

Background

- Theories and models which are used in media psychology research are often informed by understanding from other fields, most notably the Cognitive and Brain Sciences, Biology, Sociology, Computer Science, and Engineering.
- If the underlying assumptions of our theories and models are not continually updated in light of the current scientific milieu, media psychology research suffers.
- With this in mind, we review the LC4MP, one of the first attempts to look into the “black box” of media processing. The LC4MP has been cited over 500 times since its publication (as the LC3MP)¹ in the *Journal of Communication* over 15 years ago, and has been foundational for large swaths of research.

Foundations and Current State of the LC4MP

LIMITED CAPACITY INFORMATION PROCESSING

- The LC4MP proposes a single, generic pool of cognitive resources which is not dependent on modality.²
- Development of the information introduced^{3,4} and dynamic message sensation value⁵ measures have greatly contributed to understanding of how stimulus features contribute to resource allocation.

EMOTIONAL PROCESSING

- The LC4MP relies on a dimensional conceptualization of emotion. Cognition is modulated by emotion, and vice versa.²
- This approach to emotion has been supported by recent research⁶ which provides evidence of the a) non-discrete nature of

emotion⁷; b) inseparability of emotion from cognition⁸.

MOTIVATION

- The LC4MP derives its notion of motivation from the Evaluative Space Model (ESM)⁹ wherein two separate motivational impulses (approach/avoid) act and interact to bias cognitive processing toward or away from aspects of the environment.
- Consistent with the LC4MP’s curvilinear predictions about media engagement, robust behavioral and neuroimaging evidence demonstrates that balanced difficulty and ability leads to increased attentional engagement, high levels of self-reported intrinsic reward, and networked connectivity between structures in cognitive control and reward networks.¹⁰

Anomalous Findings and Future Research Directions

PERSUASIVE MESSAGES

- The LC4MP predicts that Message Sensation Value has a curvilinear relationship with message encoding. Recent research has found that variations in MSV do not elicit changes in functional connectivity between occipital and temporal cortices, which would reflect diminished encoding.¹¹
- What, then, is the processing mechanism which could lead to demonstrated differences in memory for high-MSV and low-MSV messages? Promising advancements in persuasion neuroscience research provide avenues for clarification.¹²

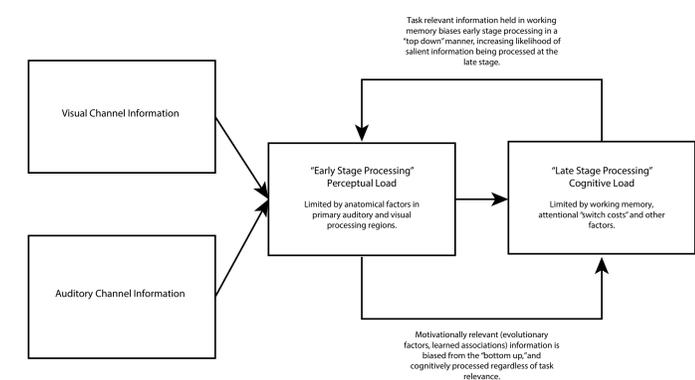
EMOTIONAL PROCESSING AND COACTIVATION

- The LC4MP predicts that coactivation of the appetitive an aversive systems will lead to additive effects.
- Research has shown, though, that this is not the case. Coactivation seems to lead to an inhibitory effect.¹³
- Recent work utilizing the Arousal Biased Competition Theory¹⁴ in conjunction with the LC4MP is a promising future direction.

COGNITIVE LOAD AND MOTIVATION

- Recent research has provided support for differential loading of visual and auditory systems during processing¹⁵
- Additionally, it has been found that cognitive “late stage” and perceptual “early stage” processing systems can be loaded independently with different outcomes.¹⁶ Individual differences in resource availability and cognitive control in mediated environments have also been discovered¹⁷ which have not been considered in the model.
- The role of proactive and reactive cognitive control mechanisms¹⁸ in biasing cognitive load and attention is as yet understudied.

Figure 1: Theorized relationships between modality, processing stage, and load.



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