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## Subconscious Influence: A Clinical Experiment

by

Philippe Mouillot

Faculty of Business and Financial Sciences, Royal University for Women, Bahrain

pmouillot@ruw.edu.bh

*Abstract.* Among the various influential techniques used by marketing professionals, subconscious suggestion probably ranks among the most dangerous ones, even if it is legal in many countries. But despite necessary ethical issues, which do not override other marketing technique's legitimacy, the number of variables concerned is extremely large when observing and measuring subconscious impacts. We can then logically wonder if subliminal influence can really be anticipated and measured, as long as there are substantial reactions to be observed. This article presents two clinical experiments that have led to modify response behaviours up to 30%, and proposes the integration of the subliminal paradigm to the Engel, Kollat & Blackwell consumer behaviour model. Nevertheless, this experiment is clinical, consequently linked to a limited and controlled number of variables. It should then not be considered as a certainty in terms of subconscious consumer influence in real purchasing environments or situations.

*Key words:* Clinical Experiment, Influence, Subconscious, Subliminal.

*JEL Classification:* M31, M37.

### 1 Introduction

“Here is one of the most surprising characteristics of the mental life: we only perceive the minimum of impressions, which we constantly envelop with our sensory periphery. Never do they integrally penetrate our experience, i.e. our conscious experience, which digs out a riverbed through this multitude just like a small stream runs through a large prairie studded with flowers. However, the physical impressions, which do not matter, are as available to us as those that matter; they affect our senses with an equal vigour. Why don't they pierce the consciousness? Here lies the mystery which we can identify but cannot explain by merely citing the ‘narrow-mindedness’ of the consciousness as its foundation.” (James, 1915).

Subliminal influence consists of introducing an opinion or a motivation to the human brain in order to launch a decision-making or a behavioural process, which is previously identified. This suggestion is, by definition, subconscious<sup>1</sup>. Its unique quality comes from its furtive character. In fact, any stimulus emitted

within the spectrum of conscious perception is automatically subjected to the receiver's censorship. The act of directly attaining the “anesthetised” subconscious, that capacity of censorship, which is a feature of the consciousness, facilitates data storage in the immediate memory. When we meet a need or a desire, we naturally enter a phase of limited resolution before possibly getting involved in a process of resolution that is more extensive: we always start by looking for immediately movable solutions in our memory. A subliminal suggestion theoretically increases the probability, according to which the chosen solution – among those that are stored in our immediate memory – is one of those a priori subconsciously introduced.

In the 80's, the international legislation was reasonably interested in this phenomenon for the purpose of defining precise legal frameworks by an indisputably manipulation and therefore unethical therapeutic technique – ultimately promotional. But the experimental fields, mainly clinical, were, according to them, more ancient and diverse than we would have ever suspected. Nowadays, within the market race, subliminal suggestion is probably as terrifying as predicted for the future of business and management sciences, at the very least on the experimental level, notably owing to the

<sup>1</sup> Latin etymology: *sub-limen* which means «under the threshold». In this particular case, it means existing or functioning below the threshold of consciousness.

presence of an incalculable number of cross-sectional variables.

The objective of this article is to describe the inherent complexity of the evaluation of subconscious suggestion performance, particularly within a clinical experimental framework, before proposing integration to the EKB model.

## 2 Experimentation

“Thus the task is not to contemplate what no one has contemplated yet, but to meditate like no one has ever meditated on what everyone has before his eyes.” (Schopenhauer, 1992).

Our hypothesis is that a visual subliminal suggestion has the capacity to modify a total rate of 20%<sup>2</sup> of the clinical response behaviours of subjects who are divided into two experimental groups, and who are asked to name brands of non-alcoholic drinks, including mineral water, a theme selected completely arbitrarily, simply because, according to Maslow, everyone drinks - the wish to confine us to non-alcoholic drinks aims at discouraging people from alcohol consumption. Moreover, in order to be able to notice this possible modification, also given in a completely arbitrary fashion, it is necessary, a priori, i.e. without subliminal suggestion, to interrogate the first group of subjects – a control group – in order to have a basis for comparison.

