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POLITICAL NEUROMARKETING

An Empirical Research on Voter Decision-Making

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ACKNOWLEDGMENTS

To my country,

Italy.

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RESUMÉ

*The better **understanding of the decision-making process behind voters' choice** has been the challenging purpose of this research, with the aim to answer marketers', politicians', and citizens' doubts about the fully deliberateness of political behaviors.*

To fulfill this request, our research has proposed to improve current explanations with a new interdisciplinary approach. Economist's models and Consumer Behavior theories have been supported by Neuromarketing which, for the first time, has exceed the lacking comprehension of unconscious in voter's mind. This study has tested empirically the assumed existence of relevant unaware sub-steps in voters' choice process, overcoming the barriers of consciousness with the use of a recent cognitive methodology. The Implicit Association Test (IAT; Greenwald et. al, 2003) has made achievable to quantitatively measure the unconscious political attitudes of 68 respondents through an experiment in the Italian context. The relation between those implicit attitudes and respective explicit preferences - collected through normal surveys - has been outlined (r=.46); further analyses have also evidenced undecided voters' attitudes and Parties/Leader differences in preference structure.

Discrepancies and correlations between what subjects expressed and what they unconsciously perceived during the test have generated a discussion about the necessity to include implicit attitudes in the functioning of voter's decision-making. A new model of voting behavior framing this process has been introduced, with the opportunity of further improvements. In conclusion, the explanation of this socially relevant behavior has shown impressive implications, contributing to political marketing and forecasts practices, but it has also required advanced considerations on ethical applications of this knowledge.

Relevant academic fields: Neuromarketing, Political Marketing, Consumer Behavior, Cognitive Psychology, Italian Politics.

INTRODUCTION

There is a new field of marketing which studies consumers' cognitive and affective responses in relation to markets: it is **Neuromarketing**. It originates in neurosciences with the purpose of *better understanding the functioning of human mind, in order to improve marketing strategies* (Lee *et al.*, 2006). Through interdisciplinarity (from neuroanatomy to cognitive psychology), it offers unique methods in *decoding processes* that take place in the consumer's mind and it can be used to *measure individual preferences*, a field otherwise abundant of cognitive biases (Drucker, 2002). In some cases, effective brain responses may not be consciously perceived by the subject; hence, this cognitive kind of data may be more revealing than other typical marketing tools, such as self-reporting on surveys or focus groups.

That is particularly true for **Political Marketing,** an area of application where doubts are still numerous, current researches are repetitive and inspire just old marketing approaches. In this field new insights are absolutely needed to overcome concerns as well as biases, and cognitive science nowadays offers great capabilities in this sense.

A cognitive contribution to Political Marketing is actually my "tempting" answer to the question: how do we choose what to vote?

This kind of investigation offers incredible opportunities for political marketers, parties and pollsters, but it can also fascinate outside the political marketplace. Affecting economic, social and scientific word, a deep investigation of this topic has a natural *social relevance,* rising everyone's curiosity and interest. What is more, neuromarketing is likely impinging over the next few years, and it might be fascinating to be able to manage it competently, to appreciate its potentiality and to know the eventual ethical risks. The *personal relevance* of this thesis not only concerns me as a future "marketer", enhancing the ability offered by this academic specialization, but it also interests a young administrator, a little politician and a citizen of this country as I am.

Anyway, back to the more considerable *marketing relevance,* the core questions of this research arouse from the scarce understanding of political behavior in its structure.

Common political surveys follow formats such as "What do you think about candidate X?", "Which factors influence your decision to support Party Y?", but exclusive reliance on such survey methods actually ignores the *knowledge* given by neuroscientific discoveries and implicit cognition. To fully bring the nature of political choice, this research not only considers voters' decision-making from its *rational[i] level* – the *explicit* preference respondents are *aware* of – but it also investigates voters *nonconscious[ii] level* – the *unaware* brain activity that gives *implicit preferences* (e.g. Knutston *et al.*, 2007). We are in a new field that we can call "**Political Neuromarketing**".

