



# Body language as a research tool in purchase intent evaluation

Assessing the validity of  
tools evaluating non verbal reactions  
to new product propositions

**Agnes E. Mariakaki**

**Research thesis**

Submitted to Dr. Philippe Turchet and Board  
May 2016, Athens, Greece

Ἄνθρωπος: ο αναθρών ά όπωπε

Human: he who reflects on what he sees

Plato, 427 – 347 B.C.

## ACKNOWLEDGEMENTS

This research effort would not have been possible without the passionate effort and support of my teachers. I thank **Gerard Stokink**, who introduced me to Synergology and mentored me on this research, providing support, materials, reviews and ongoing encouragement. I thank **Joelle Rossier**, who took our Synergology class through an amazing, inspiring journey, and made the experience of Synergology lucid, thrilling and satisfying, keeping her faith in us at all times.

I wholeheartedly thank my colleagues on this journey: **Corien Verplank, Judy De Graaff, Leslie De Jong** and **Ryan Baron**, for the camaraderie and support we shared together and for making me feel so much at home with you.

I owe heartfelt thanks to my research angel, **Charis Kominatou**, for the patience and grace with which she took care of organizing and supervising the details of this effort: the fieldwork, the interviewing setup, the research materials, the video editing and subtitling, and the havoc that all this caused to our office life.

I owe the highest of debts to **Dr. Philippe Turchet**, for an opus of work of the magnitude of Synergology. I am humbled by the tenacity with which he keeps expanding and enriching the field of Synergology.

I dedicate this work to my father, **Emmanuel Mariakakis**, who was and continues to be for me a model of hard work, integrity, and passion for people.

Agnes E. Mariakaki  
Athens, May 2016

## **ABSTRACT**

**This paper proposes that evaluation of new product appeal and purchase intention via verbal consumer responses only is subject to repeatedly validated bias. Moreover, the usage of nonverbal evaluation methods up to now is restricted to tracking facial expression of emotion, which offer a very narrow scope of information and predictive value. We propose that Synergology tools that evaluate non verbal responses by tracking movement of the eyes, the head, the torso and the hands may have high validity in evaluating purchase intention, in conjunction with verbal responses. In a qualitative research study,16 in depth interviews were conducted, evaluating two product propositions, using Synergology tools, and more specifically, the head axes (Sagital, Lateral, Rotative), the Gripping Gestures and the Sitting Positions. The study fully confirmed that the verbal expression of product appeal was not as sharp and as decisive as the non verbal expression. The synergology tools were proven to be efficient in evaluating with precision and sharpness the purchase intention towards the two products.**

## TABLE OF CONTENTS

<b>1 THE RATIONALE OF THE RESEARCH</b>	<b>5</b>
<b>2 INTRODUCTION</b>	<b>7</b>
2.1 Issues with research based on verbal data	7
2.2 Understanding purchase intent	10
<b>3. CONSCIOUS, NON CONSCIOUS MEASUREMENT</b>	<b>12</b>
3.1 Reliability of conscious measurement of consumer responses	12
3.2 A critical review of the emerging non conscious consumer research tools	14
3.3 The challenge of the unconscious behind decisions	17
3.3.1 The cases of how facial and emotional recognition is used in consumer research	18
<b>4 THE SYNERGOLOGY PERSPECTIVE</b>	<b>20</b>
4.1 The head axes as a tool for the study of consumer response	22
4.2 The sitting positions	23
4.3 The gripping gestures	23
<b>5 THE RESEARCH STUDY</b>	<b>24</b>
5.1 The research objective	24
5.2 The research setup	26
5.2.1 The research process	27
5.3 The research sample	28
5.4 Data analysis and treatment	28
<b>6 THE RESULTS</b>	<b>30</b>
<b>7 DISCUSSION</b>	<b>43</b>
<b>8 REFERENCES</b>	<b>48</b>
<b>9 APPENDIX</b>	<b>52</b>

# 1 THE RATIONALE OF THE RESEARCH

## Synergology applied in the business context

This project is motivated by the estimation that Synergology can provide very sharp tools that can help refine business decisions. One of the key risk areas for investors and manufacturers is that of the launch of new products. Consumer research that evaluates new product propositions using qualitative and quantitative methodologies does help to somewhat lower the risk of a failed launch, but it does not minimize it.

The research hypothesis is that a non verbal response is a more reliable indicator versus a verbal response to a new product. It is hypothesized that consumers who articulate opinions about products may not be fully conscious of the forces that move them to adopt new products.

## This study is based on a real business case.

Mentekidis S.A. is a water bottling company in Northern Greece. They distribute the Seli and Dios water brands nationally. They also manufacture a series of specialty water products.



At this point in time they consider a new product concept, first launched in Poland as Voda Collagen (water with collagen), with health and beauty benefits. They carried out qualitative research to evaluate the product mix: the concept of water with collagen, the bottle, the taste, the branding and the price. The qualitative methodology employed was that of focus groups, where a sample of consumers verbally discuss the new product and articulate their opinions on it, verbally.

**Traditional qualitative research relies on the analysis of verbal content mostly. The researcher may note non verbal cues of respondents, but never in a scientific or systematic way. Also, traditional research never incorporates non verbal findings into research results and into recommendations to the client.**

In this case, Synergology provided the tools for a systematic study and analysis of non verbal responses to the new product. The non verbal reactions were analyzed on the basis of models developed by Dr. Philippe Turchet, namely:

- 1. The axes of the head as indicators of interest or disinterest, when pondering a new product*
- 2. The gripping and handling of the product with the hands, and where the product was placed relative to the interviewee*
- 3. Sitting positions with emphasis on the position of hands and shoulders*

For the accurate usage of the above tools, full use was made of the Synergology classification system, which codes with specificity every body movement.

The research validated that the above 3 Synergology tools expressed with more clarity the appeal of the product on the individual, than their words did. In fact, on many occasions the words explained the negative reaction, but on several occasions, the words were in conflict with the non verbal cues. Thus, in conclusion, the research showed that the analysis of non verbal cues enriches greatly the evaluation of a new product proposition and potentially minimizes the risk of a failed launch.

## 2 INTRODUCTION

### 2.1 The issues with research based on verbal data

There is a massive number of new products launched every year. According to the yearly Nielsen Breakthrough Innovation Report, there were roughly 14,509 new product launches in year 2011. The report analyzed their successes over the next 3 years and reported that only 31 of these products introduced in 2011 had breakthrough appeal and massive financial success. The rest of the new launches underperformed.

The screening and pre launch evaluation of a new product launch is a decisive part of its eventual success. However, the conventional methods of consumer research have proven to be inadequate on many well studied and well documented occasions. Even though innovation in commercial products and services increases exponentially, however, innovation in consumer research design and methodologies does not increase at a similar rate. In fact there has not been much disruptive change in honing the consumer research tools. Such tools include:

- Consumers grading products through questionnaires and surveys that track consumer choices and provide numerical maps of consumer behaviors
- Consumers participating in depth interviews and focus groups, offering rich and valuable data that explains consumer behavior

Some tools now extensively used go beyond verbal articulation:

- Ethnographic studies use participant observation to explore what consumers do, they study patterns and behaviors as they occur
- Semiotic studies analyze symbols, esthetics, and material brought in by consumers to express their needs and desires

All of these research tools are valuable and each has its strengths. However, we propose that they lack in predictive value if they do not include the pre verbal and non verbal expression of the consumer.

There are famous examples of consumer research which failed the client because consumer responses were taken at face value.

## The New Coke verbal research failure case study

Coca-Cola's market share had been steadily losing ground to diet soft drinks and non-cola beverages for many years; meanwhile the consumers who were purchasing regular colas seemed to prefer the sweeter taste of Pepsi, as Coca-Cola soon learned in conducting blind taste tests. New Coke was the unofficial popular name for the reformulation of Coca-Cola introduced in the spring of 1985 by The Coca-Cola Company to replace the original formula of its flagship soft drink, Coca-Cola (also called **Coke**). New Coke originally had no separate name of its own, but was simply known as "the new taste of Coca-Cola" until 1992 when it was renamed Coca-Cola II.



Before the launch of New Coke, almost **200,000 blind product taste tests** were conducted in the United States, and more than one-half of the participants favored New Coke over both the original formula and Pepsi. When the new product was introduced, the original formula was withdrawn from the market. This turned out to be a big mistake! Eventually, the company reintroduced the original formula as Coke Classic and tried to market the two products simultaneously. Ultimately, New Coke was withdrawn from the market (Hartley, 1995, pp. 129–145).

**First**, there was a flaw in the market research taste tests that were conducted: They assumed that taste was the deciding factor in consumer purchase behavior.

Consumers were not told that only one product would be marketed. Thus, they were not asked whether they would give up the original formula for New Coke.



**Second**, no one realized that there was more, over and above the verbal responses of the research sample. The words are very important but they do not say the whole story. The symbolic value and emotional involvement people had with the original Coke was there, but was not articulated in the verbally based research design. The bottom line on this is that relevant variables that would affect the problem solution were not included in the research.

*We will show in this paper that Synergological analysis of pre verbal behavior can show product rejection in a new drink, in the first 3 minutes of presentation, before an opinion is articulated and even before the product is tasted*

### **Research acquires predictive validity when it is comprehensive**

McKinsey & Company conducted a study (Gordon, M., & Rebutish, E., 2009) to better understand what sets apart companies that succeed from those that do not. The findings were clear: "Top performer companies were twice as likely as bottom performer companies to research what customers wanted." Clearly the answer lies in a true understanding of customer preferences, yet in the same study McKinsey found that 43 percent of bottom performers, that is, almost one in 2 of the struggling companies also engage in ongoing consumer research. So the question remains: why is their failure rate so high, despite the effort to understand consumers? The McKinsey report states that this high rate of failure can be attributed to three key reasons:

- 1) Customer needs are not understood from the beginning,
- 2) The wrong methodology is being used, and
- 3) The data collected is not actionable.

In the study outlined above, at least most of the organizations are *attempting* to leverage data to drive the process, yet too often these decisions around product design are ultimately made based on "gut feel" by marketers.

Until we understand preferences directly at the consumer level, we're ultimately just taking a shot in the dark, jeopardizing product success and potentially contributing to product failure.

**Our proposition is that Synergology can fill the gaps in the consumer research practice, by offering systematized models and tools for the study of non verbal reactions to products.**

## 2.2. Understanding purchase intent

It has been studied that consumers may report that they want to buy a product but may not actually make the purchase. It has been shown that consumers participating in product research may respond favorably to the product characteristics, when in fact they do not like the brand at all (Morwitz, Steckel, & Gupta, 2007).

When decision makers and researchers rely on purchase intent measurements, they hope and implicitly assume that these measures will be predictive of subsequent purchase and product success. This assumption is based on theoretical, not pragmatic models of consumer behavior. For example, Fishbein and Ajzen (1975, p. 368-369) wrote, "if one wants to know whether or not an individual will perform a given behavior, the simplest and probably most efficient thing one can do is to ask the individual whether he intends to perform that behavior." According to Bagozzi (1983, p. 145) "intentions constitute a willful state of choice where one makes a self-implicated statement as to a future course of action." Warshaw (1980) notes that most formal consumer behavior models show intent as an intervening variable between attitude and choice behavior, implying intentions can be strong enough to overpower beliefs or other cognitive constraints (e.g. Engel, Blackwell, and Kollat, 1978; Howard and Sheth, 1969). As if intending to lose weight would mean that one would adhere to a diet.