Once this probability is defined, it becomes theoretically possible to compare the responses of the control group members with those of the subjects who have undergone a subliminal suggestion (i.e. experimental group), a suggestion that theoretically encourages them to give different subconscious responses. The observation of a substantial difference between the answers of the control group and those of our two experimental groups would mean that even the nature of the answer obtained was artificially modified. In other words, that the subliminal suggestion has a quantifiable impact on the response behaviours of certain subjects in the experimental groups. In this case, let us

recall that the subjects must name the first five brands of non-alcoholic drinks that come to their mind.

The preliminary investigation was conducted on 159 students who agreed to answer this written question, separately, under our surveillance and their teachers', the latter not being questioned. The subjects of the control group were organised in four groups for the first-year students and in three groups for second-year students, and they were set up in various rooms at the University of Nice - Sophia-Antipolis, France. Let us recall as well that the objective of this investigation was to determine a threshold of brand recognition.

The parallel products of “Coca-Cola Light” for Coca-Cola or “Orangina Sanguine” for Orangina, for example, were not regarded as independent brands because of the need for making a distinction between product and brand. These rare examples were thus integrated into the “mother brand” in order to be taken into account. At the end of this short investigation, the nature and frequency of their replies were as shown in Table 1 (brand cited in X% of the cases).

*Table 1: Control Group Occurrences Of Non-Alcoholic Beverage Brands*

BRAND	OCCURRENCES
Coca-Cola (+ Light)	95.60 %
Evian	66.04 %
Orangina (+ Light & Sanguine)	60.38 %
Perrier (+ Fu)	39.00 %
Pepsi-Cola	27.03 %

This first measurement showed that the five most frequently cited brands by the students among the 39 brands represented were as such, in a descending order: Coca-Cola, Evian, Orangina, Perrier, and Pepsi-Cola. These results logically confirmed the immense popularity of the most important market brands of non-alcoholic drinks, hence the probable legitimacy of the provided answers: the students are, indeed, the first consumers of such brands by means of vending machines, which are established in their direct environment of

<sup>2</sup> The results of the New Jersey experiment claim to have reached this threshold.

studies, and highlighted with the colours of these brands.

We then inserted in a musical video clip the command the subjects to name the French syrup brand Teisseire. The latter, somehow very well known, was selected because it did not appear at the time of the preliminary investigation. The subliminal image, in this case, emitted at a speed of exposure, accentuating the feeling not the perception, was  $1/25^{\text{th}}$  of a second, which meant appearance in every 15 seconds through the clip. The duration of the clip being 4'09, the suggestion could then be projected fifteen times in a single session. Because of both the nature of our experimental groups and their timetables, it was impossible to consider several times of passage.

We then suggested this command, carried out in a visual subliminal way, to two independent experimental groups under the pretext of finding a clip which could be used as support for an advertising campaign against AIDS. The first group consisted of 95 students, the second one of 58, those numbers being chosen to roughly match our control group size. Seven months separated the two experiments. Concerning the first experimental group, the nature and frequency of their replies were as shown in Table 2.

Table 2: Experimental Group N°1 Occurrences Of Non-Alcoholic Beverage Brands

BRAND	OCCURRENCES
Coca-Cola (+ Light)	83.16 %
Evian	57.89 %
Orangina (+ Light & Sanguine)	42.11 %
Teisseire	33.68 %
Perrier (+ Fu)	29.47 %

It should be noted not only that the suggested brand now formed part of the five brands most frequently cited, but also that this one was cited before Coca-Cola in 46.88% of the cases. The perceptible fall of the percentage rates for the first cited brands is explained thanks to the new distribution of the consecutive answers relating to the appearance and integration of the item

“Teisseire”. An independent statistical analysis<sup>3</sup> would reveal that the subliminal suggestion is probably able to modify clinical response behaviour, no longer at a total value of 20% but at a total value of 30%. It was on the basis of this new hypothesis, and under similar conditions, that we suggested, therefore, the same command to the second experimental group seven months later. These new students - the nature of the second experimental group formation was different from that of the first, i.e. Management students vs. Information & Communication students - were certainly not influenced by the market just like the first were not influenced by their environment, and this thanks to two main reasons. Firstly, Teisseire did not market new products or new packaging during the period that separated our two experiments. Second, the experimental subjects rarely consume syrup; they prefer sodas, which are available within their university establishment, as well as preferred during their evenings when they are mixed with alcohol. The nature and frequency of their replies were then as shown in Table 3.

