

Designing language for capturing meaning

Table of contents

1 Introduction.....	2
2 Free of topical syntax and semantics.....	2
3 Decoupling truth and meaning.....	2
4 Accomodating different semantic scopes.....	3
5 Accomodating different identifying expressions for the same entity.....	3

1. Introduction

This page is about a component of my so-called [Semantic Infrastructure](#) which I have labelled a *Significance Language*. It is also a key component in the [ObjectTalks](#) Discourse representation system. The significance language presented here is baptized *The ObjectTalks Significance Language*. The significance language introduced here is design to:

- have simple syntax and semantics
- allow the significance of any number of topics to be captured
- align well with domain models of formal logic
- align well with relational algebra
- accomodate object oriented intuitions well
- be easy to transform into other representations

On this page the design rationale for the ObjectTalks significance language will be presented. In this exercise the main source of inspiration will be natural languages such as English language which obviously are quite capable where their expressive capabilities are concerned.

2. Free of topical syntax and semantics

Natural languages are pretty sophisticated phenomena. In general they accomodate eloquent discourse on a great variety of different topics inspite of the fact that these languages, in general, have no syntax and/or semantics specific to any particular topic of discourse.

For example, speaking about a sport like Tennis is quite common even though no syntactic or semantic machinery particular to the topic of Tennis to be found when the English language is subjected to analysis.

Obviously, changing the topic of discourse from Tennis to Baseball requires no adaption in the syntax or semantics of the English language.

Mimicing this feature of natural language, the ObjectTalks Significance Language will have no semantic or syntactic constructs particular to any topic of discourse.

3. Decoupling truth and meaning

Consider for a moment the sentence: *Soccer is a Chinese martial art form*. This sentence will in general be considered to represent a false statement.

In spite of this fact this sentence is readily translated into for example the Dutch language to become: *Voetbal is een Chinese vechtsport*.

Thus irrespective of the fact that a particular statement may be true or false in a given

situation, as testified by the readily available translation of false statements, the meaning of a statement is independent from whether or not said statement is true.

Mimicing this feature of natural language, the ObjectTalks Significance Language will decouple the true value of a statement from the significance or meaning of said statement.

4. Accomodating different semantic scopes

Natural language also helps us to appreciate that systems of belief, have much influence on what is percieved to be the meaning and/or truth value of a particular expression.

An expression such as *The greatest soccer player of all time* will often be synonymous with the Brazilian soccer star *Pele*. However, in general, depending on ones personal preferences, this expression can refer to many soccer players.

The ObjectTalks significance language should accomodate choice of system of belief or semantic scope. Thus meaning is defined relative to a chosen semantics scope.

5. Accomodating different identifying expressions for the same entity

The Babylonians appreciated the *morning star* as the last "star" visible in the morning and the *evening star* as the first "star" visible in the evening.

Later they discovered that both "stars" were one and the same.

The ObjectTalks significance language should, in principle, accomodate any number of identifying expressions for an entity.