Unfortunately, the signal from empirical investigations of the link between respondents' stated intentions and their ultimate behavior is not as straightforward. While most studies find a significant positive relationship between intent and behavior (Bemmaor, 1995, Clawson, 1971; Ferber and Piskie, 1965; Granbois and Summers, 1975; Newberry, Kleinz, and Boshoff, 2003; Pickering and Isherwood, 1974; Taylor, Houlahan, and Gabriel, 1975), the strength of this relationship seems to vary quite a bit.

*We propose that the methodology which is used each time, in exploring purchase intention, is accountable for the inability of purchase intention questions to predict actual purchase behavior.* The classic purchase intention question is: How likely are you to buy this product? And a range of 5 choices is given, where 5: very likely 4: somewhat likely 3: not sure, 2: rather not likely 1: not at all likely.

Morwitz, Steckel and Gupta (2006) evaluated how purchase intention was measured. They reviewed 60 studies testing actual products that were eventually launched on the market. The

data evaluated was based on interviews of more than 16,000 consumers who responded to the 60 studies reviewed. This data was evaluated against the ultimate sales of these products in the marketplace. In the 60 studies, purchase intention was measured through Likert scales, where questions were worded using “likelihood of purchase” or “likelihood of trial” terms. Respondents expressed their likelihood to buy on mostly on binary scales (yes, no), or on 3, 5 or 11 point scales. A specific time horizon may or may not have been included in the questions: e.g. “how likely are you to buy within the next six months?” The authors examined how the number of scale points and the summary statistic used to report intentions (mean intention score, median intention score or top boxes score) moderate the strength of the intent-behavior relationship.

They found evidence that intentions are better predictors of behavior for existing products than for new products. Specifically, the intent-sales correlation is .751 for existing products and .177 for eight new products. The correlation for existing products is significantly greater than zero, while the correlation for new products does not differ significantly from zero.

Thus, we see that when the consumer is familiar with a specific brand, they already have a **conscious opinion** of that brand. Thus purchase intention, consciously expressed on a scale from 1 – 5, has predictive value primarily for existing products. However, when it comes to new product launches, then **the predictive value of direct, conscious quantitative questioning is closer to zero.**

The authors (Morwitz, Steckel and Gupta, 2006) give this example: “a manager who conducted a study where intentions were measured for a new flavor of potato chips (i.e., a new non-durable where intentions data were collected at the product flavor level), should expect a correlation of .324 between intent and dollar sales for the first 12 months. The manager should keep this relatively weak correlation in mind when making strategic decisions based on consumers’ **stated** purchase intentions. Given these results, the manager might decide to place **more weight on his or her intuition** and on planned expenditures for advertising, distribution, and promotion, and less weight on intentions in a forecasting model” (p. 30).

Since greater investment risks are involved in the launch of new products than existing products, it is a pity that expensive purchase intention research tools currently widely used in the market have such weak predictive value. They need to be supplemented with sharper measures.

**We propose that Synergology offers such tools, that can complement quantitative data, and reinforce their predictive value. We esteem that human choice behavior is complex, and it requires multi- disciplinary tools rather than uni - disciplinary tools of evaluation.**

## 3 CONSCIOUS AND NON CONSCIOUS MEASUREMENT OF CONSUMER PURCHASE INTENTION

### 3.1 Reliability of conscious measurement of consumer responses

There are several reasons for which the measurement of consumer responses **only** through rational tools has been shown not to be completely reliable:

#### *a) Our ability to articulate emotional responses*

Consumers do not always have the ability to express fully the gamut of emotions and feelings that a product provokes in them. This may be because these feelings are subtle and fleeting and therefore hard to pin down. For example, during a 30 second stop at the super market shelf the consumer may go on a rapid emotional 'journey', during which they experience varied feelings, perhaps at a low level, and unless they are particularly expressive and introspective then a typical survey question may fail to capture the richness of this experience.

#### *b) Social desirability bias*

Whenever research is conducted face-to-face (either by a researcher or in the context of a focus group) there may be some opinions and reactions that consumers keep to themselves if they fear they may be judged adversely about them. Equally, there may be other opinions and reactions that they exaggerate or bring to the fore if they think it makes them look good. There can be areas of questioning that may stray into areas in which people wish to display or hide their opinions, attitudes, or perceptions. On more than one occasion a 'leader' emerges in a focus group whom the other participants subsequently – and presumably non-consciously – begin to 'mirror'. Usually the leader is someone particularly articulate, imposing, or dominant, whose vocabulary the other participants latch on to and begin to repeat.

#### *c) Limits of memory*

Our conscious memory (usually called 'declarative memory' (Ullman, 2004) that is, memories that we are able to talk about) have limits. Most people do not pay much attention to routine behaviors such as shopping in the supermarket. Therefore, questions about how they have made decisions in the past may be hard to answer as they just can't remember. Also, in a similar way, emotional reactions can be so fleeting and can successively change from one moment to the next when viewing an ad or interacting with a product that it is almost impossible for most consumers to accurately recall them, when they later respond to a questionnaire.

There are attempts to get around this problem. First, the researcher could replay the ad, and pause every so often or get the respondent to talk over it, describing their responses as it plays. Or they leave the proposed product on the table for the consumer to interact with. However, they have then transformed the experience into something unnatural – most of us don't consciously inspect our feelings as we watch an ad, or as we consider a product in front of a super market shelf. And we do not simultaneously divide our attention between paying attention to a product and talking about it to a researcher. Even the act of hearing ourselves bringing our own reactions to light by talking about them may change our reactions! Overall, the problem is that asking people to introspect and divide their attention while being presented with a product to evaluate, means that the researcher is no longer getting a 'pure' reading of consumer responses.

*d) The difficulty in accurately quantifying responses*

Numerical scales are big favorites in consumer research. They narrow down the amount of information that is received by consumers. The asset of quantitative research is the big sample used, that allows for models of statistical validity and reliability to be applied. But, very often the consumer wants to respond with a "...well, it depends". People are not necessarily good at rating a product on a scale. There is often a tendency towards giving 'mediocre' responses near to the center of the scale, just because there are so many variables that influence a decision that a simple "rather yes" or "rather not" is not adequate to express them.

*e) The tendency to post-rationalize*

Many of the buying behaviors are driven by non-conscious and seemingly irrational decisions. And then there can be strong pressures to rationalize choices when asked to explain them. Most people don't want to be seen as irrational, inconsistent or economically naive, therefore they will often invent a reason why they behaved the way they did. The situation becomes worse when one considers that people often cannot remember or just don't have conscious access to why they did something. Lastly, even though people have a tendency to post-rationalize, they may not even be aware that they are doing it, meaning that sorting out the real answers from the post-rationalized ones may just be an impossible task for the researcher.

*f) Some of our mental processes are hidden from introspection*

As many choices are processed non-consciously, they are hidden from conscious introspection. Having little awareness of the fact that there are non-conscious decisions being made in the

brain all the time, when consumers are asked about why they make a choice, their conscious brain tends to prefer to make up an answer that makes sense, than to admit one's irrationality or lack of complete control.

So if traditional techniques are often inadequate at decoding our irrational behavior how can we uncover the forces that are driving consumers? There is an emerging toolbox of research techniques, which is very promising, but we will show that it lags behind from providing the full

### **3.2 A critical review of the emerging non conscious consumer research toolbox**

*a) Neuro – research:* insights from neuroscience on what we find beautiful, pleasurable or attractive and why, with the use of techniques that bypass the conscious mind. Much of the neuro research that has been recorded has been conducted with the use of fMRI. A full review of neurosensory marketing research can be found in Martin Lindstrom's "Buyology", published in 2012 .

The asset of this approach is the perfect accuracy with which it is shown which part of the brain are activated when the respondent views a stimulus, e.g. a product, or a commercial ad. The key strength of fMRI is its exceptional spatial resolution: the ability to record activity down to small areas of the brain, including the deeper, more evolutionarily primitive structures that can be involved in emotional experiencing, such as those that comprise the limbic system. This gives it the edge in being able to pinpoint direct activation of, for example, particular emotional states within the brain in a way that other methods cannot.

But then, when conducting neuro-research with consumers the actual data that is collected is only half the story. One needs to have ways to explain why consumers responded as they did. Just asking them is not enough. The Achilles heel of fMRI research is its relatively poor "time resolution". Like a Victorian photographer, fMRI takes each picture over the course of several seconds. This means that the photos can fail to pick up more speedy activity, e.g. picking the reactions to a 15 second TV ad. Instead, the fMRI provides scans over longer epochs of time (e.g. several seconds) or over the experience as a whole (e.g. the whole TV ad). This is improving with technical advances, but for the moment these types of scans are better at providing information about reactions that can be summarized over at least several seconds.

Another weakness of the fMRI is its user experience. Not only does the study participant have to keep very still for extended periods of time (this particularly applies to the head) but they are contained within what can feel like a fairly oppressive clinical environment, inside a machine that can feel claustrophobic to some.

b) *Biometrics*: there are several bodily signals that can be measured. Eye tracking can measure the movements of the eyes over a particular area, a print ad, a web site, a product packaging (Nielsen and Pernice, 2010). Eye tracking is comparably cheap, and requires little complex knowledge to generate outputs.

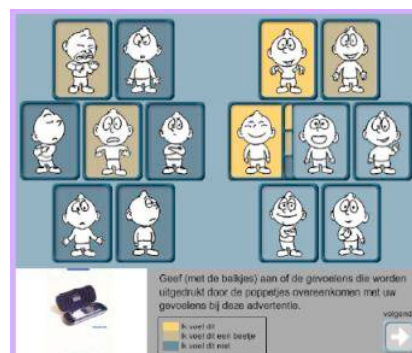
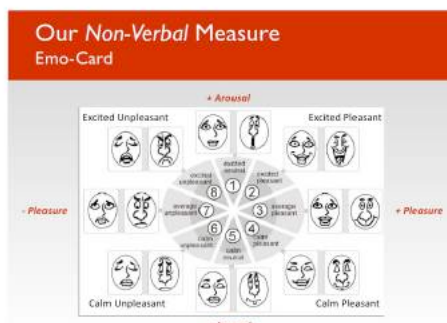
It provides a clear measurement of attention, bypassing the conscious mind.