Table 3: Experimental Group N°2 Occurrences Of Non-Alcoholic Beverage Brands

BRAND	OCCURRENCES
Orangina (+ Light & Sanguine)	14.08 %
Coca-Cola (+ Light)	19.37 %
Evian	11.97 %
Badoit & Pepsi-Cola	05.99 %
Teisseire	05.28 %

We can affirm that the suggested brand formed again part of the five most frequently cited brands, with a consumption level close to that of Pepsi-Cola; moreover, this one was once again cited before Coca-Cola in 20% of the cases. As for the independent statistical analysis, it would reveal<sup>4</sup> this time that our new

<sup>3</sup> The chi-square equals 8.89, which suggests that our assumption is not optimised. Our chi-square indicates that the subliminal suggestion is probably able to modify clinical response behaviour, no longer at a total value of 20% but 30%.

<sup>4</sup> The second independent study reports a chi-square equal to 0.24, indicating that the new hypothesis, i.e. arriving at a behavioural modification higher than 30% of the results provided by the preliminary investigation, is certainly more realistic than the first one.

hypothesis was certainly more realistic than the first one.

### 3 Discussion

It is undoubtedly the motivation study – motivations which are possibly at the origin of the subjects' responses, the subjects belonging to the two experimental groups - that seems to be the most significant when it comes to the identification of the limits inherent to experiments of such nature, i.e. clinical. Indeed, with the reading of our results - quantified hereafter starting from averages drawn from the two experimental groups, the results being numerically very close - one can observe the emergence of six quite distinct groups:

- Group 1, accounting for 9.05% of the answers, identifies the subjects who did not notice anything in the film, and who did not cite Teisseire either.
- Group 2, accounting for 2.78% of the answers, identifies the subjects who did not notice anything in the film but who cited Teisseire all the same, that which seems to indicate that the subliminal message had a subconscious impact on their behaviour.
- Group 3, accounting for 22.75% of the answers, identifies the subjects who believed to have seen “something” in the film that they did not identify, and who did not cite Teisseire: these subjects explain that they saw “flashes” throughout certain parts of the video. With the selected clip having such characteristics from the beginning, it would seem, to be strictly accurate, that the subjects did not make any distinction between the flashes due to the subliminal images and the flashes inherent to the structure of the clip.
- Group 4, accounting for 2.44% of the answers, identifies the subjects who saw “something” that they were not able to identify but who cited Teisseire all the same. This result is comparable with that of the second group because with the identification, being too vague for rejection or acceptance on behalf of the subjects, one can consider that the subliminal message

also had a subconscious impact on their behaviour.

- Group 5, accounting for 38.43% of the answers, identifies the subjects who consciously perceived the message but were placed in a position of rejection for not quoting Teisseire. The majority of the subjects found themselves in such a situation because one of them detected the presence of subliminal messages and was naturally put himself in a state of defence by means of a conscious vigilance, which resulted in monitoring the appearance of a new message. The images of the clip then completely passed to the second level as regards attention. This attention is only that of the subject concerned, being naturally focused on an identification exercise for subliminal images with the objective of validating the first detections, essentially dubious, and of discovering a ludic aspect in the exercise. Having orally reported the discovery, which would certainly not have been the case at the time of a projection among people unknown to each other (e.g. in a movie theatre), many subjects automatically spoke as soon as a new subliminal image would appear. This perspective is inevitable within the framework of a clinical experiment made up of subjects who know each other, which is the case within formal groups like students. The target here has therefore helped the projection of subliminal images as a simple spectator and the behavioural impact, since there was one, resulted in a refusal to name the Teisseire brand, a rebellion against a requirement or a command. This explains such a percentage, but also underlines the assumed suggestibility degree of the subliminal image, which modifies, in spite of everything, almost 30% of the targets' response behaviours. Furthermore, we are now certain that whatever the number of people, there exists a strong probability for at least one person to notice a visual subliminal suggestion in a conscious manner. Let us recall for this reason that the subliminal image is not invisible; it is simply dissimulated in order not to be given



priority during the selection process guided by attention.

