Do Means-End Chains Exist? Experimental Tests of Their Hierarchicity, Automatic Spreading Activation, Directionality, and Self-Relevance  
Joachim Scholderer, MAPP, Aarhus School of Business  
Klaus G. Grunert, MAPP, Aarhus School of Business  

EXTENDED ABSTRACT - Despite its popularity in consumer research, means-end chain theory suffers from problems of unconfirmed validity: the nomological status of its central construct, the means-end chain, is still unknown. The aim of the research reported here was threefold: (a) to reformulate means-end chain theory in a coherent theoretical framework, (b) to derive falsifiable predictions from the framework, and (c) to test these predictions by established experimental methods.

[to cite]:  

[url]:  
http://www.acrwebsite.org/volumes/9139/volumes/v32/NA-32

[copyright notice]:  
This work is copyrighted by The Association for Consumer Research. For permission to copy or use this work in whole or in part, please contact the Copyright Clearance Center at http://www.copyright.com/.
EXTENDED ABSTRACT

Despite its popularity in consumer research, means-end chain theory suffers from problems of unconfirmed validity: the nomological status of its central construct, the means-end chain, is still unknown. The aim of the research reported here was threefold: (a) to reformulate means-end chain theory in a coherent theoretical framework, (b) to derive falsifiable predictions from the framework, and (c) to test these predictions by established experimental methods.

Theoretically, means-end chains can be cast as associative networks with a three-layered structure. Four postulates can be formulated that impose testable restrictions on the layered network structure: hierarchicity, automatic spreading activation, bidirectionality, and self-relevance. The predictions were tested in altogether six experiments.

The basic methodology was the same in all experiments. Two sessions were held with each participant. In a pilot session, each participant completed four different laddering tasks. Each task consisted of four different consumer products varying on three different attributes. After the pilot session, the word material that participants had generated in the laddering task was entered into a database. Individualized stimulus sets were then generated from the database for use in the second session. To avoid carry-over effects, the second session was arranged after a long delay. Each participant completed a sequential priming experiment in which single-presentation lexical decision tasks were used.

Experiment 1 (N=90) was designed to test the hierarchicity and self-relevance postulates. Hierarchicity was tested by examining whether response facilitation effects were higher when primes and targets were directly associated nodes in a means-end chain (attributes and consequences, or consequences and values) than when primes and targets were indirectly associated through a mediator (attributes and values, mediated by consequences). Self-relevance was tested by examining whether response facilitation effects were stronger when primes and targets were taken from a person’s own means-end chain (as measured by the laddering method) than when taken from another person’s means-end chain or from a standardized word list. In this experiment, only bottom-up priming of means-end chains was investigated.

Experiment 2 (N=91) was designed to test the bidirectionality postulate. Bidirectionality was tested by examining whether the results obtained in Experiment 1, where bottom-up priming of means-end chains had been used (attribute, consequence, value), would remain stable when the direction of priming was turned around to top-down priming (value, consequence, attribute).

Experiment 3 (N=30) was designed to ensure that Experiments 1 and 2 were internally valid. In both experiments, the word material representing means-end chains had been elicited by means of a laddering task where different foods had served as product examples. Hence, the generated material shared a common associative context. To test the alternative explanation that a generalized activation of this common associative context might have been responsible for the priming effects observed in Experiments 1 and 2, and not specific activation of particular means-end chains, Experiment 3 replicated the previous experiment, but used only stimulus materials from a food context, i.e. also in the standardized word-list conditions against which all priming effects were benchmarked.

Experiment 4 (N=120) was designed to test the automaticity postulate. Automaticity was tested by examining whether the hierarchicity and self-relevance effects observed in Experiments 1 could be replicated under conditions designed to suppress controlled information processing. In line with standard procedures, short inter-stimulus intervals and a high proportion of fillers and non-words in the word material were used for this.

Experiment 5 (N=65) was designed as a second test of the automaticity postulate. The postulate was tested by examining whether the bidirectionality effect observed in Experiment 2 could be replicated under conditions designed to suppress controlled information processing. Again, short inter-stimulus intervals and a high proportion of fillers and non-words were used to induce automatic information processing.

Experiment 6 (N=30) was designed, in analogy to Experiment 3, to ensure that Experiments 4 and 5 were internally valid. To test the alternative explanation that generalized activation of a common associative context might have been responsible for the priming effects, Experiment 6 replicated the automaticity conditions of the previous experiment, but used only stimulus material from a food context, i.e. also in the standardized word-list conditions against which all priming effects were benchmarked.

Overall, only few of the predictions were met. Hierarchicity, the assumption that means-end chains have a three-layered chain structure (as opposed to a non-hierarchic, single-layered network structure), could only be established in one out of six experiments. Automaticity, the assumption that spread of activation through a means-end chain would still occur when controlled information processing was suppressed, could indeed be established in three out of three experiments that induced automatic information processing.

Results for bidirectionality, the assumption that bottom-up priming effects would be mirrored by top-down priming effects, were favorable. Self-relevance, the assumption that spreading-activation effects would be stronger for means-end chains generated by participants themselves than for means-end chains generated by other participants (strong self-relevance) or materials taken from a standardized word list (weak self-relevance), could partially be established. Evidence for strong self-relevance was found in two out of six experiments, whereas evidence for weak self-relevance was found in four out of six experiments.

The results raise new questions concerning the theoretical foundations of means-end chains. It can be concluded that means-end chains, as conventionally measured by the laddering method, are firmly anchored in people’s memory, but not as firmly as originally hypothesized. The hierarchicity assumption appears to be particular problematic. It appears that the association structure is non-hierarchic, displaying properties of a single-layered network with high associative redundancy. Three areas were identified where additional theoretical work is needed: how means-end-chains enter more complex cognitive structure, the cognitive processes leading to the elicitation of means-end chains in laddering interviews, and the spreading activation processes explaining the retrieval and use of means-end information.