The fundamental challenge or limitation of eye tracking is that it shows where someone looked, where they directed their attention, but not if that attention was positive or negative. Someone's gaze may have dwelt on a particular area because they found it interesting and as much because they found it repulsive, or simply because they were resting their eyes there whilst thinking what to do next. Eye tracking does not give information on the emotional feelings that a stimulus evoked, or on the meaning communicated (although eye tracking can indicate which aspects, if any, of the image are likely to be remembered). Thus, whilst it can be useful to see where a persons' eyes fixate, this information has to be complemented with additional data.

c) *Facial action coding system*. This is the research system closest to evaluating non verbal facial responses to stimuli. It was developed by Paul Ekman (2004). He postulated that there are seven universal facial expressions of emotions that appear to be common across cultures. (Happiness, Sadness, Disgust, Contempt, Fear, Anger, Surprise). Recently he has been narrowing them down to five ([www.paulekman.com/atlasofemotions](http://www.paulekman.com/atlasofemotions))

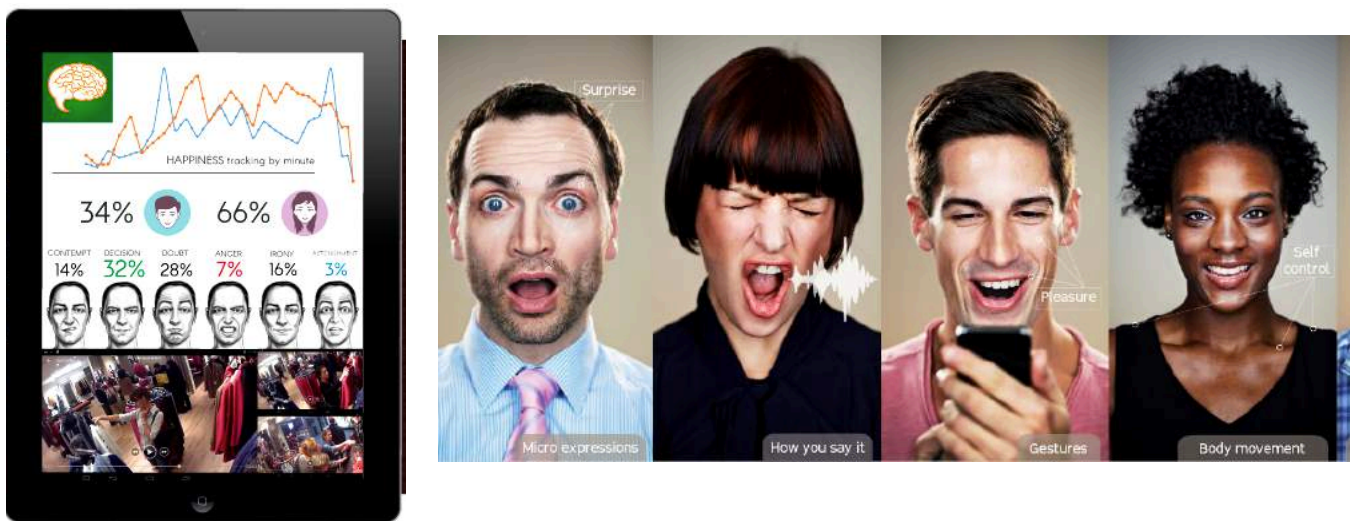
However, this is a limited emotional range: currently the core seven emotions are of limited use to marketers. For example, there is only one which is a positive emotions. Also, the 7 emotions tend to be fairly 'intense' emotions. Disgust and fear, for example, are rarely evoked by mainstream products or marketing communications.

Emotional suppression: Ekman describes suppressed emotions, and micro expressions, but existing consumer research tools take into consideration mostly the 6 universal emotions, maybe some additional ones, and do not at all track for micro expressions or subtle expressions. Many research companies use emotional visuals to aid in the elicitation of more "spontaneous" responses. Instead of using an conventional Likert scale to elicit a consumer response, they use visuals like the following:



Consumers are asked to indicate which emotional face on an “emo-card” best expresses their reaction to a product or an ad. However, this is again a conscious response, that falls under all of the constraints and biases of conscious responding mentioned earlier.

Insighter is a Peruvian company that has built further a methodology based on Ekman’s FACS model. They use software and webcam video feeds, to analyze a person’s face moment by moment for signs of emotions whilst the person shops at a store. They state that they study facial expressions, body movement and paralinguistic cues.



However, there is little documentation and systematization of their methodology, neither has it been subjected to academic rigorous evaluation.

*In conclusion, the literature review points out that conscious responses in consumer research are subject to bias. Several new research methodologies have evolved to bypass the conscious mind, in the evaluation of new product or advertising propositions. It is clear that the optimal way to reach more conclusive predictive evidence about a product’s future success is to combine both verbal and non verbal techniques.*

**However, currently existing non verbal techniques are fairly limited in the richness of insight they provide in the research effort. It is here proposed that Synergology can contribute immensely to the field of preverbal and non verbal measurement of consumer reactions.**



### 3.3 The challenge of the unconscious behind decisions

The unconscious forces in decision making was exhibited in an experiment in a brain scan experiment (Haynes et al., 2008) The use of brain scans could predict decisions of research respondents about seven seconds before these respondents consciously made the decisions. A “Many processes in the brain occur automatically and without involvement of our consciousness. This prevents our mind from being overloaded by simple routine tasks. But when it comes to decisions, we tend to assume they are made by our conscious mind. This is questioned by our current findings” (p. 544).

The subjects had to make a simple choice: whether or not to push a button with their left or their right hand. They could make the decision whenever they felt like, whenever it suited them, as long as they indicated at which point in time they made the decision in their mind. By observing patterns of brain activity, **the researchers were able to predict the subjects’ choices before they were “known” to the participants themselves.** Decisions are strongly prepared by the brain activity. By the time consciousness kicks in, most of the work has already been done”.

This unprecedented prediction of a free decision raises profound questions about the process of conscious choice. The next question to ask is whether preverbal gestures could also predict a decision.

**The next question is whether brain scans are not necessary to predict decisions. Are there human expressions that “leak” decisions before consciousness kicks in?**

Research shows conclusively that behaviors that tend to be less controlled (e.g. eye batting, pupil dilation, itching) may be more diagnostic of a person’s genuine feelings and can express inner attitudes better than those that can be more easily controlled (e.g. articulated opinions, facial expressions like a smile).

This phenomenon is described as the “leakage hierarchy” (Ekman & Friesen, 1969; Rosenthal & DePaulo, 1979a, 1979b) or the “unintentional display effect” (Bonoma & Felder, 1977). If a customer is trying to mask his or her excitement, it still might “leak” or be inadvertently expressed through the tone of voice, for example. The challenge that customers confront in their masking efforts is the irrepressibility of nonverbal behavior. That is, people cannot be completely expressionless (DePaulo, 1992).

**Synergology is a scientific discipline that studies all five dimensions of non verbal expression that can diagnose inner decisions and attitudes: the periverbal, paraverbal, supravverbal, infraverbal**

### 3.3.1 Three cases of how facial and emotional recognition is used in consumer research

Ekman's 7 universal emotions are the most widely used non verbal platform in consumer research (contempt, disgust, happiness, sadness, anger, fear, surprise). Several research companies have developed proprietary software that delivers results by analyzing facial movements on the grounds of the 7 universal emotions.

The way Ekman's work is used by three of the most prominent companies will be presented here. Affectiva uses a facial recognition software that calculates an "engagement" score, and identifies and scores the intensity of one emotion per customer moment.



Sightcorp uses emotional recognition software and provides a facial reading with scores on each of the 7 universal emotions.



NVISO operate in a fairly similar way, and provides a map of the emotion on the face



The main critique of the methodologies of facial recognition already described, is that they chart emotions on the face, but can not describe what in the product or advertising caused them. There is not enough information to explain why these emotions emerged, and to what product or advertising element they can be attributed. The facial reading provides a piece of information that is useful but not comprehensive and by definition limited in value.

However, facial emotion recognition methodologies were never designed to be used exclusively or on their own. They were designed to be used in conjunction with verbal techniques like in depth interviews and focus groups. Or they are accompanied by open questioning, and “think aloud” probes.

Our own proposition is that the facial emotion recognition methodologies based on Ekman’s 7 universal emotions, are insufficient even as supplementary to other research techniques.

Ekman (2004) himself described the 7 emotions as “basic” or “fundamental”. He does present the case of a much wider variety of nuances expressed on the human face, which he describes as having a very subjective character across subjects and across cultures.

However, it seems that consumer researchers are nevertheless favoring tools and models that are simple, and straightforward, like the 7 universal emotions. They then oversimplify their connection with purchase intention.

After all, an emotional state is a very complex event. It could be paralleled to a cocktail recipe. It is the result of a mix of varied emotion ingredients, in varied quantities and combinations, over time. To state which ingredients are there, is not enough to understand the end result. One would have to focus on how the “emotion recipe” unfolded over time, which ingredients, when, in what measure.

*Synergology does take these elements into consideration, and thus promises to be a more precise tool, though not as simple or “easy”, as Ekman’s universal emotions.*

## 4 THE SYNERGOLOGY PERSPECTIVE

Synergology was created by Dr. Philippe Turchet, in the '80s, and since then he and his students have consistently evolved the field.



Today several models have been developed that can come to the aid of consumer research. Further in this report we will present the theoretical foundation of synergology, with regards to hidden emotions and unconscious decision making, and will describe the models that will be used further in a new product evaluation. The premise on which Turchet (2000), developed the Synergological perspective is that emotion is always reflected in movement. “Behind an emotion, there is always a movement. It even precedes the emotion and is the prerequisite for experiencing it (Turchet, 2012, p. 34). Emotion does not necessarily need verbal language to express itself, and we have seen that verbal language may be used to confuse about felt emotions. But, emotion can not be expressed without movement.

This premise has been widely researched,, since long ago (Buzby, 1924; Hanawalt, 1942; Coleman, 1949; Harrison, 1964), with a focus on the face, and Paul Ekman (1967) is perhaps the pioneer who has conducted the most extensive research on facial expressions .

However, though Ekman acknowledges the connection between emotion and body movement, however, he has not attempted as full a study of this connection (Ekman, 1964). To date, Philippe Turchet is the first researcher to compile a full map and classification of how body areas and body movements are connected to, and express, the felt emotion. But before we proceed to present the Synergology perspective, we need to establish a clear critique of existing systems.

Synergology has extensively used the findings in the study of the brain and the nervous system and has established their link to movement and to non verbal expressions of the face and body. The research results of important figures in neurological studies, from Paul McLean to Joseph LeDoux and Antonio Damasio have formed the foundation on which Philippe Turchet was able to develop a series of models and codifications, that richly track and chart non verbal behavior both as regards the face as well as regards the body.

These models have been validated by research and there is on going effort to enrich and further validate them.

Moreover, the study of movement and non verbal expression of the face and body has been fully is systematized with the use of a coding system that allows a common descriptive language.

This document includes a study which has employed three of Turchet's models, in figuring out non verbal cues of product appeal, among consumer participants in a research. These models were:

1. Axes of the head
2. Sitting positions
3. Product gripping gestures

## 4.1 The head axes as a tool for the study of consumer response

**The sagittal axis:** expresses the movement of the head that rises above or below or is at the same level in relation to a person or object. It is the axis of hierarchy and expresses superiority or inferiority in the interaction.

**The rotative axis:** expresses which eye looks at the person or object, the left or the right one. When the person focuses on the other with the right eye, then they invite information to the left hemisphere and this projects consideration or distance.

When the person focuses on the other with their left eye, they invite information to the right hemisphere of the brain, and establish an empathic link with the other person.

**The lateral axis:** expresses how the head leans. If it leans towards the right side (corresponding to the left hemisphere), then there is a vigilant perspective. If it leans to the left side (corresponding to the right hemisphere), there is an empathetic perspective.

The research hypothesis, with regards to reactions towards a new product:

1. A rotative axis towards the left, combined with a lateral axis towards the left (ARG/ALG) would be more likely to be associated with an empathic, interested, open attitude towards the product.
2. A rotative axis towards the right, combined with a lateral axis towards the right, would be associated with a more vigilant, resistant attitude towards the product.
3. With regards to the sagittal axis we propose that an ascending head axis, accompanied with right rotative and right lateral axis, (ASS/ALD/ARG and ASS/ALG/ALRD) would probably be expressive of skepticism towards the product.
4. While a descending head axis, accompanied with right rotative and left lateral axis (ASI/ALD/ARD), would probably be expressive of cautious consideration towards the product.

All of the above hypotheses will be validated both verbally and non verbally

The degree of agreement between the verbal and the non verbal response to the product will be evaluated.

