The

Repeated Evaluation Technique

or

'How can we measure attractiveness in a valid way'?

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Abstract

So far, attractiveness has mostly been measured only once, in single-shot studies. Yet, in reality it seems to be a very dynamic variable: specific preferences for faces, objects or consumer products develop over time. This makes it necessary to measure attractiveness in more complex settings during which participants are familiarised with the objects of interest. In a series of studies we tried to achieve this aim by employing the so-called repeated evaluation technique (RET; Carbon & Leder, 2005). The RET simulates everyday experiences by not only exposing participants massively with the stimuli but also having them evaluate the stimuli in many different aspects. The idea of this procedure is to deepen participants' understanding of the material. Experiments using RET have shown that, for instance, highly innovative products benefit from elaboration and familiarisation, whereas preferences for more conservative, low innovative products drop over time. Therefore, the RET seems to be an appropriate technique to be used in applied studies concerned with preferences, attractiveness and concepts of innovativeness.

The idea

How can we measure attractiveness in a valid way? Look at a flower, look at a person! With such categories, the task seems quite easy. But look at a car… and reconsider this question a few months later! For natural categories we seem to have relative simple evaluation techniques for which we do not need very sophisticated measuring procedures; in contrast, especially for product designs this seem not to be true (see Excursus below)

Excursus: Attractiveness

Evaluating the attractiveness of many natural categories (flowers, persons, faces) seems to be quite easy. We just "see" what we prefer, like, favour or even love.

However, for many product designs, this is much harder to decide, particularly what we will like in the future. What we prefer, is often decided only after a long period of time after having become familiar with the material and after having deeply elaborated the material. Thus, for such material, simple evaluation strategies seem to be quite inadequate.

Repeated Evaluation Technique (RET)

But, what is the difference between attractiveness evaluations of natural objects and consumer products? One key factor of consumer products is its design innovativeness due to its high predictor quality for future market success (Mairesse & Mohnen, 2002). However, as Carbon and Leder (2005) recently have shown, innovativeness has dramatic dynamic influences on attractiveness over time (see Excursus below), which seems unique for this object class.

Excursus: Innovativeness

Innovativeness is defined as "originality by virtue of introducing new ideas" (Carbon & Leder, 2005). Thus, innovative designs often break common visual habits.

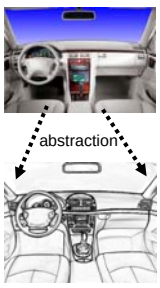
If so, it is highly expectable that innovative designs cannot be interpreted adequately without having elaborated them. The cause: rejection at first sight. However, everyday life experiences tell a different story: Here, people do not always favor familiar designs (Zajonc, 1968; Leder & Carbon, 2005), but seek novelty and prefer new and innovative designs instead of old and conservative ones in the long run (Berlyne, 1950).

Thus, the usual method of measuring designs and products in a single-shot study seems to be inadequate. A more dynamic way of testing is needed. The *repeated evaluation technique,* with a test-retest design and an intermediate elaboration phase where everyday life experiences are simulated, seems to be valid for measuring such dynamics of innovation in particular and attractiveness in general.

Within the *RET*, material is not only evaluated once, but at least twice. The 1st test phase where attractiveness is measured is comparable with usual studies. Then several blocks of massive evaluation of the material follow. These evaluations, which cover a great variety of stimulus aspects, help to elaborate the material with the idea to simulate everyday experiences. After these repeated evaluations, a 2nd test phase of measuring attractiveness finalizes the study.

Typical Material

So far, a great variety of material has been tested with RET. Usually, abstracted material was used which can be systematically varied on several dimensions, such as curvature, complexity and innovativeness. On the right side you can see line drawings with shadings from the original RET study (Carbon & Leder, 2005).

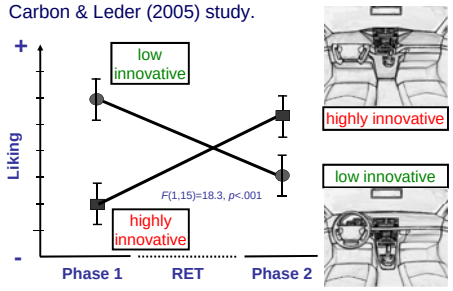


RET in practice

In RET studies a wide range of stimulus classes can be used. First of all, material which is susceptible to undergoing strong dynamic effects is particularly interesting for testing purposes. For instance, car exteriors, car interiors, cell phones, fancy and fashion articles, are interesting object classes for which dynamic aspects are so strong that simple single-shot studies are inadequate and invalid. Typically, RET helps to analyze such dynamic material in a much more ecological way. For instance, dynamic effects of innovation and their impact on linking can be captured.

Typical Results

A typical outcome of RET studies (e.g., Carbon & Leder, 2005; Carbon, Hutzler, & Minge, 2006) is that dynamic variables can be captured in Phase 2. The below plot shows the dynamics of highly innovative vs. low innovative material over time from the Carbon & Leder (2005) study.



Conclusions

The *repeated evaluation technique* (RET) enables measuring of variables which develop dynamically over time. Thus, the RET seems a valuable tool for assisting psychological research which assumes the psychological reality as being quite dynamical.

In sum, RET is easy to use for capturing dynamic effects in basic research as well as in applied cognitive studies.

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