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Evolutionary Psychologically Predicted Biases
in the Manifestation of Cognitive Dissonance

An Exploration

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degree of

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Peter Clemerson

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ABSTRACT

It was hypothesised that over evolutionary time, selection pressures have generated a cerebral modularity which detects survival and reproduction related contradictions preferentially over others. It was also hypothesised that contradiction-detecting mechanisms are rendered less effective if contradictions are implicit rather than explicit, or refer to the future rather than the immediate present.

Explicit and implicit contradictions pertaining to the above conditions were embedded in narratives to test these hypotheses. Participants read the narratives via a computer screen, pressing the keyboard space bar to progress through the narratives line by line. A programme recorded reading times (RTs) of each narrative line. An extended RT for a line contradicting an earlier one was interpreted as indicating the generation of cognitive dissonance consequent to detecting the contradiction. A questionnaire was used to ascertain participants' subjective reactions.

Analysis of the RTs provided some evidence that the hypothesised modularity exists for reproduction-related contradictions. The results, particularly those relating to survival, suggest that detection of subject matter related modularity is hindered by heterogeneous phrasing and/or the generation of mortality-related emotions. As predicted, implicit contradictions were less frequently noticed. The phrasing employed did not yield any timeframe-related difference in noticeability.

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State Insurance Building,
1, Willis Street
Wellington

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INTRODUCTION

Human minds absorb propositional statements from a wide range of sources covering an equally wide range of subjects over long time periods. Festinger (1957) proposed that any pair of retained propositions can be placed in one of three categories: consonant, dissonant or irrelevant. Consonant pairs are logically and/or factually consistent with each other while dissonant pairs are those that are mutually contradictory and cause psychological discomfort. Irrelevant pairs are those that have nothing to do with each other. The psychological discomfort or dissonance caused by the retention of mutually contradictory pairs of propositions is the motivation for some form of resolution. Such resolution takes many forms which Festinger (1957) explores in detail. In this thesis, I propose to explore variation in the degree to which the conscious mind becomes aware of contradictions present explicitly or implicitly in pairs of propositions and therefore the degree to which someone experiences the resulting dissonance.

In principle, any newly retained proposition could be compared with all previously retained propositions currently stored consciously and unconsciously in memory and assessed whether it was consistent, contradictory or irrelevant with respect to all others. Carried out sequentially, even with limited search and comparison facilities, such comparisons are possible in principle but, as more propositions are retained, ever longer periods of time would be required. Clearly the mind does not work like that.

When a new proposition is absorbed, some form of comparison with current knowledge can take place. It often does but need not. Knowing that Bob was in hospital from last Monday until last Thursday and then hearing that Bob was out in his garden during the intervening Wednesday, a person may or may not pose the question “How could he have been?” or something similar. It is also the case that on separate occasions, a person may learn first one fact and later another contradictory fact, and never compare them. Thus, Dinosaurs lived tens of millions of years ago and the Earth was created approximately

6000 years ago are two propositions which someone may learn on different occasions but never compare.

When someone does make immediate comparisons for consistency, it means that some form of relevance check has taken place. As the mind does not contain serial searching and comparison facilities in the form of a sequentially processing computer with a Von Neumann architecture, some form of assessment must take place with the new information being compared in detail with only that other information that is relevant to the new, relevant here meaning either consistent or contradictory.

Given that comparisons between two propositions may or may not take place, evolutionary considerations suggest that the making or not making of comparisons should not take place on a random basis. Some comparisons would be of greater relevance than others to survival and reproductive success. Evolutionary Psychology (EP) therefore predicts that mechanisms should have developed to ensure that those comparisons of greater relevance to survival and reproductive success do take place while those of less relevance need not. The benefits to survival and reproductive success to be obtained from the resolution of contradictions relevant to these subjects is hypothesized as the selection pressure for the capacity for the phenomenological experience of discomfort known as dissonance. Such discomfort is hypothesised as the proximate trigger for the search for resolution.

The same logic applies to both explicit and implicit contradictions.

Contradictions of relevance to survival are those which have as their subject matters the life of the person, bodily injury, food, shelter, security and perhaps reputation (Milinski, Semmann, & Krambeck, 2002). Contradictions of relevance to reproductive success would have as their subject matter fertility, fidelity and sexual attractiveness.

If the suggestion that the noticeability of contradictions is subject matter dependent is found to be true, it generates a very large new field of research. In this initial exploration, only a few early steps into this area are taken.

The next section examines the modularity of the brain and suggests that the non-homogeneity of cerebral processing implicit in subject matter biases should be encompassed within the modular view of the brain. It also examines the details of cognitive dissonance and likens it to all other phenomenological experiences which force well-being promoting activity upon the experiencer. Recent discoveries of lactose tolerance in the adults of cattle herding societies have shown that human evolution, at least for physiological abilities, can take place quite quickly, requiring periods of time of only a few thousand years' duration for local distribution. However, it is hypothesised that a much longer time has been required for the evolution of a distinct and universal type of phenomenological experience such as cognitive dissonance. The development of language would have enabled humanity to hold ever finer distinctions of meaning in mind and therefore have enabled cognitive dissonance (CD) to be experienced ever more frequently. In the next section therefore, the timing of the evolution of language is also explored and the view developed that CD and language may well have co-evolved.