Within the sphere of "political choice", the focus of this thesis is on *voter's behaviors,* expressed by measurable voting intentions[iii] to a certain candidate or party. **Voter decision-making** is surely one of the behaviors that demand the greatest attention from academics, politicians, and public, with many studies and attempt to frame its working process also outside neuromarketing. Even if the "Rational Model" is the muster framework about voting choice, many authors have in turn recognized that emotions and unconscious can affect political decision and that this behavior is based on both explicit and implicit attitudes. As Taber noted "Political science, long under the spell of the Enlightenment view of rationality, has not been particularly friendly ground for the germination of either affective or automatic models of information processing" (2003, p. 462). To follow this less explored path, this research investigates the deliberate or automatic structure of voters' responses through a neuromarketing experiment.

In sum, **the main purpose of this thesis is to better comprehend political decision-making, discerning perceptions that compose candidates and parties preferences during the voting choice. Aware and unaware political perceptions have been tested to assess if voters' attitude is a fully deliberate process or if it is also affected by non-conscious factors.**

To answer this question it is necessary **to shed some new light on the interplay of implicit and explicit processes underlying voting intentions** in order to see if implicit and explicit attitudes in political perception are coherent and when these two measures of political perception differ (see *Research Questions* in *Table 1*).

Implicit measures of attitudes are the way to *identify unaware or automatically elicited reactions which influence political behavior* (Burdein *et al.*, 2006). Thus, an empirical section of this research assesses respondents' political orientation both explicitly by the use of **self-reports**, and implicitly through the **Implicit Association Test (IAT).** The IAT is an excellent tool measuring implicit cognition without requiring an act of introspection or brain scanning (Banaji, 2001); it is the best available way to enter directly into the unconscious mind of the consumer - or voter. Since its introduction in 1998 (Greenwald *et al.*), this method has been refined in several scientific publications which reduced limitations, and its reliability is now totally proved (e.g. Greenwald and Nosek, 2001). Additionally, the IAT contributed to the study of marketing-relevant human behaviors moving neuromarketing away from being identified solely with neuroimaging (Lee *et al.*, 2006).

This is the first time that a research takes into account the voting behavior question from a multidiciplinary point of view. Previous studies have developed it separately in different branches of learning: psychology, neurology, behaviorism, CCT and economy. On the contrary, the *whole complexity* of this topic is analyzed here to give a broader *framework* of voting behavior, with the core support of an experiment.

This study has received first theoretical inputs from Danish Neuromarketing researchers, but the research question, and consequently the empirical analysis, has been matured in the Italian political context. Not only Italy is the political context I know better because of my current life, but it is also internationally considered one of the most interesting and extreme case in political marketing, perfect to drive this kind of researches away from ordinary considerations.

The implementation of this research generates a discussion about the **implications** of this results for Political Marketing and for literature with the introduction of the new Neuromarketing model of voting behavior.

Finally, some consideration about the possible **ethical limits** of neuromarketing in this context must also be taken into account**,** together with the possible **further studies** offered by this socially important subject.

Focusing on voter's implicit cognition is perhaps the toughest way to make novel understanding of political behavior, but I am sure this is also going to be compelling and amusing.

TABLE 1: RESEARCH QUESTIONS
What is the nature of voter's decision-making during the choice of parties and candidates?
Is voters' attitude a fully deliberate process or is it also affected by non-conscious perceptions?
In political choice process, are implicit and explicit voters' preferences coherent or do the aware and unaware attitudes toward candidates and parties differ?

LITERATURE REVIEW

A first fundamental understanding for any political marketing strategy is undoubtedly to comprehend how voters behave the way they do; and this is exactly the focus of our study.

Although voter's choice is still often considered one of the most explicit domain in which people easily and willingly articulate their mental contents, marketers and psychologists developed different theories on political behaviors during the years.

VOTER'S DECISION-MAKING: EARLY INSIGHT

How to vote in an election, or whether to vote, is the result of an *individual decision making* process, a subject rich of literature. As the political market place demonstrates to have much in common with the consumer market; some theories were developed, from the classical economics to the more recent marketing acknowledgments, trying to explain the reason behind people's vote.

A RATIONAL PERSPECTIVE

Economic theories consider human behavior as the result of a process of decision-making made by weighing costs and benefits of actions to maximize utility (Camerer, 2005).

