

Multisensual Package Design: Does the so Called Multisensual Enhancement Exist in a Marketing Context?

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Background

In recent years, the subject of “**multisensual stimulation**” in the context of marketing, including aspects such as packaging design, product design and product placement, has experienced growing attention. In this context the expression “**multisensual enhancement**” was coined – meaning an **augmentation of a neural response** to sensory input of one modality by input of another modality. Hence, the more modalities are addressed with a congruent message the stronger the neural response is following an exponential increase. Besides, little is known which factors have a major impact on the success of a multisensual stimulation.

Objectives

The overall objective is to verify the existence of the “**multisensual enhancement**” in a marketing context. Besides, the effect of a multisensual stimulation on purchase related factors **moderated** by the **consumers’ need states** are to be analysed.

The multisensual approach

Face lotion packages that comprised the **sensual modalities optics** (colour and style elements) and **haptics** (surface texture of the material) were developed which - in combination with their presentation (**acoustics**: background music and **olfaction**: ambient odour) - resulted in a **multisensual stimulation** that was capable to different degrees of activating one of two need states that are relevant in the face lotion market. With the help of 10 in-depth interviews two important need states could be identified that influence the purchase behavior of face lotion. These need states are the **need for affiliation** and the **need for achievement**.

Overall, it was expected that a **need state congruent** multisensual stimulation is **better liked** by **consumers with a high respective need state** than by those with a low need state and that a need state congruent stimulation will result in a higher overall liking by respondents with a high need than an incongruent stimulation. Apart from that, it was assumed that the **more sensual modalities receive** a congruent message, **the more the neural networks** in which products and brands are stored **will be activated**.

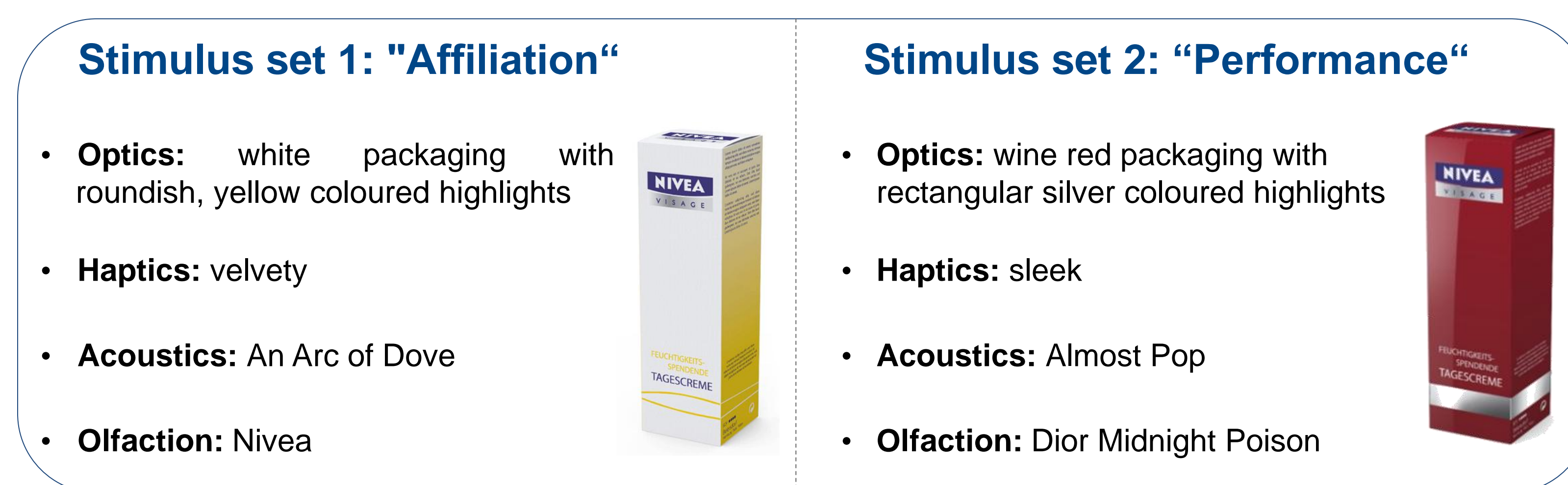


Figure 1: Overview of the multisensual approach

Methodology & Sample

Data collection: To answer the research questions an **experiment** was conducted that took place in a sensory lab (in Goettingen, Germany). The interviews were computer based and took 20 minutes. The sensory modalities including optics, haptics, acoustics and olfaction served as the independent variables of this survey. In total, a 2x2x3x3 design was used varying the sensory stimuli as shown in Table 2 which results, according to a **factorial design**, in 36 combinations of the stimuli used.

