Short- and Long-Term Effects of Unconscious Brand Logos

Eva Van den Bussche¹, Charlotte Muscarella¹, Bart Aben¹, Karolien Smets², Eric Soetens¹, & Gethin Hughes³

¹Vrije Universiteit Brussel, Brussels, Belgium; ²University of Leuven, Leuven, Belgium; ³University of Essex, Colchester, United Kingdom

Introduction
The effects of unconscious information on behavior are assumed to rapidly decay within a few hundreds of milliseconds (e.g., Ferrand, 1996; Naccache, et al., 2002). This casts doubt on the applicability of unconscious influences in daily life. In a masked priming paradigm we studied whether time (as defined by the Stimulus Onset Asynchrony or SOA) and the degree of semantic relatedness between prime and target modulate the neural activity triggered by unconscious logos of well-known brands. This allowed us to further explore the supposed short-livedness of unconscious representations and the potential of these representations to trigger a wide spread semantic network.

Method
- Participants (N = 24) performed a lexical decision task on the targets
- Targets were letter strings and primes were 5 well-known brand logos
- Each prime was combined with:
  1. A related brand target (e.g., \(\text{M}\) followed by “MCDONALD’S”)
  2. An unrelated brand target (e.g., \(\text{M}\) followed by “LACOSTE”)
  3. A related non-brand target (e.g., \(\text{M}\) followed by “HAMBURGER”)
  4. An unrelated non-brand target (e.g., \(\text{M}\) followed by “CAR”)
  5. Pseudowords (e.g., \(\text{M}\) followed by “NOOLWEF”)
- SOA (284 or 2569 ms) was manipulated between blocks

Results

Behavioral Results
- An objective visibility test showed no prime awareness in the short (d’ = 0.03, p = 0.34) and long (d’ = -0.20, p = 0.05) SOA.

EEG Results
- N400: A negative ERP deflection over the centro-parietal scalp linked to semantic processing

Discussion
Behaviorally, unconscious brand logos (e.g., \(\text{M}\)) facilitated categorization of related brand names (e.g., MCDONALD’S) and related non-brand words (e.g., HAMBURGER). The EEG results revealed a clear N400 modulation: the N400 deflection was larger for the unrelated compared to the related conditions (i.e., the N400 priming effect). Visually, this effect was detectable in the brand target condition with a short SOA and in the non-brand target condition with a long SOA. This suggests that both target condition and SOA influence the N400 priming effect. Overall, these results suggest that unconscious brand logos can be semantically processed, that this processing is not necessarily short-lived, and that this seems to be moderated by the degree of semantic closeness between prime and target.

Contact: Eva.Van.den.Bussche@vub.ac.be