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## A Cognitive Linguistic Analysis of the Concept TEMPERATURE in English and Arabic

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### Abstract

For various historical, political as well as economic reasons, the English language is favoured as the universal language of science over other languages including French and German (Tardy, 2004). This naturally entails that students who are conversant in English have an advantage over those who are not in the acquisition of scientific knowledge. In relation to this, research on the misunderstanding of scientific terms in different languages shows that students who are speakers of non-western languages in particular face difficulties in conceptualising scientific concepts. There is evidence to suggest that these students' pre-existing knowledge about scientific terms and the polysemous nature of such terms are factors that influence their conceptualisation of the terms. This finding is the motivation behind the present cognitive linguistic study of the term *temperature* and its equivalent in Arabic, the compound *درَجَةُ الحَرَارَةِ* (*darajatu al-ḥarara*). Using a cognitive framework, namely Lakoff's Idealised Cognitive Models (ICMs), the study analyses the conceptual similarities as well as differences between the terms. The study also analyses the English term *heat* as the second free morpheme of the compound *درَجَةُ الحَرَارَةِ* is *الحَرَارَةُ* which is the Arabic rendering of *heat*. The meanings and different uses of the terms are examined to analyse the ICMs that are evoked in each language. The results of the analysis reveal that the ICMs of English and Arabic terms under study overlap, and interestingly, also differ.

**Keywords:** Concept, idealised cognitive models, polysemy, temperature, heat

### 1. Introduction