

# Logic and Intuition

Bertrand Wong  
Eurotech, S'pore Branch  
Email: bwong8@singnet.com.sg

## Abstract

This paper aims to inspire thinking on the capabilities and potential of the human brain. The brain apparently has great potential for development and great untapped capabilities. Practically everyone is keen on improving his mental capacity, especially the capability of logical reasoning, that is, the ability in utilising logic to achieve the desired outcomes. It appears that logic is equated with intelligence and is regarded as the most important aspect of thinking by many (though emotional intelligence is now the new kid in the block which seems to be gaining traction). The author here looks at reasoning or logic, as well as intuition, from a different and perhaps unique perspective.

**Keywords:** Reasoning; intuition; comprehension; thought; superior powers.

## 1 Introduction

Before proceeding, it would be appropriate to first state what logic is. Logic is the principle or method by which a truth or correct conclusion is arrived at – it is a deliberate process.

Next, intuition. Intuition is the capability of knowing the truth with or without the aid of conscious reasoning – it is evidently an instinct, an internal feeling of certainty or sureness about the veracity, the truth or falseness of some proposition, a sixth sense as some may call it which is also capable of making predictions or forecasts, for example, the sense of impending danger, the sense about a person's character, etc.

We have always taken pride in our ability to reason or use logic. We admire and call someone smart if he shows great capability in the use of reasoning or logic. Such a person may not really be as smart or as intelligent as he appears to be for reason or logic is evidently secondary to intuition, as this paper would show.

## 2 Intuition versus Logic

It is evident only humans and animals, the living beings of nature, have intuition, besides reasoning ability. Artificial, man-made contraptions, such as computers, may have reasoning ability (by just following the rules laid down by their human programmers, computers arrive at “conclusions”) but they evidently do not possess intuition.

Intuition is evidently the ability to arrive at an “idea” or “conclusion” without apparent reasoning, providing the “aha” moment, the immediate insight or realisation out of nowhere, apparently due to the workings of the unconscious mind.

Reasoning is a conscious process, evidently the work of the conscious mind. How do we know whether a chain of reasoning is sound or valid? We know that a reasoning is sound

evidently because our intuition is assured through the reasoning process that a statement is true. In other words, the reasoning process is an aid to the intuition, assuring the intuition that a statement is true, or, false (or even, undecidable as to whether it is true or false), in which case we (our intuition) would “feel certain” that the statement under consideration is true, or, false (or, undecidable as to whether it is true or false). It is of course possible to “feel certain” that a statement under consideration is true just through pure intuition, without recourse to the reasoning process. For example, simpler statements such as “ $1 + 1 = 2$ ”, “ $2 - 1 = 1$ ”, etc., that is, axioms (the word “axioms” has a few meanings, one of which is “statements which are evidently or obviously true without the need for proof, or, confirmation of their truth or validity through the reasoning process”), are “obviously true” (to the intuition) without any recourse to or need for the reasoning process. Evidently it is when the intuition is uncertain whether a statement is true or not that the reasoning process, plus possibly even experimentation to affirm the reasoning, is needed to assist it.

It is evident that understanding, insight and knowledge are the result of intuition. Reasoning is evidently just an aid to the intuition, to help it understand something. It can thus be said that creativity and original ideas (the “aha” moments) are the result of intuition, aided of course by reasoning.

Hence, a mind that knows something intuitively without recourse to reasoning can be regarded as more superior than a mind that needs reasoning as an aid to know that thing. For example, an intelligent person may understand something without the need for explanation while a less intelligent person may need a detailed explanation to understand that thing and may have difficulty understanding even with the explanation.

Therefore, reasoning or logic, though important, is evidently over-rated and secondary. Intuition is evidently of paramount importance to thought.

### **3 Logic: Short-Comings and Role**

There are also some problems relating to logic.

Firstly, logic could not always be relied on, for according to Godel’s incompleteness theorems [4] a proposition or statement might be true but not amenable to logical proof.