- Group 6, accounting for 24.55% of the answers, identifies the subjects who clearly perceived the message but were nevertheless placed in a position of acceptance by citing Teisseire at the time of responding to the questionnaire. In this case, the subliminal images were detected and identified but, contrary to the preceding group, it is behaviour of acceptance that arose. Moreover, if one compares this information with that related to the command of naming evoked brands (cf. supra), one notes that this behaviour of acceptance has, moreover, allowed the citing of Teisseire firstly, before Coca-Cola when the brand was actually mentioned.

A final analysis relates to the perception thresholds of various individuals from our two experimental groups: at the time of identification, the subjects of the 5<sup>th</sup> and 6<sup>th</sup> groups did not all perceive the same things: 19 of them read "At Teisseire", and more rarely "It is Teisseire"; others answered that they had seen brand names, or "Teisseire Syrup"<sup>5</sup>.

Obviously, perception played its usual part of modifying certain realities because, following the example of Gestalttheorie's theses (Guillaume, 1979), certain subjects did not see what was there, whereas others saw what was not.

In short, if one devotes himself to a last quantified comparison, one notices that of the 99 subjects who identified the message (i.e. members of the 5<sup>th</sup> & 6<sup>th</sup> groups), 52.16% of them - the majority - located only the term Teisseire in the message, 24.45% brought back a complete but false message (i.e. "It is", "At", etc. instead of "Citez"), and the remainder, 23.39%, succeeded in identifying the message in its entirety: "Citez Teisseire".

A last point finally deserves to be underlined: orthography. The Teisseire brand has the distinctive characteristic of comprising the successive letters "ei" twice. In the French language, in front of two consonants, the "e" is pronounced "é" [e] or "è" [ɛ]. It is thus normal

that when one questions the orthography of Teisseire, the solicited person omits the first "i", persuaded that the presence of both "s" is enough to create the sound "é" [e] of Teisseire. We could discern this feature at the time of a pre-investigation to our experiment: it revealed that more than 90% of the questioned people, in spite of their education and knowledge of the brand, did not put an "i" after the first "e" when asked to spell the name of Teisseire. What is disconcerting, even if we had not thought of testing this aspect at the time of the definition of our experimental protocol, is that the totality of subjects who cited the Teisseire brand in their response after our subliminal suggestion correctly spelled it. What is even stranger is that, when, at the end of the test, we arbitrarily asked for some subjects to justify the reason for which they had cited Teisseire, their answer was unanimous: "I do not know anything about it..."

#### 4 Model Integration

Two options were available as of how to use the subliminal perception paradigm: creating a new model or integrating the variable to an existing one.

The first option was too ambitious because this experiment is clinical; consequently, it is linked to a limited and controlled number of variables. It should then not be considered as a certainty in terms of subconscious consumer influence in real purchasing environments or situations. Yet, such a suggestion paradigm deserves to be considered in terms of modelisation. So integration to an existing model was a reasonable option; and Engel-Kollat-Blackwell's model - EKB - seemed to be the most relevant in this regard because:

- The traditional stimulus-response model is too simplistic;
- Bettman's model merely focuses on the nature and the origin of information;
- Rogers' model mainly proposes to analyse brand-suggested purchases;
- Nicosia's model only imagines observing attitude modifications;
- Howard & Sheth work on a different symbolic paradigm than the one anchoring subliminal suggestion.

<sup>5</sup> The original order was: "Citez Teisseire", i.e. "Name Teisseire".

Based on the most famous extensive consumer behaviour models (cf. supra), we then suggested modifying EKB model (cf. Fig. 1) by

integration of the subliminal paradigm (cf. Fig. 2).