Field work: July 2010

Sample: In total, 360 women aged from 18 to 65 were recruited for this survey via telephone. To avoid age effects, age was used as a quota variable dividing the sample into 50% younger (18 to 35 years) and 50% older respondents (36 to 65 years). All participants participated voluntarily, did not reject Nivea as a brand and used face lotion on a regular basis.

optics (2)	red package	white package	
haptics (2)	sleek	velvety	
acoustics (3)	Almost Pop	An Arc of Dove	no music
olfaction (3)	Dior: Midnight Poison	Nivea	no odour

Table 1: 2: 2x2x3x3 design of sensorial stimuli

Operationalization

Overall, it was assumed that the more motive congruent stimuli communicate one consistent message the better neural networks can be activated. The neural activation was operationalized by measuring the reaction time a respondent needed to indicate whether presented words and pictures (which stand either for the “need for affiliation” or “need for achievement”) fit to the presented face lotion package or not (see Figure 2).

This procedure is based on the assumption that attributes which represent a specific motivation are ready available (shorter reaction time) when the motivation has been activated by appropriate stimuli before (priming). The reaction time was measured with isi Implicit Testing. As further dependent variables the overall liking (9-point-hedonic scale) and the purchase intention (6-point scale) were measured.

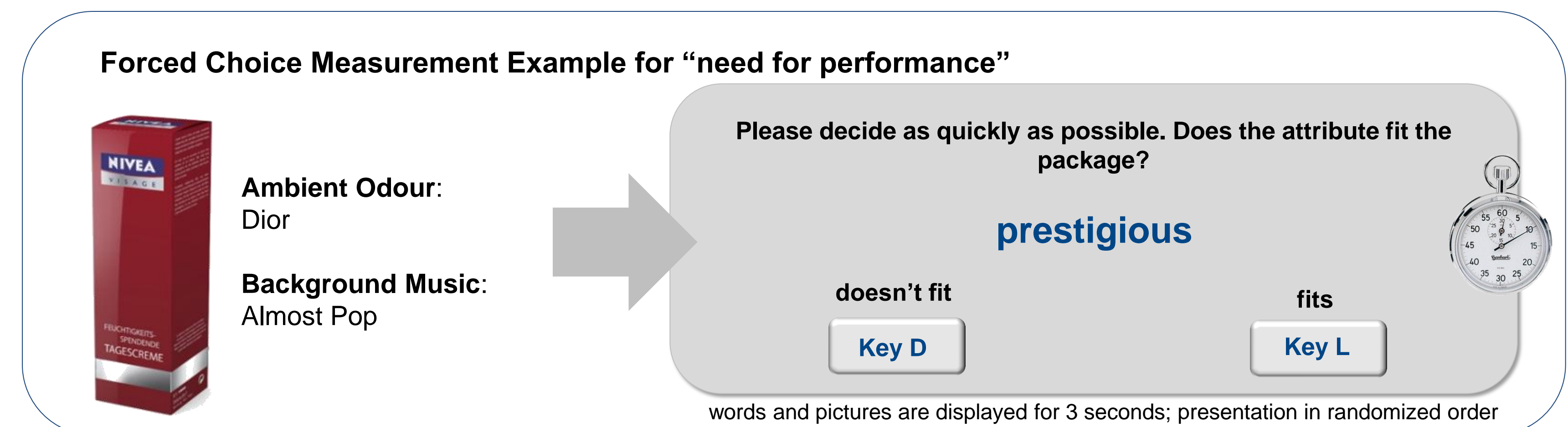


Figure 2: Measurement of reaction time with isi ImplicitTesting

Results

A conducted regression analysis shows that an **increase of involved stimuli** causes a **decrease of the reaction time** for motive congruent stimulations and is thus an indication of an increased neural response, the so called “**multisensual enhancement**”. Table 2 illustrates for the motivational system “affiliation”, when only two sensual modalities are presented (white package with velvety haptics) the reaction time to express the packages’ fit to words and pictures that stand for “affiliation” was in average 18.2 milliseconds longer than the average reaction time over all stimuli. When a third modality was added (either Nivea ambient odour or calm music) the reaction time was even 32.2 milliseconds faster than average. By adding the fourth sensual modality the reaction time was further drastically reduced. (Need for Affiliation: $F(1,72) 4,073, p=0.047, R^2=0.054, n=72$; Beta: -0.233; Need for Performance: $F(1,72) 2.221, p=0.111, R^2=0.033, n=72$; Beta: -0.180; To avoid person related effects that might influence reaction time, only ipsative times were used for the analysis)

n=72; in milliseconds	2 sensual modalities	3 sensual modalities	4 sensual modalities
Averaged Reaction time for motivational System “Affiliation”	18.2	-32.2	-278.7
Averaged Reaction time for motivational System “Performance”	32.4	34.0	-5.1

