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A SEMANTICS MODEL FOR IMPERATIVES

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To obtain an adequate semantics model for imperatives we will first consider changes, then human actions and finally human actions carried out in accordance with imperatives. Suppose that everything required by an imperative could be recorded on a motion picture reel which moved through a projector at the rate of ten frames per second. Thus we could think of the changes demanded by an imperative as a sequence of jumps from one interval of a tenth of a second during which nothing changed to another interval of a tenth of a second during which nothing changed. Let us call these static intervals elementary time intervals. What will be said in the sequel regarding elementary time intervals of a tenth of a second is true of elementary time intervals of any other length.

Let us take as our time scale the one tenth of a second time intervals before and after the beginning of the common era some 1977 years ago. We will make the simplifying assumption that no change can take place during any elementary time interval. Thus during each elementary time interval each of the present tense indicative sentences of English will have a constant truth value. What will be said in the sequel regarding English will be true of any other natural language.

We will call the state of affairs during one of these static elementary time intervals, an elementary world interval. Thus we can specify elementary world intervals by functions which assign 1 or 0 to each of the present tense indicatives of English—where we are to understand that when a function assigns 1 to a sentence, that sentence is true in the elementary world interval which the function specifies and when a function assigns the value 0, the sentence is false in the elementary world interval which the function specifies.

Let S be the set of present tense indicative sentences of English, then 2^S is the set of functions assigning truth values to these sentences. We will confine our attention to that subset T of 2^S in which the time indexing characteristics of English are conformed to, e.g., if $f \in T$ is an assignment of truth values to the present tense indicative sentences of English, then for exactly one integer n s.t. $-\infty < n < \infty$, f will assign 1 to 'it is the n'th one tenth of a second of the common era'; for exactly one integer n s.t.

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