Since 1967, Downs's milestone, *An Economic Theory of Democracy*, actually suggested that the abstract model of rational self-interested activity, used so successfully in economic analysis, could also be applied to the behavior of private economic agents. He has developed this relation indeed, creating the model which is still considered the most important framework of voting behavior: **the "Rational Choice Model"[iv]**.

It is based on two important analogies: parties can be modeled as if they were profit maximizing entrepreneurs; *voters are regarded as if they were utility maximizing consumers trading their votes in return for favors - higher standard of living - from parties* (Downs, 1957).

Similarly, the economic model of voting behavior follows logically from the assumptions about human nature at the heart of neoclassical economics, so it is based on a rational individual (the so called *Homo economicus*).

In political marketplace this assumed individual, that we can call *Voter economicus,* has some important hypothetic characteristics (Bartle & Griffiths; 2002):

1. he is *consistent* in his preferences;
2. he is *instrumental,* meaning that a vote is casted to affect policies – not to express identity;
3. he is *egoistic,* because he casts his vote to optimize his own (or his household's) wealth;
4. he is *perspective*, he votes to influence the future stream of benefits from the government;
5. finally he is an *optimizer,* acting to maximize benefits for a given level of costs.

It should be noticed that for the *economists*, the ultimate east of any model is the extent to which it makes accurate predictions, not the realism of its assumptions (Friedman 1951). As a result, this model is still considered up-to-date and valuable, even if it is based on a simply theoretical base: voters will support whichever party is perceived as most likely to benefit them most.

Downs assumptions of maximization, firstly imply that they make use of the most appropriate of the available means to pursue their ends and, secondly that they exhibit a *well-behaved preference structure*: an actor preferring both A to B (a Democratic to a Liberal government) and B to C (and a Liberal to a Conservative government) will also prefer A to C.

In this model, judgments could be made retrospectively or prospectively. Voters therefore examine the promises of the parties in order to calculate an "*expected* party differential" that represents the difference between the utilities they expect from the two parties if they were elected to office. They may also compare the past performance of parties. This "*current* party differential" can be used as an alternative standard for the vote decision.

Alternatively, the current party differential can be used to determine the credibility of the parties' premises (Downs, 1975, p. 40). *Parties that have kept their premises in the past will be more credible that those that have not.*

The basic rational-choice model of voting has retained is relevance during years, but it has been enhanced by some economists. The best outfit of the previous assumptions is the rational model that has been developed considering also the element of political participation (Blais, 2000):

The relative utility of voting, for a particular eligible voter, is $\Delta U = pB - c$

where p is the probability that a single vote will be decisive, B is the relative benefit

associated with your desired candidate winning the election, and *c* is the net cost of voting – that is, the costs, minus the direct benefit of voting (whether or not your candidate wins).

Traditionally, B is understood to refer to direct benefits to the voter. This is the assumption of self-interest. Recent studies (Edlin *et al.,* 2007) expounded this framework keeping the rationality but breaking the link to pure self-interest (*B*) with the inclusion of individual benefits *Bself* and social benefits *Bsoc*[v] for an affected population of size N: $$B = Bself + \alpha NBsoc.$$

$$\Delta U = p \ (Bself + \alpha NBsoc) - c$$

Critics to the Rational Model

The rational model, despite its undoubted simplicity and wideness, has often been considered limited for the representation of complex political context. Much literature actually criticized this solution, arguing about the exhaustiveness of these few elements in making accurate predictions. Firstly, Sprague and Huckfeldt claimed that *people's political perceptions* cannot be removed from their contexts (in 1987). "Individuals are not atomistic actors in political life, but are situated within multiple networks that provide information, cues, and opportunities to engage in politics" (Sprague & Huckfeldt, 1987). Moreover, as accounted by many of following researchers (lastly Dubner*,* 2007), this framework lacks in consistency because the element p - the probability a single vote affects the elections - would be almost null, with the consequence of abstentionist behaviors.

