

2.3.4.1.2 Information Cognitive Layer

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The Information Cognitive Layer is a level of the Cognitive Model. See: [Appendix I: Cognitive Model](#)

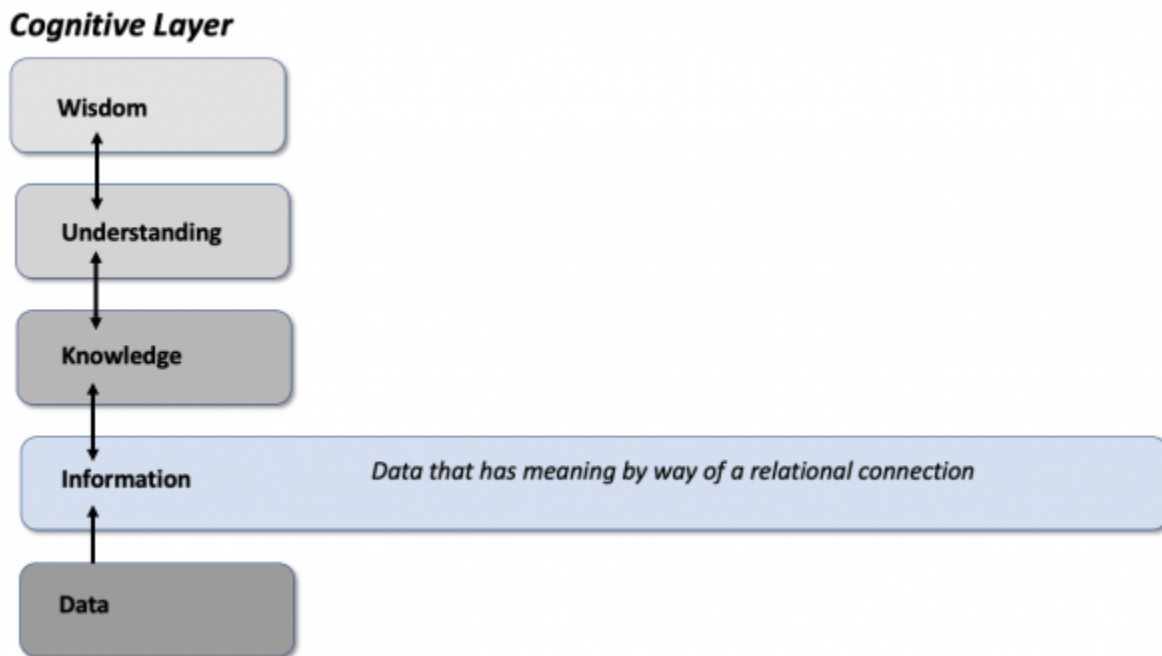


Figure 1: The Information Layer of the Cognitive Model

Yingxu Wang ¹⁾ describes **Information** as the second level of cognitive objects that represents or embodies the semantics of data and facts collected from the real world or yielded by mental processes. Information is the third essence for modeling the natural world in addition to matter and energy as described in the information-matter-energy-intelligence (IME-I) model, which shows the interaction between the abstract, natural, and physical worlds.

Yingxu Wang ²⁾ defines **Information** as a general form of abstract objects perceived by human brains and represented by symbolic, mathematical, communication, computing, and cognitive systems. According to this definition, anything intangible, that the brain may acquire and process or which a computing/communication system may manipulate and convey, is a kind of information. However, anything tangible that cannot enter the brain is not information, even though its attributes, quantity, and properties are information. Any product and/or process of human mental activities results in the generation of information.

In classic information theory, information is treated as a probabilistic measure of properties of the message in signal transmission. The early notion of information was highly influenced by the thermal dynamic concept is known as entropy, which denotes the extent of the trend of a system towards disorder or randomization. Classic information theories focused on information transmission rather than the information itself. The the measure of the quantity of information is highly dependent on the receiver's subjective judgment on the probability distributions of signals in the message.

Stavros and Albrant ³⁾ define **Information** as a concept aggregating data concepts together, in other words, **Data** that has been given meaning by way of relational connection.

1) 2)

Yingxu Wang, Formal Cognitive Models of Data, Information, Knowledge, and Intelligence, WSEAS Transactions on Computers Accessed: 29 September 2021, E-ISSN: 2224-287, Column 14, 2015, Page 770-781 <http://www.wseas.us/journal/pdf/computers/2015/b5072610-109.pdf>

3)
Stavros, Robert W. and Albrant, Jeremiah; Engineering Governance, SPAWAR, October 9, 2007,

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