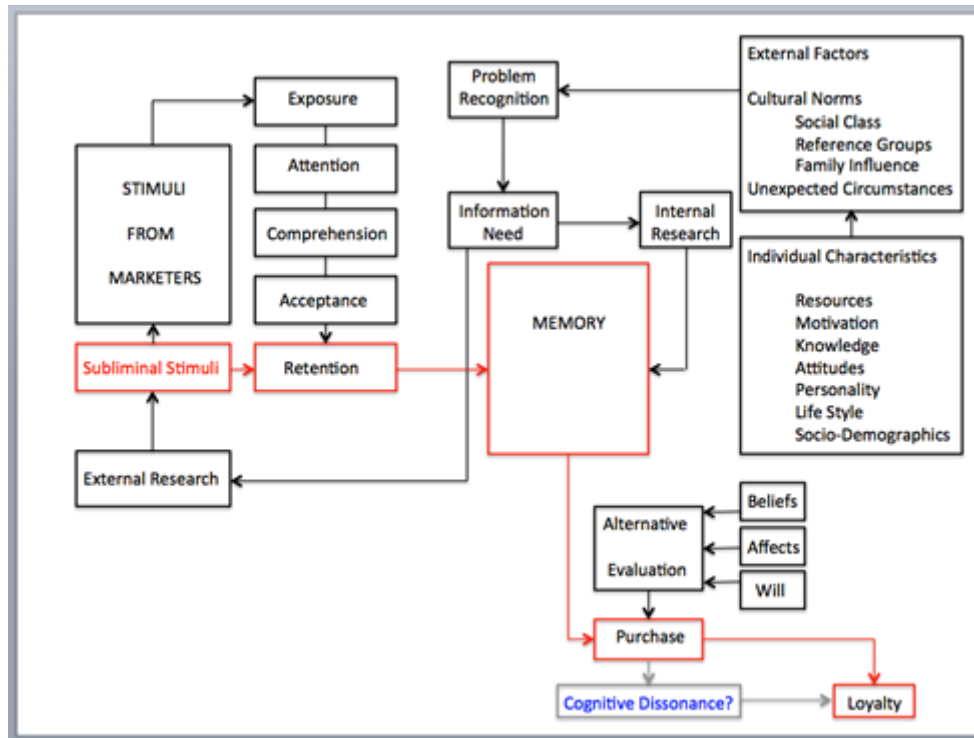


Figure 1. Engel, Kollat & Blackwell Consumer Behaviour Model, 1968

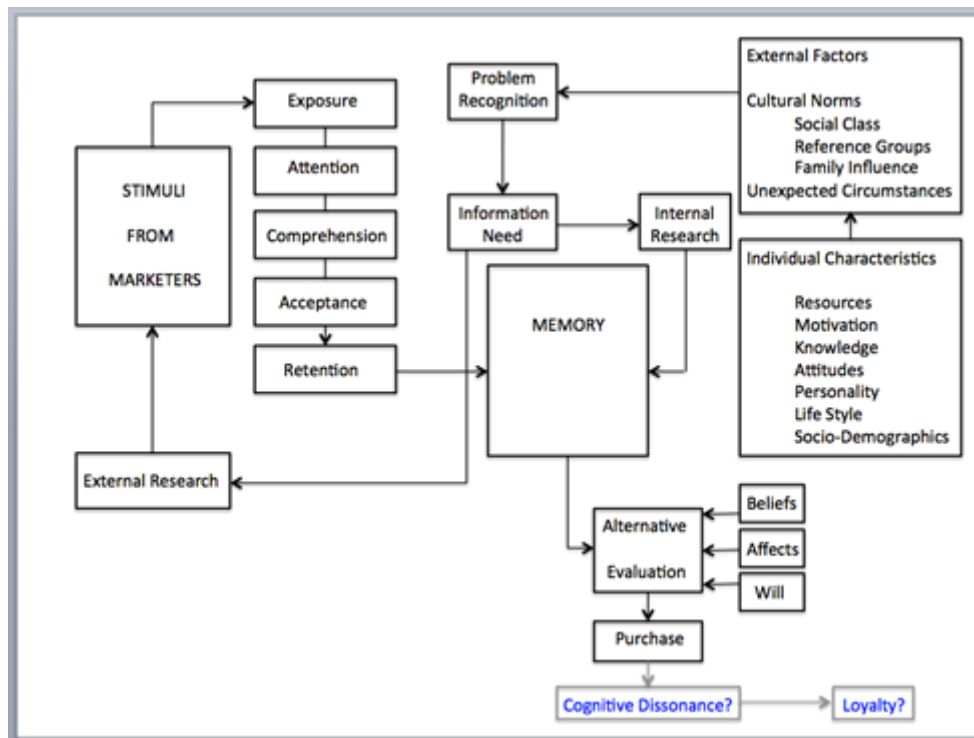


Figure 2. Engel, Kollat & Blackwell Consumer Behaviour Model after integration of the subliminal paradigm

