Supplementary Material

A mathematical model of semantic access in Lexical and Semantic decisions

SM Figure 1

Mean RT for concrete and abstract concepts in LDT and SDT

Note. Mean RTs across the 120 concepts used in both studies. In Panel A, visual inspection of the LDT shows that the mean RTs between concrete and abstract concepts are not statistically significant ($t(118) = .28$, $p = .78$). In Panel B, there is a statistically significant difference between concrete and abstract concepts in mean RTs for the SDT ($t(118) = -.85$, $p < .001$). Revealing that concrete concepts are overall faster than abstract concepts whenever a semantic decision is made, which is consistent with previous literature (i.e., Schwanenflugel, Harnishfeger, & Stowe, 1988; Plaut & Shallice, 1993; Walker & Hulme, 1999).

SM Figure 2

Correlations of RTs with Valence and Arousal in the SDT
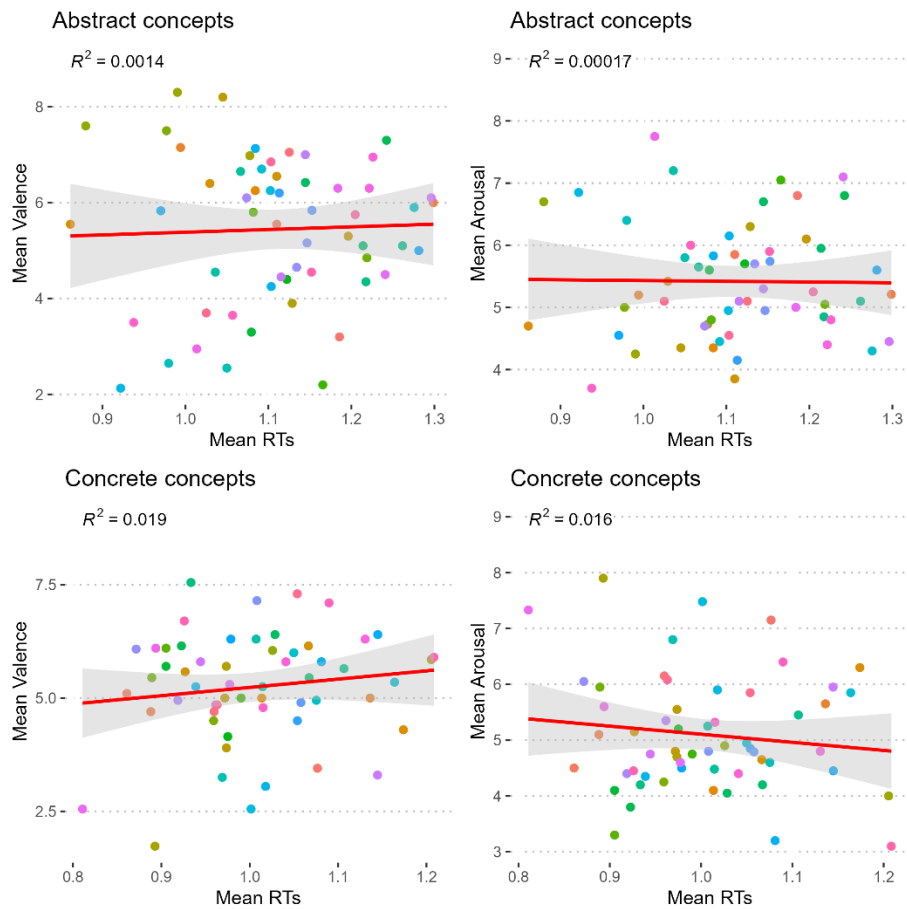
Note. Valence and arousal were obtained in the Stadthagen-Gonzalez, et al. (2017) database by matching the words used in the SDT task. In total, 114 out of 120 words were matched across databases, representing 95% of the words used in SDT. Correlations using concrete words were not significant for either valence (r = .002, p = .99) or arousal (r = .065, p = .63). The same finding was replicated with abstract words, with non-significant correlations with both valence (r = .038, p = .78) and arousal (r = -.013, p = .92). This suggests that the emotional content of both concrete and abstract concepts does not account for the RT distributions in our results.