## 4.2 The sitting positions

The seated position indicates the internal dynamics of a person. The willingness to withdraw or interact would be reflected in the position of the trunk, or the ego.

When interpreting the sitting positions the data that is monitored includes:

### The position of the torso (Ego)

.Repressed emotion is very visible on the torso... Nonverbal language substitutes verbal language with remarkable efficiency on the torso.(Turchet, 2012, p.151). The willingness to interact or withdraw would be reflected in the position of the torso.

The position of the shoulder

The shoulder forward means that the ego moves forward on that side. The shoulder backward means that the ego moves backward on that side.

### The rotative axis of the head (which eye is looking)

When looking with the right eye, the person invites information into the brain

When looking with the left eye, the person builds an empathetic link with the stimulus

The research hypotheses

1. The chest moves forward: there is an expression of interest  
The chest moves backwards: there is an expression of disinterest
2. Looking with the left eye: establishing a link  
Looking with the right eye: classifying, registering information
3. The left shoulder moves forward: there is interest and receptivity  
The right shoulder moves forward: there is vigilance

## 4.3 Gripping gestures

How a person interacts with an item can be expressive of their attitude towards it.

In consumer research, the respondent is presented with a product, and up to now the verbal evaluation is the primary research tool used, while more recently, facial expressions towards the product may also be evaluated.

Synergology offers a variety of additional tools and models to record and track non verbal responses, and the way the person touches or handles a proposed product is an evaluation tool that will be used here.

## Hypotheses

A variety of gripping gestures will be recorded and evaluated in holistic way in the context of Synergology.

- Hitting and tapping on the proposed item
- Pushing and propulsion of the proposed product
- Rotation of the proposed product
- Manipulation of the proposed product
- Bringing close to the body or further away from it

The neuro symbolic logic evidenced in how consumers handle data:

The theory of the “ego bubble” (Synergologie handouts: M3/Neurosymbolic ) suggests that people use gestures to place an issue discussed closer to themselves: G\_M\_D\_S\_ENDO\_INT (our self bubble), or further away from themselves (G\_M\_D\_S\_ENDO\_EXT), that is, the “away from me” zone.

**Proximity** (close to the body) suggests receptivity, similarity. We place what is important to us closer to us. **Distance** (further from the body) suggests difference, dissimilarity. We place what is less important to us further away from us.

With regards to gripping gestures in this study we will explore the hypotheses of proximation and distantiation with regards to the product under study:

**Proximation:** person pulls product closer to themselves: indicates interest, appeal (P\_MI\_PR\_ENDO).

**Distantiation:** person pushes the product away from themselves: indicates disinterest, weaker appeal. Moreover, we will explore whether the verbal output of a consumer reacting to a product is in line with their gripping gestures of proximation or distantiation (P\_MI\_PR\_EXO).



## 5 THE RESEARCH CASE STUDY

### 5.1 The research objective

The objective of the research conducted is to evaluate the appeal of a proposed new specialty water product at the pre verbal and non verbal level.

The objective is to captivate facial and body movements and expressions, before the consumer articulates their opinion of the proposed product in words. The research purports to investigate:

- 1) Preverbal movements and non verbal body movements and expressions in relation to the proposed object.
- 2) The extent to which the pre verbal and non verbal movements of the person are correlated with their verbal opinion of the proposed product

In each of the interviews conducted there is a wealth of non verbal information to be extracted. Synergology has a wide variety of tools in order to de code an individual's reactions. In this specific research we will ONLY focus on non verbal behaviors that are not touched by already existing research models, so we will not focus on facial expressions.

PAUL EKMAN'S MODEL	SYNERGOLOGY
Evaluates the 7 universal emotions Calibrates movement of facial muscles, eyes and mouth	For this study specifically, out of the Synergology evaluation toolkit, we will use: <ul style="list-style-type: none"><li>- Direction of head movement</li><li>- Direction of eye movements</li><li>- Direction of the chest (trunk) and shoulders</li><li>- Gripping gestures</li></ul>

Up to now, it has only been Dr. Philippe Turchet who has codified the direction of movement of the head and body, and has also codified gripping gestures, so as to make a detailed study of movement available. The codes developed by Dr. Turchet will be used.

#### **The research hypotheses are:**

It is hypothesized that there will be some degree of incongruence between the verbal response of appeal and the non verbal response of appeal. We hypothesize that purchase intention at the verbal level will be higher, and the possible rejection of the product at the verbal level will be milder and less decisive. We hypothesize that at the non verbal level, the signals of appeal will be more clear and more decisive, using the Synergology codification to measure them. The results of this study are expected to confirm earlier research that points out the discrepancy between purchase intention measured in research and actual purchase intention in real life situations. We propose that Synergology will measure intention to purchase more sharply. .

## 5.2 The research setup

Two new products were presented to a sample of target consumers.

Product 1: Test product Voda with Collagen is an award winning innovative product manufactured in Poland, with mineral source water.



Voda is made from source water from Polish mountains, and includes collagen. The front panel of the packaging has the following information:

Brand name: Voda

Brand denominator: Collagen

Descriptor: Sport

Size: 330 ml

At the bottom part it signifies the flavor of cocoa fruit and vitamin C

At the pack panel of the bottle it is presented that the product contains 2,5% collagen and vitamin C for better absorption of the collagen. It states that collagen is beneficial to skin, bones and joints.

This product was chosen for the test because of its innovative concept. It was hypothesized that it would generate an intense first reaction in consumers, offering rich material for analysis. The test product does not exist in the Greek market and Mentekidis S.A. are exploring market opportunity in Greece.

Two focus groups with a total of 16 women consumers aged 30 – 50 years of age preceded the research. The qualitative research results showed clearly that:

- a) the product bottle and esthetics had very wide, almost universal appeal
- b) the product concept polarized collagen. About half of the participants became excited for the beauty benefits of collagen and the rest felt that the product was overly pharmaceutical and “too chemical”
- c) the product taste and flavor were rejected by the wide majority

Product 2: A Greek product with goji berry juice was chosen as a control product. This product was selected by virtue of being a fairly recent launch in the Greek market and not extensively known (the brand is familiar but not the specific juice variant).



This product fulfills the control product conditions because:

- It is also novel
- It has a “health product” positioning
- It has an interesting, unusual core ingredient

The front panel of the packaging has the following information:

The brand name: Christodoulou Family

Denominator: plus

Descriptor: goji berry

100% squeezed fruit

Stamp: contains 30 Greek goji berries

Bottle size: 300 ml

The juice is made of grape and apple juice, and has about 30 squeezed goji berries in it.

The back panel described in detail the benefits of goji berry to health

### 5.2.1 The research process

Consumers were recruited via a telephone interview.

In the screening telephone interview it was ensured that they are not rejecters of juice or fruit products. They were told that they will go through an interview where they will taste two beverages. They were not notified in advance of the two products they would test, and they saw them for the first time in the interview.

Interview setup: Each respondent sat in front of a small empty round table. The round table provided “the space” available for the consumer to place and handle the product. The two products were brought in placed sideways on a round tray. The consumer was asked to pick them up and place them in front of them. She would have to choose which product she could pick first and second, and place on the table, anywhere she desired. The guidelines to the consumer were the following:

*“Take the products from the tray and place them in front of you, anywhere and in any way you want. Take your time to look at these products and then tell me what you think of them”*

After the consumers had the chance to articulate their opinion, they tasted the product. They chose which one they wanted to taste first and which one second. Finally, after the taste was discussed, the consumer was asked to express a purchase intention. The question was *“would you buy any of these products, if yes, which one and why?”*

The interview followed the structure of a qualitative interview, that investigates specific areas with open questions rather than with a structured questionnaire. Each interview lasted from 5 – 8 minutes, and focused solely on product appeal and intention to purchase.

### **5.3 The research sample**

16 women were recruited, aged 35 – 50 years of age. They were of matched demographic profile, that is, they were all working, and interested in health, fitness and personal care.

They were recruited over the telephone, and the screening questionnaire included the following screening variables:

Age: all belonged to the 35 – 50 age bracket

Occupation: all working in white collar jobs

Family status: 10 were mothers with kids at home

Affinity to beverages: all stated that they drink juices and beverage products at least 2 times a month

Fitness consciousness: all expressed that they do any of the following at least once a month:

- Working out/walking/ jogging
- Visit gym, spa
- Visit a hair salon
- Like to take care of their face/body with massage, facials, etc.

The above screening had the purpose of presenting the product to consumers who would be the appropriate target group for Voda Collagen, a product with a sophisticated personal care character.

## 5.4 Data analysis and treatment

Each of the interviews was coded according to the synergology coding system.

More specifically, for each interview, the following data was collected:

### 1. The pre verbal response

The head axes, sitting position and gripping movements were coded before the person articulated their opinion.

### 2. Peri verbal responses

Per interview, expressive non verbal movements were also coded during the rest of the interview until the taste test.

### 3. Post taste responses

The non verbal response of the consumers following the taste test was also codified and analyzed

### Treatment of the data

The following correlations were made

- Product picked first, compared to verbally product verbally expressed to be liked most, as a package, before the taste test
- Gripping gestures per product, compared to verbally expressed likeability
- Head axes and sitting position as per each product, compared to the verbally expressed likeability

## 6 RESULTS

The results for Voda are summarized in the table below:

VERBAL RESPONSE Purchase intention for Voda Collagen	NUMBER OF RESPONDENTS (N=16)
LOVED THE BOTTLE	16
LOVED THE WATER WITH COLLAGEN CONCEPT	10
REJECTED VODA "Too chemical" "Disliked taste"	10
MILD INTENTION TO PURCHASE "Why not" "Love the bottle, will buy for the bottle"	4
POSITIVE INTENTION TO PURCHASE "Yes, once in a while"	2
NON VERBAL APPEAL INDICATORS For Voda Collagen	NUMBER OF RESPONDENTS (N=16)
NEGATIVE APPEAL INDICATORS present in all 16 subjects P_MI_PR_EXO P_M_R P_M_FR P_M_T P_M_Z P_M_DI P_MI_TAP P_MI_DEP  P_MI_PR_EXO ( <b>push away from self</b> ) was present in all 16 interviews and was proven to be the most solid and consistent indicator of rejection	16

**Distantiation** of the test product, away from self, was present in all of the interviews, relevant to the test product Voda Collagen. However, the verbal evaluation of the product was milder, versus the non verbal one.

## 6 RESULTS

The results for Goji Berry JUICE are summarized in the table below:

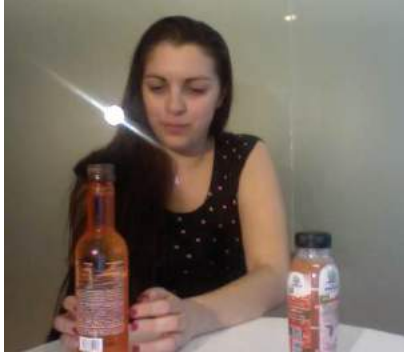
VERBAL RESPONSE Purchase intention for Goji Berry juice	NUMBER OF RESPONDENTS (N=16)
LOVED THE BOTTLE	15
LIKED THE CONCEPT OF THE GOJI BERRY INGREDIENT (Goji berry does not taste good, for some)	9
REJECTED GOJI BERRY JUICE “Not tasty” “Lightly sour taste”	8
MILD INTENTION TO PURCHASE “Maybe I will make myself drink this because it is good for health” “Good for you, so, why not”	2
POSITIVE INTENTION TO PURCHASE “I want to give it a chance”	2
NON VERBAL APPEAL INDICATORS For Goji Berry juice	NUMBER OF RESPONDENTS (N=16)
NEGATIVE APPEAL INDICATORS present in all 16 subjects P_MI_PR_EXO P_M_R P_M_FR P_M_Z P_M_DI P_MI_TAP  P_MI_PR_EXO (pushing away from self) was present in all 15 interviews and was proven to be the most solid and consistent indicator of rejection	15

The research hypothesis was fully confirmed also in the case of the additional tested product. Non verbal information, on the basis of the Synergological interpretation, was more conclusive of purchase intention, versus the verbal evaluation by the consumers.