Just as it would not be rational to vote, so *it is not feasible to collect a great deal of information about politics* to maximize the choice (Huemer, 2003). *Economists* actually suggest that voters decide by comparing the parties' ideologies and supporting that party whose core principles come closest to their own (Downs, 1957), but recent researches observed that, dealing with contexts in which resources and available time are severely limited, people use simple and fast algorithms which require only a limited amount of information (Gigerenzer *et al.*, 2002). Choice under uncertainty is described as a sequential process of selection among alternatives based on a single cue at any point in time. Far from optimization, as soon as a satisfactory choice is reached, the decision making process stops (Gigerenzer & Goldstein, 1996, 1999). Thus, as voting is a resources and time limited choice, in this

procedure there is *no space for conscientious comparison across different cues*.

Even more, economists have especial difficulties in accounting for the stability of voters' preferences. The rational-choice lexicon appeared to contain no simile for *trust of loyalty* (Fiorina, 1981), another element not included in the rational model that should be explained furthermore with empirical evidence.

Since the 1980s, many have been arguing that "the traditional models are not realistic and should be tested primarily by the accuracy of their predictions rather than by the reality of their assumptions" (Hindess, 1988, p. 9-10). During these years *Marketers* have gone behind the neoclassical economic view; in line with this research question, they have outlined a more complete framework of voting behavior.

MARKETING MODEL

Once the restrictive assumptions of *Homo economicus* were broken*,* the complexity of influences affecting voter behavior was also recognized in political markets.

The "Marketing Model" developed a multi-structured theory of behavior, adding elements that are precious for the analysis of this study. Kolter, from the *marketers*, argues that consumer's choice is the "result of the complex interplay of cultural, social, personal, and psychological factors" (Kolter, 1984).

In Political Marketing, these theories resulted in the primary election **marketing model** studied by Newman and Sheth (1985). As showed in Figure 1, this model moved far from rational maximization of utility, showing seven relevant components affecting voters' political choices:

FIGURE 1: MARKETING MODEL OF VOTER BEHAVIOR
(Newman & Sheth 1985)
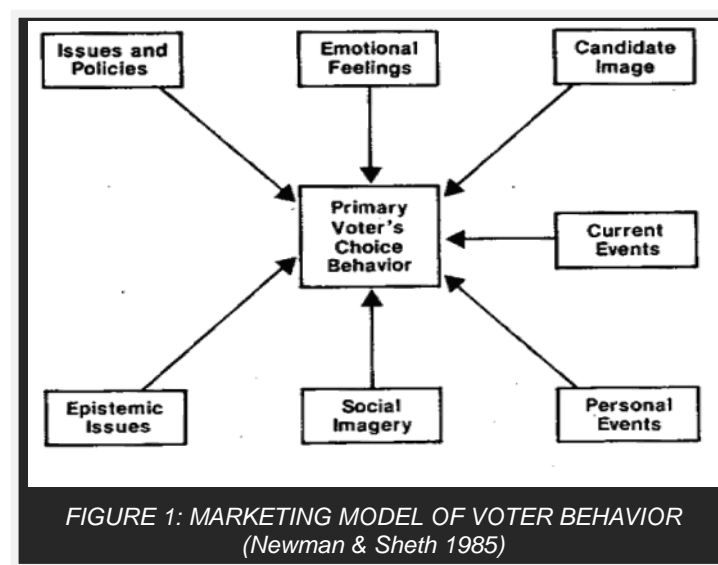
From the *first* marketing school many studies have been implemented and many theories have been developed in the same direction.

Remarkable is the recent *Consumer Culture Theories* (CCT) approach, emphasizing the importance of social structures in shaping individuals' voting habits (class, ethnicity, occupation, education, geographical location, gender etc.). They noticed that *voters often use their socio-economic reference groups vote to establish what is appropriate* behavior for "people like themselves" (also called "**Social Structures model**"). A recent published article on political CCT pointed out that social class and race may have varying affects on the political actions and views of individuals (Leighley & Matsubayashi, 2009).

Critical to rational assumptions - where all voters follow similar procedures for making electoral decisions – is the relevant Italian study of Baldassarri and Schadee (2005). They argued that voters (1) reason in qualitatively different ways, (2) evaluate according to different criteria, (3) use different types of information, and (4) follow different paths to arrive at the same choice. From this "fast and frugal decision making" they also suggested that, *to understand voter's behavior a set of non-rational potential cues has to be taken in account.*

The plan of this research is to codify and measure these unaware perceptions, if there are any.

