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# A logical analysis of typicality

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**Abstract:** We propose a logical analysis of the concept of typicality, central in human cognition (Rosch,1978). We start from an extension of Description Logic ALC (a computationally tractable fragment of First Order Logic, used to represent concept inclusions and ontologies) with a typicality operator T to consistently represent inheritance with exceptions (e.g. (i)typical birds fly, (ii) penguins are birds but (iii)typical penguins don't fly), and we strengthen it to separately reason about typicality for different aspects (e.g., flying, being feathered). The resulting logic enforces interesting non monotonic inferences, assumes individuals are as typical as possible, deals with irrelevance. Differently from previous approaches, it deals with separate inheritance of typical properties among subclasses (e.g., penguins do not inherit the property of flying but can nonetheless inherit other properties e.g., being feathered). The strength of this approach, with respect to more procedural alternatives, is its strong, simple semantic characterization of typicality and entailment.