In the following data presentation, the propulsion of the item (P\_M\_PR\_EXO) **away from self**, is present in all interviews. Before and after taste test screenshots are provided to exhibit the difference in item position in front of the respondents.

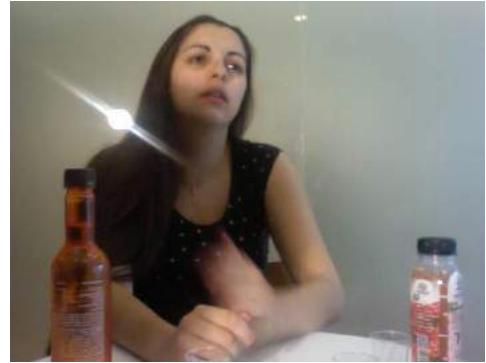
**Between first and last impression of the product, distantiating is a consistent finding:**

For each of the research subjects video recorded, the first and the last impression of the product is noted here in screenshot form. It can be seen that across all subjects, following the taste test, the product bottles are moved (P\_MI\_PR\_EXO) away from their body, signifying weaker appeal. **Product distantiating is further validated by sitting position and head axes.**



1. Iris: 05:20  
P\_MI\_DEP S\_C\_2 (hesitation)  
ASS/ALG/ALG/ARG

Iris shows consideration here and taps on the bottle with both hands



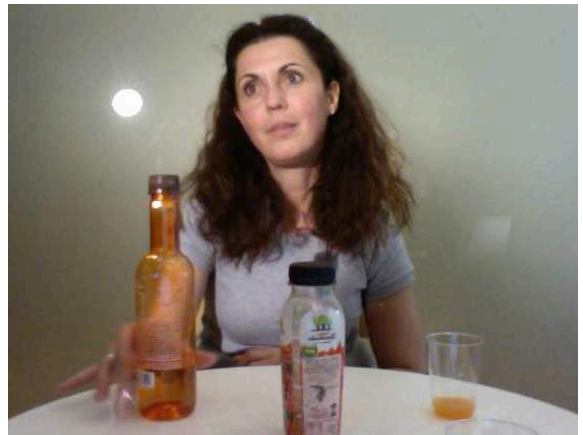
2. Iris: 05:20  
P\_MI\_PR\_EXO S\_C\_2 (hesitation)  
ASS/ALG/ALG/ARG

Iris has pushed both bottles away and has moved her Ego (torso) further away



3. Maria: 00:22  
C\_S\_5 (analyzes)  
ASN/ALG/ARD

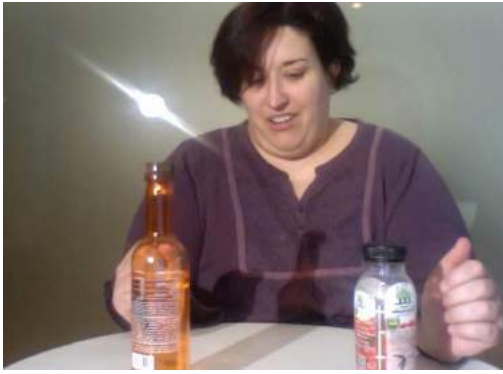
Maria initially shows a considerative stance



4. Maria: 06:08  
P\_MI\_PR\_EXO S\_C\_6 (way out)  
ASS/ALD/ARG

Following the taste test, the Goji Berry product is moved quite far away, and even though she articulates an interested opinion about Voda Collagen, her fingers are distantiating, flying away from the bottle as she touches it.





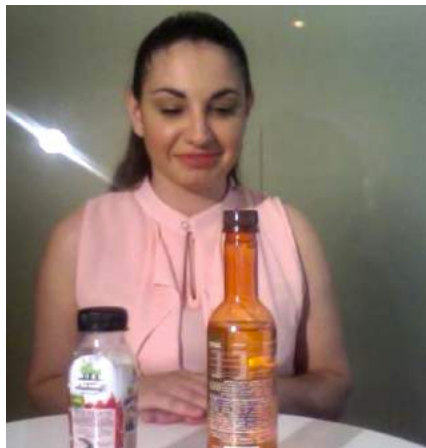
5. Athena: 00:30  
S\_C\_0  
ASI/ALD/ARG

Athens has put both products fairly away from her, right from the start, and her body and head indicate a confused state



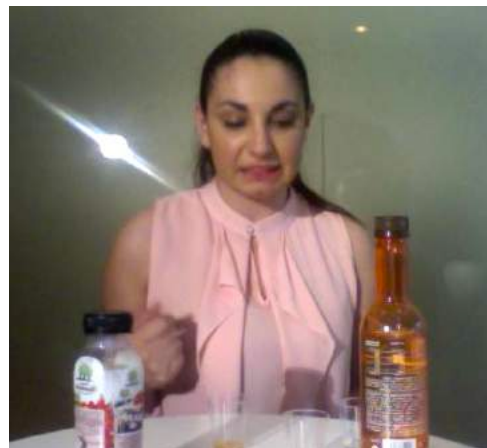
6. Athena: 05:08  
S\_C\_4 P\_MI\_PR\_EXO  
ASN/ALN/ARD

Following the taste test Athena has pushed the Goji Berry away from her and her body and head show a hesitant and cautious state, even though she states "I might buy this"



7. Joanna: 03:35  
S\_C\_0 (indecision)  
ASN/ALN/ARN

Joanna shows a neutral receptive stance of indecision and consideration.



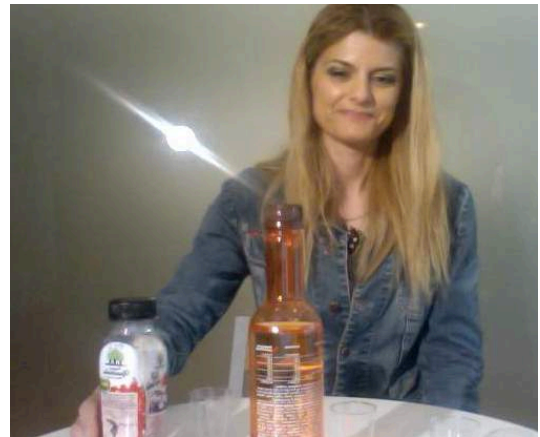
8. Joanna: 06:10  
P\_MI\_PR\_EXO S\_C\_4 (timid)  
P\_MI\_DI (hides one hand)  
ASN/ALN/ARN

Following the taste test she has pushed both products away and is hiding one of her hands, while the other turns away from the products, inwards.



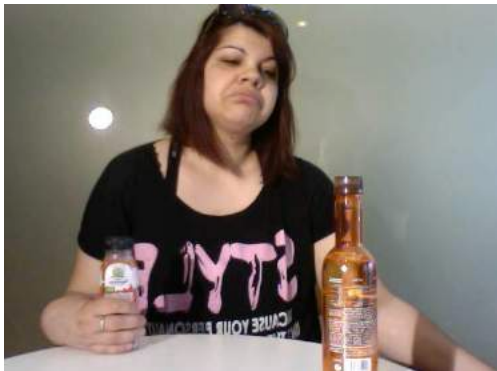
9. Katerina: 03:19  
S\_C\_0 ASN/ALN/ARN/

Katerina has an intrigued, neutral position.



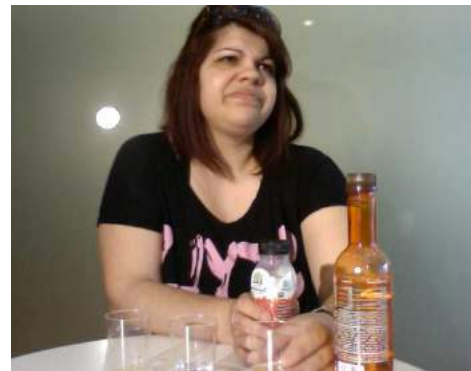
10. Katerina: 07:38  
P\_MI\_DEP P\_MI\_PR\_EXO  
ASN/ALG/ARD

Following the taste test Katerina not only has pushed both products away from her, but she has also moved her body away from the table too, so that the products are in an “away from me” zone.



11. Lena: 00:03  
P\_MI\_RAP P\_MI\_ENDO for Goji Berry  
S\_C\_3 (cautious) ASS/ALG/ARD

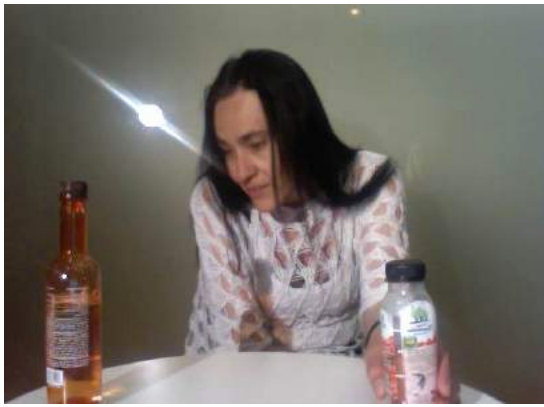
Lena has brought the Goji Berry product to herself in a show of interest, and shows hesitation and disinterest to the Voda Collagen.



12. Lena: 04:30  
P\_MI\_F P\_MI\_PR\_EXO  
S\_C\_0 (indecisive) ASS/ALG/ARD

Following the taste test she grabs at the Goji Berry (P\_MI\_F) and has pushed the Voda further away from herself

Her torso and head axis shows a critical, less receptive stance.



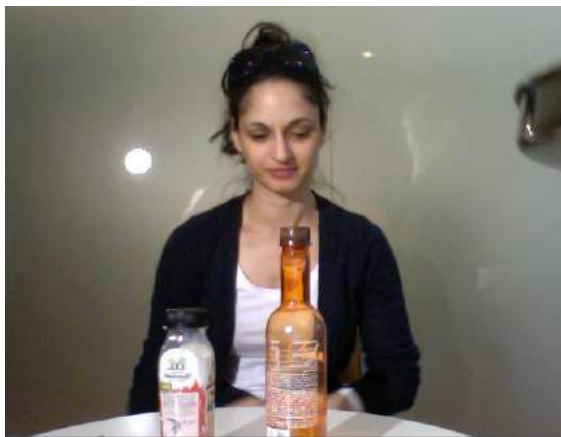
13. Tonia: 00:43  
P\_MI\_DI (hides both hands)  
S\_C\_1 (stress) ASI/ALD/ARD

Tonia shows restrained interest. Her words are very affirmative but she has placed the bottles away from herself, and both her hands are hidden.