A first input in this direction was a study carried out during the 1980 presidential race, where Abelson and his collaborators (1982) found that *summary scores of affect were better predictors of political preference than candidate personality judgment.*

Feelings have actually been studied from *marketers* since the early 1980's. They call them *Emotional feelings* and they represent "the emotional dimension of voting" such as hope, responsibility, patriotism, etc. aroused by the candidate, having been established on the basis of the issues the candidate advocates" (Newman *et al.*, 1985). He also said that a voter may be aware of the candidate's personality but, if he does not have any feelings about it, he may be less motivated to vote.

The most interesting political investigation of this period is the first Westen's study on this topic (1985). In his opinion, *US Democratic campaigners have been unable to run emotionally compelling campaigns.* He approached the subject from his roots in psychoanalysis, but the cores of his research were his statements about the cerebral resistance of Democrats to use emotions. "An intellectual bias in favor of factual

debate, combined with a feeling that the brain is a morally more superior route to the voter than access through their heart". He also argued that there is a mistaken belief that reason can provide not just the means but also the ends, distrusting in the manipulative side of emotion. He continues underlining that, on top of all that resistance, there is a personality style that is associated with many people who, in the author's experience, reach the top in Democratic politics in the US. These personalities have an inbuilt discomfort with emotion. He concludes representing this discomfort as "the biggest static impediment to more effective campaigns [...]".

In the hypothesis of not fully rational "political brains", this consideration could be precious to any marketers.

Nonetheless they are impressively remarkable for research purposes; marketing theories are not totally satisfying in explaining voting behavior because they measured personal feelings as the representation of *explicit* dimensions of emotional arousal generated by the candidate. The models seen so far still lack in the analysis of some relevant elements. In particular, unaware perceptions have not been taken into account because they are difficult to be observed. In order to develop some hypothesis to answer research questions we need further insights. To understand how implicit factors can affect voting behavior we need Neuroscience.

VOTER'S DECISION-MAKING: NEUROMARKETING INSIGHT

Brain scanning techniques and our recent knowledge about how mind works are increasingly being incorporated into marketing and political debate. They are forcing to re-examine old assumptions by giving new evidences of the complexity of voting choice and showing that perceptions are structured by different elements.

The *fundamentals of neuromarketing* regarding decision-making are briefly presented in this section, and then the focus is moving to their application in politics, with physical and psychological experiments.

In truth, no one studying the brain or the mind can really accept the idea of a disembodied rational self inside our heads taking all our decisions on the basis of self-interest (Taylor, 2009). Conversely, many neuromarketing studies have shed light

on the relevance of implicit/unconscious components in human behavior, encouraging former marketing hypothesis in this direction.

A deep understanding of decision-making process is given by Walter and his collaborators (2005). In their opinion *neuroscience finally deconstruct the picture of perfectly rational humans weighting costs and benefits until a deliberative equilibrium is reached*. Although they sustain that humans are definitely capable of conscious deliberations, they give significant evidences of the fact that "many, if not most, relevant decision processes are characterized by other features which are not under volitional control". They demonstrate that implicit drivers, such as automatic, fast and affective cognitive process, actually play a decisive role during choices and, generally, they sustained that unrecognized mechanisms - often primary emotional responses evolved for other purposes than the choice object - lead the majority of humans behaviors.

Similarly, there have been authors demonstrating that we share most of our emotions with animals[vi] and that our primitive *Homosapiens* brain is inadequate to act in the modern political world[vii], but the most interesting neuromarketing studies are those connecting primary unconscious behaviors with decision-making processes.

From Libet's groundbreaking studies on earlier choices[viii], Knutston *et al.* (2007) analyzed sub-steps of decision-making using neuroscience techniques. They found that *initially decisions are made at nonconscious level in our brains, before the end of the decision process, and then they are ratified consciously*. The brain response was up to 500 milliseconds before the person was aware of making the decision; in other words, the unconscious brain "decides" to act before our conscious mind confirms the action.