Secondly, logical reasoning could end up in paradoxes [9], which casts aspersions on its efficacy, for example, Zeno’s paradoxes, the most famous of which is perhaps the “Achilles and the tortoise” paradox wherein the logic shows that Achilles would never be able to overtake the tortoise which was given a head-start in a race.

In the last resort when logic fails to deliver the correct results, intuition perhaps together with physical experiment becomes the only recourse.

It is evident that intuition or hunch plays an important part in the brain worker’s occupation, for example, the scientist has a hunch or strong feeling about a physical phenomenon and invents a theory which explains it, a theory whose veracity he would attempt to affirm by physical experiment.

There is the possibility of extra-terrestrial beings, should they exist, being capable of knowing through pure intuition alone without any recourse to reasoning or logic, which could be considered a waste of time and effort, or some other superior powers such as telepathic powers. These extra-terrestrial beings could possibly possess both more superior physical and mental powers compared to human beings due possibly to the more superior make of their physical bodies and brains or more superior genetic make-up. Perhaps, to the religious, God is the Embodiment of such a being, being all-knowing and supreme.

Though intuition is evidently paramount, logic should not be discounted – logic is still evidently the important assistant of intuition. In many fields of work, logic is demanded for

gilt-edged certainty, for example, in mathematics proofs or logical principles are always required to support theorems. Logic has apparently become an indispensable aspect of our culture wherein it is automatically associated with intelligence, whereas intuition does not seem to be so highly regarded. The position is such that if a person, for example, a mathematician, states that he is certain that a statement is true he would not be credible or believed unless he could provide the proof or logical principles to support the statement. However, as described above, by Godel's incompleteness theorems [4], the proof or logical principles which support the statement might not be obtainable if the statement were indeed true. This is a great problem of logic.

There is however a draw-back with intuition despite its evident primacy. Anyone, even a fool, could easily fake it by stating that his powerful intuition affirms the truth of a proposition. How then could we find out whether he is faking? The most direct way evidently is to request him to explain why he is certain that the said proposition is true wherein he would have to provide the logical principles which support the proposition, that is, provide the evidence or proof that the proposition is true. This would evidently make faking difficult if not impossible.

Hence, though reasoning or logic has some short-comings and is evidently subordinate to intuition, it has an important role in determining the veracity of a proposition.

#### **4 Conclusion**

Though intuition is evidently of primary importance to thought, logic evidently plays an important supporting though secondary role. Without the aid of logic, the intuition could be lost. The part played by logic may be summed up as follows: when a piece of information or proposition is too large or complex to be understood or "digested" by the intuition, logical reasoning or explanation breaks it down to smaller, more understandable, "more digestible", pieces so that the proposition may be at last understood by the intuition, that is, logical reasoning or explanation should render the proposition obviously valid or true, or the reverse, to the intuition. Intuition is evidently the master-mind which senses and understands what logic is up to.

#### References

- [1] G. Chaitin, Randomness and Mathematical Proof, Scientific American, Pages 47-52 (May, 1975)
- [2] P. J. Cohen, Set Theory and the Continuum Hypothesis, W. A. Benjamin, Inc., 1966
- [3] M. Dummett, Elements of Intuitionism, Clarendon Press, 2000
- [4] K. Godel, On Formally Undecidable Propositions of Principia Mathematica and Related Systems, Dover Publications, Inc., 1992
- [5] D. Hofstadter, Godel, Escher, Bach: an Eternal Golden Braid, Basic Books, Inc., 1979
- [6] M. Machover, Set Theory, Logic and Their Limitations, Cambridge University Press, 1996
- [7] B. Russell, Introduction to Mathematical Philosophy, Allen and Unwin, 1919
- [8] B. Russell, Logic and Knowledge, Allen and Unwin, 1956
- [9] R. M. Sainsbury, Paradoxes, Cambridge University Press, 2009
- [10] J. R. Shoenfield, Mathematical Logic, Addison-Wesley, 1967
- [11] J. van Heijenoort, From Frege to Godel: a Sourcebook in Mathematical Logic, 1879-1931, Harvard University Press, 2002

[12] H. Wang, *From Mathematics to Philosophy*, Routledge & Kegan Paul, 1974