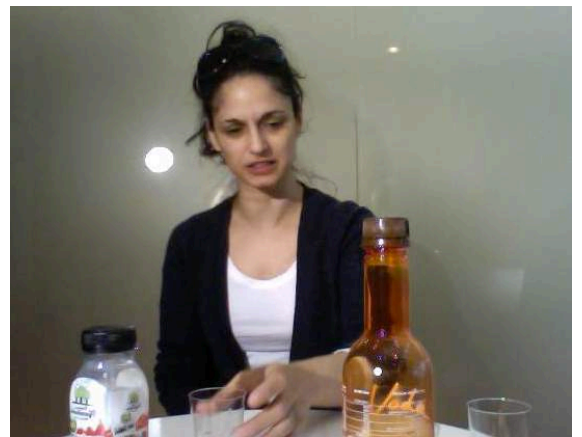
14. Tonia: 10:05  
P\_MI\_PR\_EXO\_EXO P\_MI\_DI  
S\_C\_2 (hesitation) ARN/ALG/ARN (ARD?)

Following the taste test Tonia has distanced Voda even further, keeps her hand hidden and her body position shows hesitation.



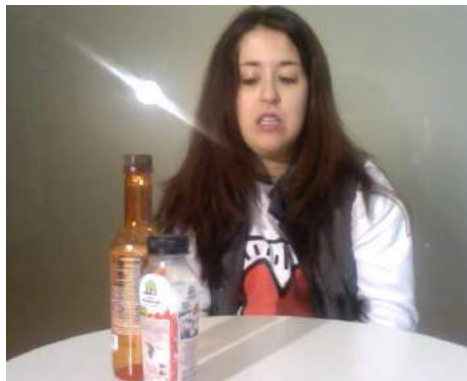
15. Vasiliki: 01:12  
P\_MI\_DI (hides hands)  
S\_C\_0 ASN/ALD/ARD (analytical)

Vasiliki keeps a neutral stance initially. She keeps both her hands under the table.



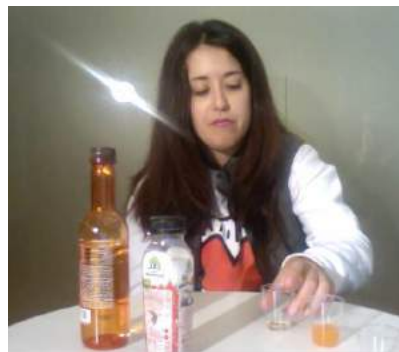
16. Vasiliki: 03:50  
P\_MI\_PR\_EXO  
S\_C\_3 (cautious) ASN/ALD/ARD

Following the taste test, she becomes even more sceptical about the product and continues to be cautious. She places her body in a way that the products, especially the Goji Berry, is in the “away from me” zone, to her right.



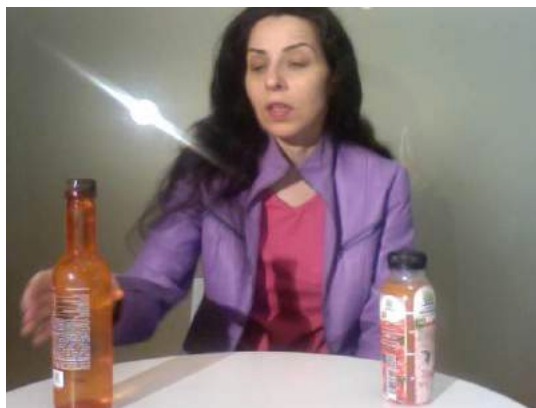
17. Roula: 00:45 P\_MI\_DI  
S\_C\_0 ASN/ALN/ARN

Roula has an initial neutral stand.



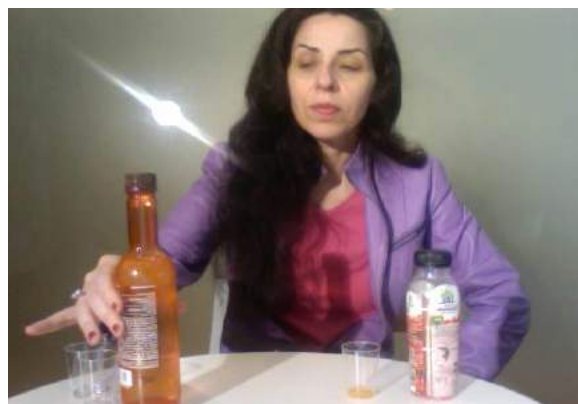
18. Roula: 09:06  
P\_MI\_PR\_EXO\_EXO  
S\_C\_3 ASN/ALD/ARD

Following the taste test she has placed both products in the “away from me” zone and her torso clearly shows “tension” (S\_C\_3)



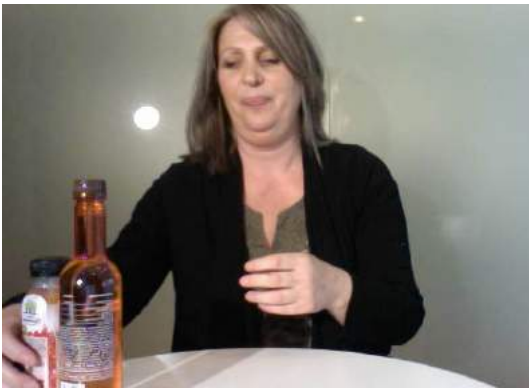
19. Nina: 03:19  
S\_C\_0 ASN/ALD/ARG

She is cautious but interested  
She looks with the left eye



20. Nina: 09:38  
P\_MI\_DEP S\_C\_4 ASN/ALG/ARD

She has lost interest.  
She puts Voda Collagen in the “away from me” zone, and her fingers fly away from it too. Now she looks with the right eye



21. Manto: 00:07  
S\_C\_0 ASS/ALD/ARD

She verbally expresses interest but the products are too far to her right zone (away from me". She is skeptical.



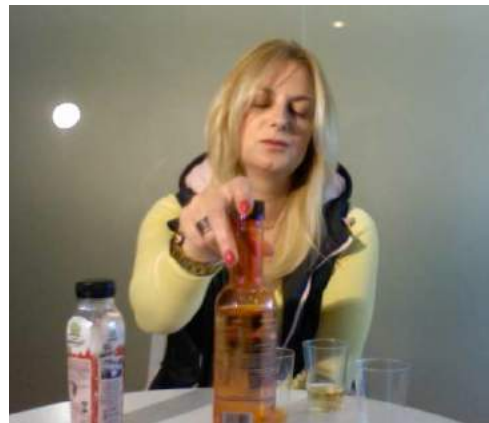
22. Manto: 06:24  
P\_MI\_PR\_EXO ASN/ALG/ARD  
S\_C\_1 (attacks product)

Verbally she voices some interest, and she has moved the products BUT though she has brought them to a different area on the table, she moved them further away from her though she looks at them receptively.



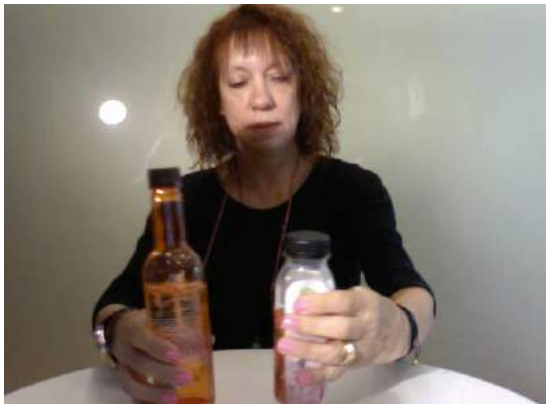
23. Voula: 00:25  
S\_C\_20 (interest)  
ASI/ALD/ARD

Voula is engaged with the products, initially.



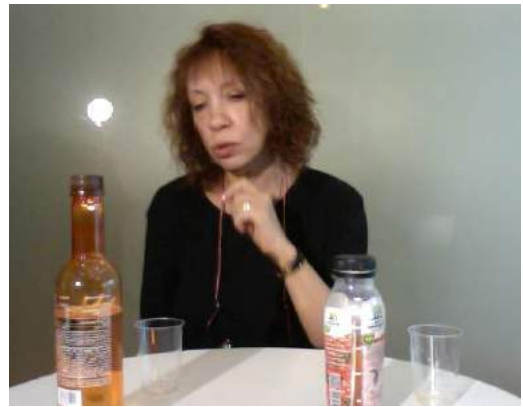
24. Voula: 03:21  
P\_MI\_PR\_EXO\_EXO  
S\_C\_2 (hesitation) ASS/ALG/ARN

Following the taste test she pushes both away, and her body denotes hesitation



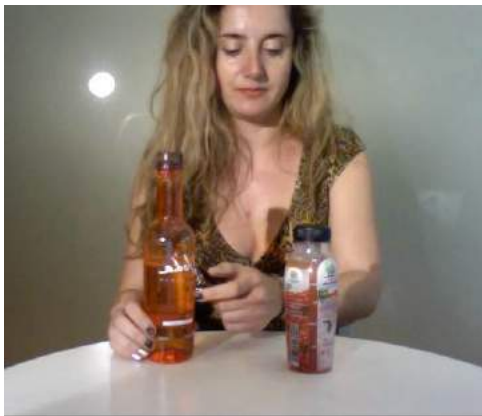
25. Theano: 00:20  
P\_MI\_R  
S\_C\_0 ASN/ALD/ARD

Theano rotates the packages and is intrigued by them, taking an analytical considering stand.



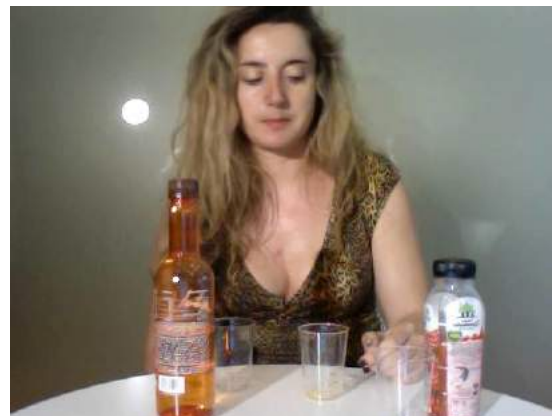
26. Theano: 05:09  
P\_MI\_PR  
S\_C\_4 (timid) ASI/ALD/ARD

Following the taste test she has moved to a cautious, timid position and has pushed both products away from her.



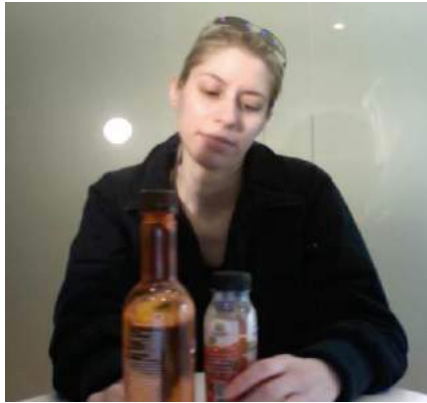
27. Alik: 00:24  
P\_MI\_TAP  
S\_C\_0 ASN/ALG/ARD

Alik places both products fairly close to her self. She taps at the Voda Collagen, she is interested .



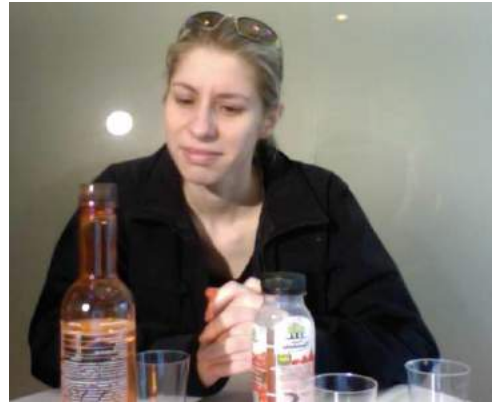
28. Alik: 06:49  
P\_MI\_PR\_EXO P\_M\_DI  
S\_C\_1 ASN/ALN/ARD

She has pushed both of the products away from her. One of her hands is under the table now.