Table 2: Reaction Time as Indication for Activation of Neural Networks

The Mediating Effect of the Consumers’ Need States

To get a better understanding of the assumed **mediating effects** of a **need state congruent stimulation** and the **consumers’ need states** themselves, the interaction between the two have to be assessed. The overall liking served as dependent variable; the specific need state (high vs. low) next to the congruency (congruent vs. incongruent) were used as independent variables. As Figure 3 illustrates, a **need state congruent stimulation** was **liked significantly more than an incongruent one** – but only by respondents with a **high respective need state**. For respondents with a low respective need state a motive congruent stimulation had either no or even a negative effect.

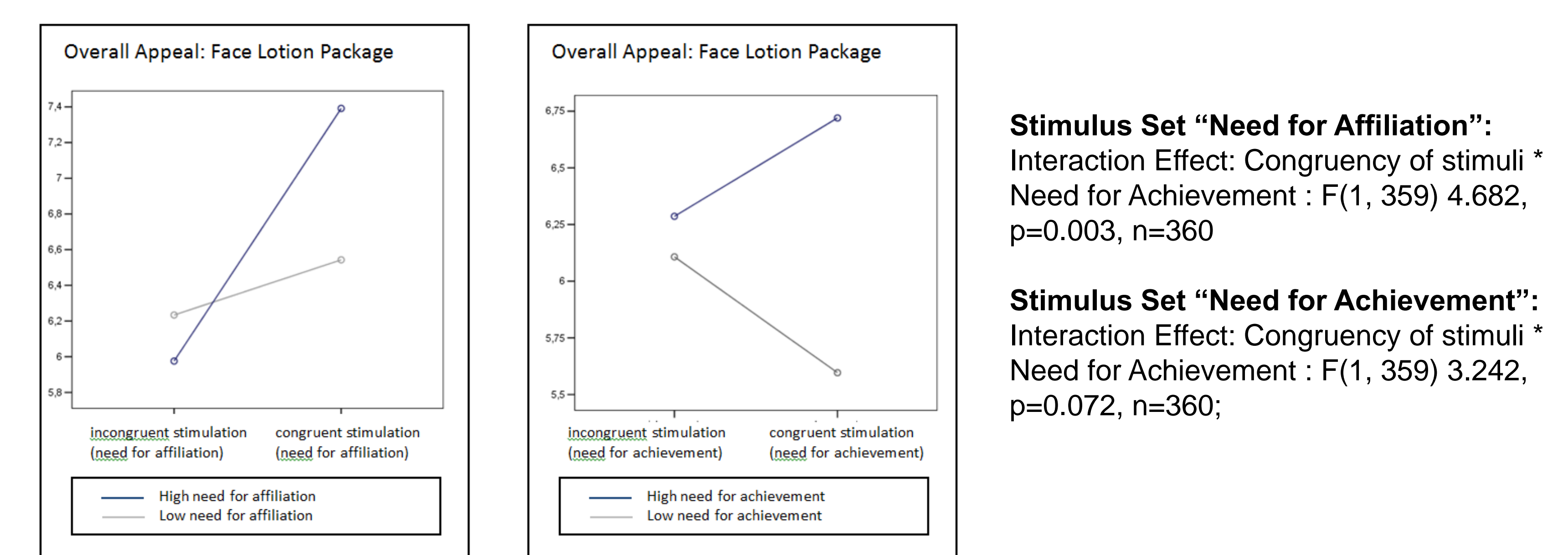


Figure 3: Illustration of Mediation Effects of Need State and Need State Congruent Stimulation

Conclusion

The research confirmed the assumption that the more sensory modalities are addressed by a congruent message, the better neural networks can be activated. Furthermore, it could be shown that a multisensual stimulation has to be congruent and fitting the target groups’ need to be successful: As a general point of learning, we can conclude that, in contrast to a widely held opinion in marketing practice, **not the “whether” but the “how” of implementation of a multisensual stimulation** is in the end the most important **issue influencing success**.

References:

Lutsch, D. (2011). *Der multisensuale Wahrnehmungsprozess: Ein Partialmodell unter Berücksichtigung des medierenden Einflusses von Emotionen und Motivationen. Dissertation in press.*