: The test assesses category errors confusing ontological core knowledge about mental phenomena, material objects, living and animate organisms, and the processes these

engage in. These confusions are typically associated to paranormal (supernatural, magical, superstitious) beliefs. See also the Note below.

**References:**

Lindeman, M., Cederström, S., Simola, P., Simula, A., Ollikainen, S., & Riekki, T. (2008). Sentences with core knowledge violations increase the size of N400 among paranormal believers. Cortex, 44, 1307-1315.

Publisher: Elsevier

Lindeman, M., & Aarnio, K. (2007). Superstitious, magical, and paranormal beliefs: An integrative model. Journal of Research in Personality, 41, 731-744.

Publisher: Elsevier

Lindeman, M., Blomqvist, S., & Takada, M. (2012). Distinguishing spirituality from other constructs: Not a matter of well-being but of belief in supernatural spirits. Journal of Nervous and Mental Disease, 200, 167-173.

Publisher: Lippincott Williams & Wilkins

Svedholm, A. & Lindeman, M. (2013). The separate roles of the reflective mind and involuntary inhibitory control in gatekeeping paranormal beliefs and the underlying intuitive confusions. British Journal of Psychology, 4, 303-319

Publisher: Wiley

Lindeman, M., Svedholm-Häkkinen, A., & Lipsanen, J. (2015) Ontological confusions but not mentalizing abilities predict religious belief, paranormal belief, and belief in supernatural purpose. Cognition, 134, 63-76.

**Instruction:**

The participants are first presented with examples of clearly literal (e.g., “Mozart was a composer”) and metaphorical sentences (e.g., “A surprising piece of news is a bomb”) to emphasize the difference between metaphorical and literal sentences. The participants are then asked to indicate whether the following statements are literally (not only metaphorically) true. The items are to be presented in random order. Both dichotomic (no / yes) and 5-point scales have been be used (e.g., 1 = only metaphorically true; 5= only literally true).

**Items**, sum variables and reliability (Cronbach's α in parentheses):

*Sum variable: Natural, lifeless entities are living* (.80)

Items:

Stars live in the sky

Stones live in the forest

Rock lives long

Water lives in the nature

Moon lives at night

*Force has the attributes of an animate organism (*.80)

Items

Force lives in the universe

Force senses a human

Force wants to move

Force aims to influence

Force knows its direction

*Lifeless entities have the attributes of animate organisms* (.68)

Items:

 Sun can see a long way

Moon aims to move forward

Stones sense the cold

Planets know things

Earth wants water

The sky hears the thunder.

*Inanimate organisms have the attributes of animate organisms* (.75)

Items:

Trees aim to move upwards

Trees sense the wind

Flowers want light

Flowers feel the cold in the fall

Plants know the seasons

*Artificial entities have the attributes of animate organisms* (.85)

Items:

Home knows its residents

Furniture wants a home

House senses its environment

House knows its history

*Mental states have the attributes of a physical object* (.72)

Items:

Grief moves in the stomach

Mind touches the other

Thought grows by concentrating

Mind breaks when it is ill

A plan lives in the nature

Fear poisons man

Fillers:

*Metaphors* (.71)

Items:

Good memory is a mine

Howling wind is a flute

Distressed person in a prisoner

Sudden fear is a grasping hand

*Literally true statements* (.89)

Items:

Flowers grow in the summer

Rainless weather is dry

Bad drawing is a scribble

Flowing water is liquid

**NOTE.** The scale has not been validated and we have used different versions of the scale in different articles. The following items were used in Lindeman, et al. (2015) because the data used in the earlier articles (see the references above) show that they are most predictive of paranormal (supernatural, magical, superstitious) beliefs:

1. Rock lives long
2. Force lives in the universe
3. Force aims to influence
4. Earth wants water
5. Planets know things
6. The sky hears the thunder.
7. Flowers want light
8. Plants know the seasons
9. Home knows its residents
10. Furniture wants a home
11. House knows its history
12. Mind touches the other
13. A plan lives in the nature
14. Fear poisons man.

FILLERS:

1. Good memory is a mine
2. Howling wind is a flute
3. Distressed person is a prisoner
4. Rainless weather is dry
5. Bad drawing is a scribble
6. Flowing water is liquid