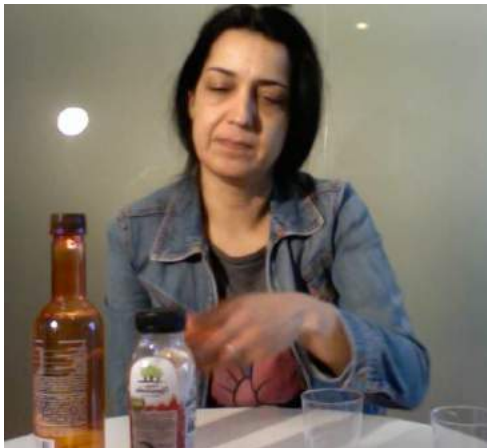
29. Lila: 00:14  
S\_C\_3 (stress) ASN/ALG/ARD

Lila has a sceptical but not negative stance to the products. She puts them fairly close to her personal space.



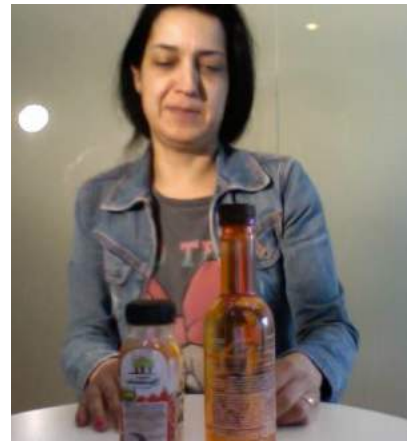
30. Lila: 05:20  
P\_MI\_PR  
S\_C\_2 ASI/ALG/ARG

Following the taste test Lila has pushed both products away, and has placed Voda Collagen more towards "away from me" zone. Her body position is now more hesitant.



31. Despina: 00:20  
S\_C\_3 (stress) ASN/ALG/ARD

Despina places both products to her right and keeps a thoughtful body stance.



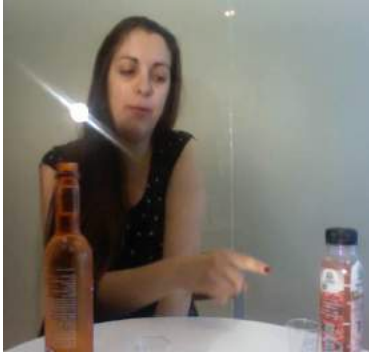
32. Despina: 03:44  
P\_MI\_DEP P\_MI\_PR\_EXO\_EXO  
S\_C\_5 (analysis) ASS/ALG/ARD

Despina distances her body from the products, and pushes both away from her.

## 6.1 Discrepancies between verbal and non verbal responses

In each one of the 16 interviews there were discrepancies where the non verbal response was shown to be sharp and decisive, especially with regards to product rejection, while product acceptance was expressed in a mild or even positive way.

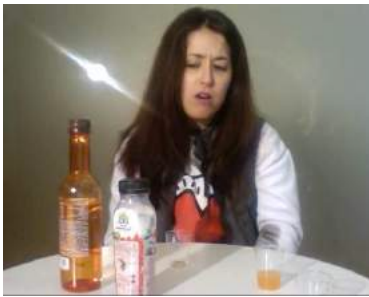
A series of examples is presented here, transcribing the verbal and non verbal expression of the subject in a specific moment of the interview\*:



Iris, 05:15 ASS/ALG/ARD P\_MI\_DI

Verbal expression: "I would drink more of this"

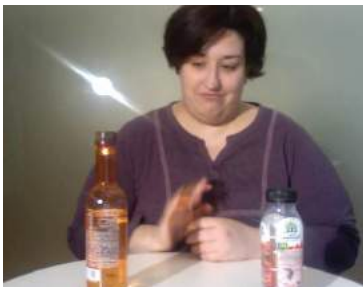
Non verbal expression: "I am not really sure"  
She has placed the body further away from her body  
She hides her left hand  
Her head axis shows a critical attitude



Roula, 07:43 C ASN/ALG/ARD P\_MI\_DI

Verbal expression: "Would buy the collagen out of curiosity"

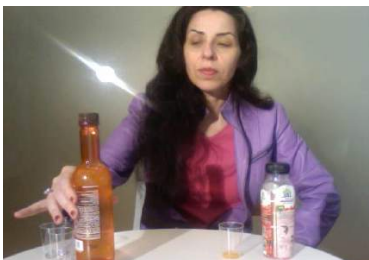
Non verbal expression: "I am not really sure"  
She hides both hands  
She has placed both products in the "away from me" zone



Athena, 03:02, 03:03 ASI/ALN/ARG

Verbal expression: "I might buy this"

Non verbal expression: "Just maybe...and maybe not"  
The bottle is placed away from her, she looks at it from a hesitant body position



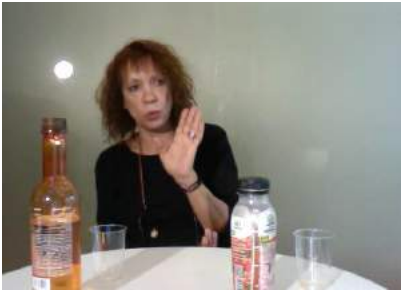
Nina, ASS/ALG/ARG, P\_MI\_DI

Verbal expression: "I am used to seeing this in a pharmacy, now is it a super market product? I might buy one bottle to have..."

Non verbal expression: "Probably not even one bottle"  
She pushes the bottle in her "away from me" zone and her finger flies away too. Her other hand is hidden

\* A video folder is supplied with the 16 full interviews and with video clips of items.





Theano, 04:48 S\_C\_5  
Verbal Expression "No, not the juice.."

Non verbal expression is aligned with the verbal expression in this case.



Theano, 05:09 S\_C\_3 P\_MI\_DI  
Verbal expression: "Maybe collagen"

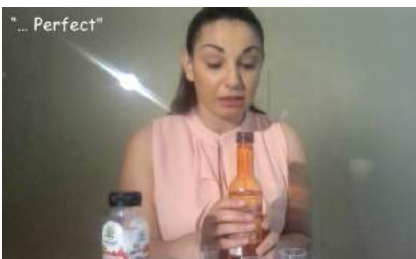
Non verbal expression is less aligned.  
Theano is critical and her hand is hidden



Tonia, 01:00 S\_C\_4

Verbal expression: "I sure like this bottle"

Non verbal expression: "Interesting but not for me"  
She keeps her torso away from the bottle, showing caution and hesitation



Joanna, 06:53 S\_C\_0 ASI/ALN/ARN

Verbal expression: "Perfect"

Non verbal expression "I am neutral, not sure"  
She gives a socially polite utterance but her body expression is one of disinterest, neutrality

### Preference in the first thirty seconds: a case study

We will explore here step by step the discordance between verbal content and non verbal expression. Tracking time, we will present what the interviewee said, versus how she moved:



00:003 "Let me get this out"



00:10 "I got this [Voda] out first"

She places the Goji Berry juice to the right of the Voda Collagen  
Perhaps in the way we are used to placing writing on a sheet (Turchet, 2012)



00:18 "I like its transparency"

She means to say something good about it, but her body moves back, and she is critical (ASS/ALG/ARD)



00:21 "It shows me a clarity"

She goes further back, and even more critical (ASS/ALG/ARD)



00:24 "And I like the bottle shape"

She submits to the attractiveness of the bottle (ASN/ALG/ARD)  
BUT her fingers fly out when she touches a bottle



00: 26 "Normally I should buy this... not sure... perhaps it is more healthy,  
I am not sure"

**She picks up the juice bottle with the whole hand, while she never more than touched with two fingers the Voda Collagen bottle (ASN/ALD/ARG)**



00:36 "Maybe because this is a juice" (showing Goji Berry)

And here she shows receptivity to the juice (ASN/ALG/ARN), more so than to the Voda Collagen

If we integrate the verbal and non verbal findings from this interview, we see that the consumer's dilemma is: "do I opt for what I trust (juice), or do I opt for what is fancy, with a nice, transparent bottle?" When it comes to the decision on the super market shelf, even if novelty wins the first time, trust will generate the repurchase. Predicting the consumer's response from this specific output it can be hypothesized that despite stronger preference being verbalized for Voda Collagen, at the shelf the consumer would still prefer to buy a juice.

## 7 DISCUSSION

This study purported to investigate the discrepancy between consumers' verbal and non verbal responses, when it comes to evaluating new product propositions. Moreover, it attempted to use the tools of Synergology in order to track, describe and evaluate possible discrepancies.

More specifically, we postulated that:

- 1) Non verbal behavior evaluation must at all times complement verbal responses and verabl research data, in order to increase the precision of research in predicting product appeal
- 2) Non verbal behavior evaluation has to go beyond facial recognition, and evaluation of emotion on the face of the consumers. This metric has been used fairly widely, lately, but we have described several reasons for which it is not dependable as a behavioral predictor, on its own.
- 3) The whole of the body of the consumer speaks. Not just the mouth, and not just the face. In fact the facial emotions can be controlled. And the fact that we can now track emotional leakages thanks to the work of a series of important anthropologists and researchers (Ekman, 2004) does not means that this is a good enough tool to shed light to consumer behavior. As we have shown consumer research worldwide favors using the basic emotions, as described by Ekman. We have shown that this is a reductionist view of human behavior. The complexity of human response can not be summarized under a classification of 7 universal emotions.

Synergology provides systematized tools for the study of consumer behavior and in this research we have focused on three specific tools: the axes of the head, the movement of the torso and sitting positions, and finally the study of gripping gestures and micro movements.

The research question was: can we rely on these Synergology tools to decipher discrepancies in verbal and non verbal behavior. Can we bypass the face in evaluating consumer response, and use the head movements, the torso and the hand movements instead?

This research validated all research hypotheses. Despite the fact that the qualitative research sample was small, what elevates the validity of the data is the fact that specific head, body and hand movements which depicted caution towards the products, were consistently present across all of the interviews.

## **Product “proximation” and “distantiation” as a metric of consumer appeal**

We saw in this research that in a non directive environment, where the consumer has freedom to handle and touch the products in any way they choose, the way they will place them in space can be very indicative of their appeal. In this research we saw that the further the products were placed or pushed in relation to the body of the subject, the weaker the purchase intention. This was the metric that was most consistent across all of the interviews.

Moreover, it must be noted that consumers often gave verbal responses where intention to purchase was not decisively negative or decisively positive. However, each time, product distantiation was a good predictor. In a real life depth interview, this proximation or distantiation can truly steer the research probing to the right direction, with the typical tools of qualitative questioning and probing and quantitative questionnaires.

Moreover, the position and movement of the eyes (rotative axis) of the head (sagittal and lateral axis), the position of the torso and the movement of the hands were confirmed in this research to express more sharply and definitively purchase intent, versus verbal statements.

## **We influence the data and the results when we influence the research process**

One important consideration of this research is the fact that the data the researcher gets is the outcome of the process they have designed. In the research we conducted, had we carried out in depth interviews only, then the product would go to the next launching stage, after some taste refinements. A sample of 16 in depth interviews is considered valid enough for a “go ahead” to the next stage. In this case, at the verbal level, all 16 liked the bottle and 10 liked the collagen concept. On the basis of this information, a marketer might think that fixing the taste a little bit might create a product success. However, a research design that allowed synergological tools to be used opened up a whole new space of analysis. Deeper synergological analysis showed that consumers were attracted by the Voda concept but distrusted it. Research would need then to study this distrust and to optimize the product accordingly. In this way, product failures and failed investments can be avoided.