There are various other researchers which sustained the relevance of unconscious components in consumer choice process. Fitzsimons *et al.* (2002) also argued that the degree to which nonconscious influences affect choice is much greater than what many researchers believe. Across a series of research domains, *the components affecting choices were found to include stimuli that are not consciously perceived by the consumer.* What is more, not only there is a nonconscious downstream effect of consciously perceived stimuli, but there are also decision processes that occur entirely outside awareness. Most importantly, they finally argued that *all decisions consist of a mix of conscious and automatic processes*, which are hence strongly

affected by nonconscious-implicit influences.

Also if we move in the field of *voting behavior*, Neuroscience has improved the investigation through the contributions of two neuromarketing methodologies: brain-scanning methods and cognitive neuropsychology.

On the one hand **physiological measurements** focus on **fMRI** (functional Magnetic Resonance Imaging) to disregard the research object from the ability and willingness of the respondents to accurately report their answer.

On the other hand **cognitive psychology researches** focus on the **IAT** to increase decision-making accuracy in the studies of mental processes behind implicit voting behavior.

PHYSIOLOGICAL MEASUREMENT

As it was just presented, consumer choice making has been a popular subject for neuromarketing research and many authors, in these studies, noticed the absolute relevance of unconscious and emotional elements in driving choices.

Emotions are defined in neuromarketing as *the bodily expression of an inner state that in a fragment of second mechanically respond to a stimulus*. Emotions analysis is especially interesting because it presents automatic/unconscious elements which are hard to conceptualize, but which can be measured by magnetic resonance (fMRI) during voting choice.

A new role of emotions in voting behavior has been investigated by **Drew Westen,** showing the great contribution of cognitive science to political market. His book, *The Political Brain* (2008), is still considered to be the most relevant study on the power of emotions to persuade in politics. "In politics, when reasons and emotion collide, emotion invariably wins. *Elections are decided in the marketplace of emotions,* a marketplace filled with values, images, analogies, moral sentiments, and moving oratory, in which *logic plays only a supporting role"* (Westen, 2008).

His research is based on a brain scanning (fMRI) study of 15 committed Democrats and 15 committed Republicans in the final heated month of the 2004 Presidential election campaign. Slides of their favored candidate (John Kerry and George W. Bush) were shown to each tested subject. In particular, the tests involved opposing pairs of candidate's biased statements contradicting each other, and the subjects were asked to consider and rate any discrepancy. Answers showed subjects were

able to detect contradictions made by the rival party candidate and those of neutral figures (such as actors or and other popular people) but *they were not able to recognize when their own candidate was either lying or misrepresenting the facts*. Specifically, when Republican test subjects were shown self-contradictory quotes by George W. Bush and when Democratic test subjects were shown self-contradictory quotes by John Kerry, both groups tended to explain the apparent contradictions in a manner biased to favor their candidate of choice. Similarly, areas of the brain responsible for reasoning [presumably the prefrontal cortex] did not respond during this test, while areas of the brain controlling emotions [presumably the amygdala and/or cingulate gyrus] showed increased activity when compared to the subject's responses to politically neutral statements associated with neutral people (Emory University press release, 2006).

Dr. Westen comment was: "Essentially, it appears that partisans shake the cognitive kaleidoscope until they get the conclusions they want, and then they get massively reinforced for it, with the elimination of negative emotional states" (quoted as saying in an Emory University press release, 2006). The author consequently concluded that *the brain is not a dispassionate calculating machine, objectively searching for the right facts, figures and policies to make a reasoned decision*, on the contrary "the political brain is an emotional brain". As has already sustained in 1985 (see p.13 of the cu present research), he finally considered that the Democratic Party has often failed in U.S. because it has appealed to the reason-loving dorsolateral prefrontal cortex, while Republicans have won more elections because they have targeted the "emotional brain" [ventromedial cortex], which is the most used in the choice making process.

Theories suggested that many behaviors engage *unconscious* processes that are automatic and direct. This "unconscious mind" can produce complex emotional responses, and can also influence behavior without our knowledge. Particularly explicative is the example of horror movies that make us afraid also if we rationally know that it is fiction. Amygdala stimulates hypothalamus - that exerts control on emotions - sending inputs to it without our control.

