

ISAO 2018 – Miniprojects

Introduction

Many concepts (or entity types, universals, etc.) have wide application both in everyday contexts and in specialist domains. Usually such concepts acquire, or appear to acquire, different forms and meanings in these different contexts, perhaps forming not a single unified idea but rather a family of related ideas. Think for example of the different notions of ‘time’ appearing in:

- the time at which something happened (e.g., in history)
- the time it takes to do something (e.g., in manufacturing or business)
- the time for which something is scheduled (e.g., in travel or show business)
- time as a physical variable (e.g., in mathematics and physics)
- time as a beat or pulse (in music or dance)
- time as something we experience passing

It is a valuable and interesting exercise to analyse the different meanings associated with a given concept or term and to try to characterise the differences in exact terms, e.g., in terms of different logic rules they obey or different uses to which they can be put. One possibility might be to try to explain all the different meanings in terms of some one fundamental meaning — but which one? Time as a physical variable, time as experienced, or what? How do all these different ideas of time fit into the treatment of time in existing ontologies?

Task

Listed below are a number of fundamental concepts (or concept areas represented by several related terms) together with various contexts in which they can take on different meanings.

CONCEPT	CONTEXTS
‘Person’ or ‘human being’	Medicine, psychology, sociology, anthropology, law
‘Act’, ‘action’, and ‘activity’	Psychology, law, robotics, computing, engineering, chemistry
‘Part’, ‘piece’, ‘component’	Manufacture, art, biology, philosophy
‘Place’, ‘location’	Geography, travel, sociology, psychology
‘Meaning’	Linguistics, art, literature, computing, anthropology
‘Group’, ‘collection’, ‘set’	Mathematics, sociology, biology
‘Concept’, ‘category’	Psychology, ontology, linguistics, data science
‘Function’	Devices and manufacturing, social roles in society, medicine, anatomy
‘Event’	Biology, society, law, programming

Instructions

1. Either

- Choose one of the concepts and find 1-2 other people interested in the same concept
- Find 1-2 other people and choose a concept

NOTE: each group should work on a different choice from the above topics. Additional topics could be used so long as they are approved by staff at the school.

2. Investigate together what it means in several contexts.

3. Present the findings in the “project presentations” slot on Friday afternoon. This will be a 10-15-minute presentation in which the findings of each team are presented in a clear and accessible way.

Optional, but encouraged: add a digest of the results to the term list at the IAOA Education Wiki at <http://iaoaedu.cs.uct.ac.za/>, using the similar layout/style as, e.g., the “Role” entry.

You are allowed to use any material you want. For any write-up (including slides), do ensure to give proper attribution to the source. Lecturers will also be available to answer any questions.