## **Limitations of the research**

The proximation and distantiation effect may have been a product of the specific spatial arrangements. Further research, conducted in a different spatial arrangement will be needed to validate that results are consistent across studies.

The products used for the test were both “non mainstream” in product character. Further research needs to check whether the results will be replicable with more “mainstream” products. The majority of research questions addresses products that are not wildly innovative, so as to elicit intense responses of likeability or dislike. It will be useful to see how sensitive are Synergology metrics when evaluating products that are familiar to consumers, or when comparing products that have slighter differences between them.

It will be interesting to note how transferrable is the reliability of the methodology to other product categories, for example, cosmetics, house care, gadgets, etc. Can the Synergology tools be equally well used to evaluate not products but ideas, brand equity, advertising? We need to consider what kind of research design will be required, so as to make the optimal use of the refinement that the Synergology tools can provide.

Further on, we esteem that it will be important to conduct longitudinal studies that will validate the reliability of Synergology tools in predicting purchase intention. Thus, it will be important to validate research results from a Synergology study through market data that track the performance of a product launch.

## Considerations for the future of consumer research

### Redefining consumer truth

Albert Mehrabian, even in 1971, emphasized how non verbal behaviors are viewed as the more reliable and dependable communication signals among those engaging in the interaction. This is one of the most widely cited pieces of research, with over 5,000 citations in academic journals, and over 100,000 references in Google. Despite the fact that researchers love to cite this information, it is notable how little progress has been made towards updating consumer research tools in that direction. Up to now the data that has been viewed as the most reliable are the quantitative ones, simply because they fulfill the laws of statistics. They are viewed as offering the best predictive metrics.

However, what we propose is that the current market environments in the western world are characterized by product proliferation. There are too many products, which are too similar, in each specific category. It is clear that we will be needing more refined tools, to figure out what works and what does not, among consumers who suffer from information overload and choice overload.

Consumer truth is not simply the conscious truth that the consumer is able to articulate.

Consumer truth is not simply what the consumer feels socially acceptable to express.

Consumer truth is not simply what time pressed, disinterested consumers are willing to share with us.

### Consumer truth as a kaleidoscopic view

We propose that we approach consumer truth as a view thru a kaleidoscope, that is, as a piece of understanding that is brought about through synthesizing multiple dimensions of product character, product features, product messages and product usage. This kaleidoscope view can only become available by expanding our definition of consumer truth to include how the mouth speaks, how the face speaks, how the body speaks, and how the hands or feet speak.

## Research anarchism and challenging the “holy cows” of consumer research

In his books *Against Method* and *Science in a Free Society*, Paul Feuerabend defended the idea that there are no methodological rules to be used specifically, consistently, or exclusively by scientists. He objected to any single prescriptive scientific method on the grounds that any such method would limit the activities of scientists, and hence restrict scientific progress. In his view, science would benefit most from a "dose" of theoretical anarchism. T. S. Kuhn in his now classic book “The Structure of Scientific Revolutions” introduced the term of a paradigm shift, as a requirement for scientific progress.

Consumer researchers work everyday on the paradigm shifts in industry after industry. Consumer researchers have escorted with their research data the transition to amazing innovations in a continuously updating digital world, yet resist a paradigm shift in their own territory, that would multiply the acuity of research tools.

We view that it is “research anarchism”, as defined by Feuerabend, that will deliver the innovation in the field, that will optimize the new product development process. We propose that no single methodology is enough any more. Every research effort has to be multi dimensional and not uni dimensional. We propose that Synergology is one more of the tools of the future, in the tool case for human understanding, that can aid the effort to create solutions that will make our lives better, healthier, easier, and with more relevance and meaning for the welfare of humanity.

## 8. REFERENCES

- Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In: J. Kuhl & J. Beckmann (Eds.), *Action Control: From Cognition to Behavior* (pp. 11-39). Berlin: Springer-Verlag.
- Ariely, D. (2008). *Predictably Irrational*. London: Harpercollins.
- Bagozzi, R. P. (1983). A Holistic Methodology for Modeling Consumer Response to Innovation, *Operations Research*, 31, 128-176.
- Bagozzi, R. P. (1983). A Holistic Methodology for Modeling Consumer Response to Innovation, *Operations Research*, 31, 128-176.
- Bemmaor, A. C. (1995). Predicting Behavior from Intention-to-Buy Measures: The Parametric Case, *Journal of Marketing Research*, 32, 176-191.
- Bonoma, T. V. and L. C. Felder (1977), "Non verbal Communication in Marketing: Toward a Communicational Analysis," *Journal of Marketing Research*, 14 (May) 169-80.
- Buzby, D. E. (1924). The interpretation of Facial Expressions. *American Journal of Psychology*, 35, 602-604.
- Clawson, C. J. (1971). How Useful are 90 Day Purchase Probabilities? *Journal of Marketing*, 35, 43-47.
- Coleman, J. C. (1949). Facial expressions of emotions. *Psychological Monographs*, 63, 1.
- Corpus Synergologie (2016). Version 4. [www.synergologie.org](http://www.synergologie.org)
- Ekman, P. (1964). Body position, facial expression, and verbal behavior during interviews. *The Journal of Abnormal and Social Psychology*, 68(3), 295-301.



- Ekman, P., & Friesen, W. V. Detecting deception from the body or face. *Journal of Personality and Social Psychology*, 1974, 29, 288-298.
- Ekman, P. (2004). *Emotions revealed*. Chicago: Henry Holt and Co.
- Engel, J., Blackwell, R. & Kollat, D. (1978). *Consumer Behavior* (3rd Edition). Hinsdale, Illinois: Dryden Press.
- Engel, J., Blackwell, R. & Kollat, D. (1978). *Consumer Behavior* (3rd Ed.). Hinsdale, Illinois: Dryden Press.
- Ferber, R. & Piskie, R. A. (1965). Subjective Probabilities and Buying Intentions. *The Review of Economics and Statistics*, 47(3), 322-325.
- Feuerabend. P. (1975). *Against Method*. Vers,o, London.
- Feuerabend. P. (1978). *Science in a free society*. New Left Books, London.
- Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior*. Reading, MA: Addison-Wesley.
- Gordon, M., & Rebentish, E. (2009), McKinsey Report. *Wall Street Journal*, 11, 30.
- Granbois, D. & Summers, J.O. (1975). Primary and Secondary Validity of Consumer Purchase Probabilities. *Journal of Consumer Research*, 1, 31-38.
- Hanawalt, N. G. (1942). The role of upper and lower parts of the face as a basis for judging facial expressions I. In painting and sculpture. *Journal of General Psychology*, 27, 331-346.
- Harrison, R. P. (1964). *Pictic analysis on facial communication*. Michigan State University.
- Hartley, R. F. (1995). *Marketing Mistakes*. John Wiley and Sons, Australia.

- Haynes, J., Soon, C., Brass, M., & Heinze, H. (2008). Unconscious determinants of free decisions in the human brain. *Nature Neuroscience*, *11*, 543-545.
- Howard, J. A. & Sheth, J. N. (1969). *The Theory of Buyer Behavior*. New York: John Wiley.
- Keim, B. (2008, April 13). Brain Scanners Can See Your Decisions Before You Make Them. Retrieved from <http://www.wired.com/2008/04/mind-decision/>.
- Kuhn, T.S. (2000). *The structure of scientific revolutions*. Chicago: The university of Chicago Press.
- Lindstrom, M. (2008). *Buyology*. New York: Doubleday.
- Mehrabian, A. (1971). Verbal and non verbal interaction of strangers in a waiting situation. *Journal of Experimental Research in Personality*, *5*, 127 – 138.
- Mehrabian, A. (1981). *Silent messages: Implicit communication of emotions and attitudes* (2d ed.). Belmont, Calif.: Wadsworth Pub. Co.
- Morwitz, V., Steckel, J., Gupta, A. (2007). When dopurchase intentions predict sales, *International Journal of Forecasting*, *23* (3), 347–364.
- Newberry, C. R., Kleinz, B. R. & Boshoff, C. (2003). Managerial Implications of Predicting Purchase Behavior from Purchase Intentions: A Retail Patronage Case Study. *Journal of Marketing Services*, *17*, 609-618.
- Nielsen, J. and Pernice, K. (2010). *Eyetracking Web Usability*. Berkeley, CA: New Riders.
- Pickering, J.F. & Isherwood, B.C. (1974). *Purchasing Probabilities and Consumer Buying Behavior*, *Journal of the Market Research Society*, *16*, 203-226.
- Rosenthal, R., & DePaulo, B.M. (1979a). Sex differences in accommodation in nonverbal communication. In R. Rosenthal (Ed.), *Skill in nonverbal communication: Individual differences*. Cambridge, MA: Oelgeschlager, Gunn, and Hain.

- Rosenthal, R., & DePaulo, B.M. (1979b). Sex differences in eavesdropping on nonverbal cues. *Journal of Personality and Social Psychology*, 37, 273–285.
- Taylor, J. W., Houlihan, J. J. & Gabriel, A. C. (1975). The Purchase Intention Question in New Product Development. *Journal of Marketing*, 39, 90-92.
- Turchet, P. (2009). *Le Langage universel du corps*. Les Edition de L’Homme: Quebec, Canada.
- Turchet, P. (2012). *The secrets of body language*. Skyhorse Publishing, NY: New York.
- Tversky, A. and Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. *Science*, 185, 1124-1130.
- Ullman M. (2004). Contributions of memory circuits to language: the declarative-procedural model. *Cognition*, 92, 231–70.
- Warshaw, P. R. (1980). Predicting Purchase and Other Behaviors from General and Contextually Specific Intentions. *Journal of Marketing Research*, 17, 26-33.
- Wedel, M. & Pieters, R. (2008). *Eye Tracking for Visual Marketing*. London: Now Publishing.

## EXECUTIVE SUMMARY

TITLE	Synergology as a research tool in purchase intent evaluation
SUB TITLE	Assessing the validity of Synergology tools in evaluating non verbal reactions to new product propositions
NAME	Agnes E. Mariakaki Athens, Greece
FIRST SYNERGOLOGY YEAR	2013
INITIAL HYPOTHESIS	In new product appeal evaluation, the purchase intention will be more accurately measured with synergology tools, than with verbal expression
ABSTRACT	<p>This paper proposes that evaluation of new product appeal and purchase intention via verbal consumer responses only is subject to repeatedly validated bias. Moreover, the usage of nonverbal evaluation methods up to now is restricted to tracking facial expression of emotion, which offer a very narrow scope of information and predictive value. We propose that Synergology tools that evaluate non verbal responses by tracking movement of the eyes, the head, the torso and the hands may have high validity in evaluating purchase intention, in conjunction with verbal responses. In a qualitative research study, 16 in depth interviews were conducted, evaluating two product propositions, using Synergology tools, and more specifically, the head axes (Sagittal, Lateral, Rotative), the Gripping Gestures and the Sitting Positions. The study fully confirmed that the verbal expression of product appeal was not as sharp and as decisive as the non verbal expression. The synergology tools were proven to be efficient in evaluating with precision and sharpness the purchase intention towards the two products.</p>