## 5 Conclusion

It seems that the influence of collective diffusion depends on the role of four main factors: the source, the message, the instrument, and the subjects. In his study of a case of collective persuasion, Merton (1946) stressed that what we can expect often occurs: we confide in trustworthy people, and we defy the adversary and the stranger. But this is not always the case: in the long term, the memory of the source is erased, and information, true or false, produces its effect.

Whatever the types of suggestion, the comparisons are always very delicate, sometimes even completely lacking in direction: the public ones are different and they never occur under the same conditions. Moreover, we cannot simultaneously compare all aspects of influence: to draw attention, to retain it, to provide information, to modify opinions, or to determine behaviours. On the other hand, a certain number of generalisations appear to emerge from the study of participants subjected to the subliminal diffusion of information and ideas. Certain personality factors produce definite effects, e.g. a low regard of oneself makes subjects more impressionable.

The objective of this article was to present an experimental protocol, which put forward the interference of context variables as regards clinical experimental framework before imagining possible model creation or integration. Traditionally, where clinical experimentation makes it possible to preserve cross-sectional influences, it seems that that is not the case within the experiential protocols of subconscious nature. The results of our experiment suggest that it is necessary to lay careful reserves when it comes to the procedure conditions, and to the nature of the experimental groups. In our case, the fact that our subjects knew each other involved a categorical perspective: those participants did not hesitate to react orally to the sight of unexpected flashes, thus exciting the curiosity of the more passive subjects. Perhaps, this would not have been so explicitly the case under more anonymous conditions. What's more, one of the

two experimental groups followed a university training specialising it in information and communication. This training sensitises its students to the top media techniques, where a sharp glance is inspected according to a procedure like ours, skills that did not help mastering our experience's scientific integrity. As for the environment in which the experiments were conducted, it was far from generating the same variety of peripheral noises as that which exists in media more realistic than supermarkets, and therefore more hostile. Consequently, the real capacity of subliminal suggestion remains ignored nonetheless, even if we have good reason to believe that it should not be put aside in terms of communication solutions and performances. The most convincing results still depend on serious verification of the identification and measurement of many contingent variables.

Nothing today enables us to verify or revoke the fact that information can subconsciously be suggested through a controlled flow, and that it has an unquestionable and measurable impact on a subject's behaviour. Otherwise, it can involve a response from certain subjects, which might be recurring consecutively with a later identical stimulation, and that is something we are unaware of. The use of subliminal messages for diagnostic purposes thus remains, for the moment, only based on the assumption according to which the subliminal representation of certain stimuli and utterances is able to activate the conflicts that are related to various psychopathological disorders, or certain faded states of consciousness.

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### Author description

Prof. Philippe Mouillot was born on 15 December 1970 in Antibes, France. He holds international bachelors and masters in International Business, a MBA from the University of Nice - Sophia-Antipolis, France, in partnership with the University of California at Berkeley, USA (1994), and a PhD in Management Science from the University of Nice - Sophia-Antipolis (1999). He performed his military education in the French Air Force (1994-1995), and worked as a Professor at the Universities of Nice and Poitiers from 1995 to 2007, when he was sent to the Kingdom of Bahrain to create and develop a Business School at the Arabian Gulf University. In 2009 he took over the direction of the Department of Consultancies and Training. In 2011 he was appointed Director of Marketing and Corporate Communication at Al Jawhara Centre for Molecular Medicine, Genetics, and Inherited Disorders, until 2013 when he joined the Royal University for Women as a Full Professor. He also developed an international consulting activity since 1998 in the fields of Marketing and Strategy. He published numerous international articles and books. His last publication concerns Differentiation Competitive Advantages in the *Journal of Strategic Marketing* (June 2013). Prof. Mouillot is an active member of the MENSA association, as well as the Chartered Institute of Marketing.