

## Bridge the gap between artificial, artistic and human-like intelligence.

Analyses of the relationship<sup>1</sup> between various abilities<sup>2</sup>, *artificial-, human-like-, artistic-, and general intelligence*<sup>3</sup>, related to abilities (ability) in general, and to these the designation of *special abilities, capabilities or talents* has been applied.

To determine the relationship, combinatorial and various levels existing between *artificial-, human-like-, artistic-, and general intelligence* (e.g., How? Perhaps as measured by established intelligence tests?), and *artistic ability*, as measured by the achievement of aesthetic quality in composition, drawing, painting, composing, dancing, creating, adapting, inventing, creativity, problem-solving etc. etc.

Ideas are hard to find, people love to have ideas! Having lots of ideas looks like you really are very creative and that you must possess very special talents more than anybody else around you. Often you are praised for being so highly creative and so smart, that you indulge yourself in all kinds of happy thoughts about how good you are consequently daydreaming about having many more ideas in the future.

Anybody can be creative and has the capacity to have ideas or think thoughts that if brought to bear are so creative and ingenious that we could become envious of such a person. Sharing and spreading your ideas, showing creativity without being inhibited, having confidence to open yourself up and feel free to convey your thoughts no matter how 'ridiculous' it may sound has an immediate effect or affect<sup>4</sup> on people's behavior, self-esteem and psychological condition. Creativity, imagination and inspiration go together well with doing, taking action and being motivated to carry on.

We could identify five possible relationships<sup>5</sup> (Sternberg and O'Hara, 1999): Intelligence and creativity can either be seen as a subset of each other, they may be viewed as coincident sets, they can be seen as independent but overlapping sets, and lastly as completely disjoint sets. We assume a substantial correlation between creativity and intelligence<sup>6</sup>; this correlation may vary at different levels of cognitive ability. There seems to be a positive linear relationship in the lower to average IQ range while there was no correlation at above-average levels of intelligence.

Creativity<sup>7</sup> is a concept of individual differences which is intended to explain why some people have higher potential to provide new solutions to old problems than others. Creativity<sup>8</sup> is usually examined at

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<sup>1</sup> It is still unclear how the concepts of creativity and intelligence relate to each other ([Kaufman & Plucker, 2011](#)).

<sup>2</sup> Multidimensional model of capabilities, capacity and abilities.

<sup>3</sup> Human intelligence has long been on the borderline between a scientific and a quasi-scientific field within the scope of psychological science. This is partially because its study and measurement have been particularly susceptible to socio-political agendas, but also because empirical tests of theories of intelligence have too often ranged from inadequate to nonexistent.

<sup>4</sup> The emotional complex associated with an idea or mental state. In hysteria, the affect is sometimes entirely dissociated, sometimes transferred to another than the original idea.

<sup>5</sup> Sternberg R.J., O'Hara L.A. *Creativity and intelligence*. In: Sternberg R.J., editor. *Handbook of creativity*. Cambridge University Press; Cambridge: 1999. pp. 251–272.

<sup>6</sup> Guilford J.P. McGraw-Hill; New York: 1967. *The nature of human intelligence*.

<sup>7</sup> Hennessey B.A., Amabile T.M. *Creativity*. *Annual Review of Psychology*. 2010;61:569–598. doi: 10.1146/annurev.psych.093008.100416.

<sup>8</sup> Sternberg R.J., Lubart T.I. *The concept of creativity: Prospects and paradigms*. In: Sternberg R.J., editor. *Handbook of creativity*. Cambridge University Press; Cambridge: 1999. pp. 3–15.

different conceptual levels, creative achievements and creative potential<sup>9</sup> of the individual's ability to generate something novel and useful or show ideational originality and to produce creative ideas<sup>10</sup>. Mostly assessed by means of tests that measure divergent thinking ability. Basically, conceptions (implicit, tacit theories) of human intelligence and artistic intelligence that investigate proceeds of formal (explicit) theories and measures.

Meta-analytic<sup>11</sup> findings suggest that the correlation between creative potential and intelligence generally is around  $r = .20$ ? We need to perform an unbiased detection of potential thresholds within the typical range of intelligences; either general intelligence, artistic or other types of intelligences. In effect, **higher openness**<sup>12</sup> may foster the acquisition of a broader general knowledge and thus support creativity<sup>13</sup>. Human intelligence could be seen as a psychological construct<sup>14</sup>, an abstract, unobservable, hypothetical entity inferred from postulated thoughts and observable behaviours, representing patterns of psychologically related phenomena<sup>15</sup>. In essence it is a concept developed to describe a specific aspect of the mind or behaviour that is not directly observable, but is inferred from patterns in thoughts, feelings, and actions.

Investigate the relationship between rational intelligence that involves logical reasoning and problem-solving, while artistic intelligence focuses on creativity and expression. Artificial intelligence, on the other hand, refers to computer systems that can perform tasks typically associated with human intelligence, blending aspects of both rational and artistic intelligence depending on their design and application.

One hypothesis is that if you could externalize ideas (i.e., artistically) with the aid of computational machines<sup>16</sup>, artificial intelligence<sup>17</sup> and bring out the creative act in harmonized and holistic ways such that people can benefit and gain from it.

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<sup>9</sup> Runco M.A. *Divergent thinking, creativity, and ideation*. In: Kaufman J.C., Sternberg R.J., editors. *The Cambridge handbook of creativity*. Cambridge University Press; Cambridge: 2010. pp. 413–446.

<sup>10</sup> Wendrich, R. E. (2014, August). *Mixed reality tools for playful representation of ideation, conceptual blending and pastiche in design and engineering*. In *International Design Engineering Technical Conferences and Computers and Information in Engineering Conference* (Vol. 46292, p. V01BT02A033). American Society of Mechanical Engineers.

<sup>11</sup> Kim K.H. *Can only intelligent people be creative?* *Journal of Secondary Gifted Education*. 2005;16:57–66.

<sup>12</sup> Wendrich, R. E. (2020). Connecting Computational Tools with Psychedelic Research:(hypotheses). In *2nd Interdisciplinary Conference on Psychedelic Research, ICPR 2020*.

<sup>13</sup> Cho S.H., Nijenhuis J.T., van Vianen A.E., Kim H.-B., Lee K.H. *The relationship between diverse components of intelligence and creativity*. *The Journal of Creative Behavior*. 2010;44:125–137.

<sup>14</sup> L.J. Cronbach, P.E. Meehl, *Construct validity in psychological tests* *Psychological Bulletin*, 52 (4) (1955), pp. 281-302

<sup>15</sup> K. Sijtsma, *Psychometrics in psychological research: Role model or partner in science?* *Psychometrika*, 71 (2006), pp. 451-455

<sup>16</sup> Wendrich, R. E. (2013). *The creative act is done on the hybrid machine*. In *DS 75-1: Proceedings of the 19th International Conference on Engineering Design (ICED13), Design for Harmonies, Vol. 1: Design Processes*, Seoul, Korea, 19-22.08. 2013 (pp. 399-408).

<sup>17</sup> Wendrich, R. E. (2020, May). *Creative thinking: Computational tools imbued with AI*. In *Proceedings of the design society: Design conference* (Vol. 1, pp. 481-490). Cambridge University Press.