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[Seized by Agreement, Swamped by Understanding](#)

Fuzzy Logic: A Key to Shared Wisdom

Vladimir Dimitrov and Judith Bihl Dimitrov

Abstract

The ancient mythology could serve as an effective medium for metaphorically conveying complex concepts and principles to a broad spectrum of people. In this paper we show how the fuzzy logic approach can be used to translate the metaphoric language of ancient myths and legends into a 'soft' scientific paradigm which helps us to understand better the social complexity of our time.

The Wisdom of Humanity combines in its indestructible integrity both the rationality and irrationality of human thinking and acting. Logic is the torch of rationality in the darkness of unknown and uncertainty. Myths, legends, metaphors and paradoxes are the multifaceted eyes of irrationality - through them we can see in the darkness of unknown and uncertainty without any other torch. On the boundary between the rational and irrational is Fuzziness.

Human beings are 'at root' irrational (Williams 1988) - the hidden power of their illogical intuition challenges constantly the constraints and 'norms' of rationality. Any discovery, before it happens, always seems irrational - it challenges and contradicts rationality. After it happens, rationality adopts it immediately - it becomes part of a new rational explanation. Just at the border, just at the edge of this transition, is the zone of fuzziness.

How often does that burning feeling of an approaching insight bring us disquiet: the old is not accepted any more, the new is felt almost in certainty - but when we try to articulate it in words it seems so unclear, so imprecise, so fuzzy, that rationality does not tolerate it, attacks it, rejects it.

Fuzzy Logic tolerates the 'conceptual twilight' - we can say 'Yes and No' at the same moment, we are at ease with 'More or Less', 'Maybe' and 'Possibly' in our explanations (Kosko 1992). Linguistic paradoxes do not bring us to frustration or passivity, but on the contrary - they help us to see better what is beyond the parallel use of opposites (Lakoff 1987), to understand the 'game of words', and make a leap into another space where what was heretofore known as 'truth' dissolves into shadows: the shadows interweave, interlace, intertwist, and from the fuzzy symplectic ball they build emerges the New.

Fuzzy logic helps us to penetrate into the wisdom of ancient myths and legends. The situation described in a myth is generalized, put into a broader context that relates to a spectrum of real life situations at the same time.

The Irrational Language of ancient myths becomes a rational tool for analyzing amd understanding the complexity of real life situations.

The sword of Damocles is suspended by a single hair over the head of a courtier of ancient Syracuse as a reminder of the insecurity of a tyrant's happiness: - this myth ceases to be only a story about Damocles whom Dionysius of Syracuse (4th c. BC) feasted while a sword hung over him. It is generalized into a powerful explanation of a myriad real life situations impregnated with imminent danger, impending disaster and threat.

The Sisyphean labour does not relate only to that king of Corinth condemned after death to roll a heavy stone up a steep hill, only to have it always roll down again when it neared the top, but to all situations of endless and unavailing trials of people trying to achieve what cannot be achieved.

The Procrustean bed is not only a name of a mythological place to rest where travellers were stretched or mutilated by Procrustes, a legendary robber and brigand, but applies to any arbitrary standard to which strict conformity is forced.

Pandora's box does not label only the magical present given by Zeus to Pandora, which contained all human ills, but relates to all sources of unexpected extensive troubles.

Using fuzzy logic we are able to estimate the degree of compatibility between the metaphoric messages contained in ancient myths and the explanations we give to complex social phenomena and processes. For example:

- to what extent does the management of an organisation resemble the metaphor of the Procrustean bed?
- how strongly does the threat to human life caused by ozone holes (carbon dioxide emissions of modern cars, nuclear wastes and numerous other polluters) relate to the metaphor of Damocles' sword?
- how great is the similarity between the message contained in the 'Pandora box' and the nuclear power stations in Eastern Europe and Russia?
- to what extent do the efforts towards social justice, human emancipation and fulfilment in an ecologically sustainable society resemble the task of Sisyphus?

A Fuzzy Algorithm for combining 'rational' and 'irrational' explanations of complexity:

1. Generate rational explanations of different aspects of the studied social process (these explanations represent only partial descriptions of the

process, as the complexity of it is incompatible with any black-and-white rational description).
2. Select partial descriptions which do not contradict (harmonise, complement, clarify) one another.
3. Combine non-contradictory descriptions into a general (logical) description: it builds the non-fuzzy, 'rational' part of the complexity model.
4. Select partial descriptions which contradict one another.
5. Using fuzzy logic, generate various combinations between the contradictory descriptions, that is, combine them together in some common (possibly paradoxical) descriptions: they build the fuzzy 'irrational' part of the complexity model.
6. Look for a myth (legend, metaphor) compatible with each of the above fuzzy descriptions and estimate the degree of their compatibility.
7. If the degree of compatibility with some myth(s) is 'high enough', the myth(s) is(are) adopted as operational holistic explanation(s) of the 'irrational' part of the model.
8. If no appropriate metaphor is found, the algorithm is recurrently executed starting with point 5 (based on fuzzy logic, new combinations between the contradictory descriptions are generated) until appropriate metaphors are found or the time for search expires (in the latter case, the model is represented by its 'rational' part only, found at point 3 of the algorithm).
9. Both the 'rational' and 'irrational' parts of the model are used for building an integral description of the studied process.

References

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