**CONCEPTIONS OF ENERGY**

**Information:**

The scale assess a broad set of scientifically valid and invalid attributes people may associate with energy

**References:**

Svedholm, A. M. & Lindeman, M. (2013). Healing, mental energy in the physics classroom: Energy conceptions and trust in complementary and alternative medicine in grade 10-12 students. *Science & Education, 22,* 677-694. doi: 10.1007/s11191-012-9529-6

Some of the items were also used here:

Lindeman, M., & Saher, M. (2007). Vitalism, purpose and superstition. British Journal of Psychology, 98, 33-44. doi: 10.1348/000712606X101808

**Instructions:**

(We have asked the participants to rate each statement on a dichotomous scale by circling the ones they thought could be literally true but the items can be used with a 5-point scale as well)

*Next we will ask for your opinion on whether the following statements about energy can be literally true. For example, the statement ‘A studio is an apartment’ is literally true. In contrast, the statement ‘A surprising piece of news is a bomb’ is a metaphor and cannot be literally true. What do you think, is the statement literally true? Circle each item that you think applies.*

Energy can… (*The items were presented in scrambled order.)*

Living Thing

grow

cleanse

heal

be poisonous

be clean

procreate / increase

be living

wither

spread diseases

get insufficient nutrition

be dirty

die

breathe

sense a person

recover from illness

fall ill

Mental Property

be good

be mental

be spiritual

be sensed as an experience

be steered by means of thought

manifest as an emotion

be bad

be freed spiritually

be conscious

be a matter of will

be transferred into a human through a gaze

Animate being

interact with a human being

strive to exert influence

go where it wants to go

see

tell things

know its direction

hear

know things

know how to do things

want things

have feelings

get lost

feel pain

think

Material Substance

flow

fit into a small space

break

be of a certain color

be light or heavy

be something that one can touch

be broken by a person

be unbroken / intact

manifest as water

Fillers not included in a subscale

be transferred into a human being through food

be sensed through the skin

manifest as events

Scientifically Valid

be freed in chemical reactions

manifest as movement of particles

manifest as light

manifest as electric current

manifest as heat

change the state of matter

can be transformed into a different state

be stored

not disappear

be the ability of a physical system to cause changes

not appear out of nothing