This process may happen in our brain also when it is stimulated during political choices.

The most relevant and controversial study in this sense is the one published by a

group of neuroscientists from the University of California, led by **Marco Iacoboni** in 2007[a]. They have used functional Magnetic Resonance Imaging to measure the responses of 20 decided and undecided voters (that they called *swing voters*) to a series of political Leaders candidate in U.S. at that moment. Their results were surprising for their depth and breadth in showing that, while some voters had said that they disapproved or that they were indifferent to a certain candidate, their brain activity revealed they had unacknowledged impulses to like him. The study had apparently "reached into the minds of voters and grasped their hidden emotions and conflicts" (Aguirre, 2008). The illustrative "colored graphics" of the brain activation during this study, published on New York Times (Iacoboni, 2007[b]), reinforced the existence of non-conscious elements in political choice but they also rose criticism on brainscanning techniques.

Critics to neuroimaging

Though it is unquestionable that neuromarketing studies have been giving important contributions to political marketing, it is healthy to maintain a critical profile in the evaluation of these researches.

After more than a decade of increasing publicity for brain-scanning results, the Iacoboni article has provoked a backlash. *Nature* editorial commenting Iacoboni experiment provided a necessary warning about this type of popular research especially because *conclusions are provided on analyses that are not robust*. The first problem of fMRI techniques is actually the small number of subject tested, and the inadequate peer review, that makes results statistically weak.

Secondly, brain-scanning researches could be questionable in the methodology by which neuroimaging data can be transformed into a picture of brain activity to be interpreted. Actually *an increased activity in any brain area is rarely exclusive to any one function and so doesn't have just one interpretation* (e.g. a latent sympathy for Hillary Clinton; Aguirre, 2008). The troubles aroused after Iacoboni's article is that the presence of an amygdala response to a certain picture do not necessarily indicate anxiety regarding his favorite candidate, as positive emotions can activate this region as well. Moreover, even if it was granted that amygdala responses indicate anxiety to a certain candidate, perhaps the subject was simply anxious because his favorite candidate was not doing well in the polls. To be successful, such studies must compare carefully states of mind to isolate a behavior of interest and draw well-

supported inferences regarding the observable activity (Aguirre, 2008).

Beyond simply being *valid*, however, there is a third critical requirement which is often understated in those researches: neuroimaging should be also *useful* to provide insights not available by simply asking a voter his or her opinion(Nature editorial, 2007). "Whether anyone needs a $3 million scanner to conclude that Hillary Clinton needs to work on her support from swing voters" questioned the Nature Editorial, commenting Iacoboni study (2007).

A final other limitation *of* brainscanning is its *unproven validity to pollster.* Neuroimaging does not seem attractive for electoral polling because it is very expensive and time costing, while the chief challenge for pollsters is to obtain a sample of responses that are representative of the population. Furthermore it appears unnecessarily roundabout way to learn voters' truth by measuring increased amygdala and insula responses to pictures of opposing candidates.

These critics however do not suggest that a valid study of political behavior using neuroimaging is not possible. Instead, while there are pitfalls to be avoided, much has been learned regarding the behaviors and emotional states that people develop and deploy in evaluating political candidates.

Neuroimaging find a place in the study of political marketing by revealing how the mind works and has been molded by human nature. Behind this, some limitation of physiological experiments can be overcome using a second valuable methodology of Neuromarketing: *cognitive psychology* which, showing implicit behavioral states of voters, has become an area of increasing interest for political marketers.

COGNITIVE PSYCHOLOGY AND IMPLICIT ASSOCIATION

Nowadays, the closest existing way to investigate political behavior through a direct experiment is based on researches in implicit cognition, especially those handling with the **Implicit Association Test (IAT)**. As we will see in this section, cognitive psychology experiments consented to overcome the majority of the limitations of brain-scanning. The IAT not only gave evidence to be (1) a less biased method and (2) a better predictors of actual voting behavior, but it also (3) lowered costs compared to fRMI and - expanding the representativeness of the sample - it (4) allowed to have more robust results.

The IAT is a procedure for measuring *implicit associations*, meaning that it

quantitatively assesses *feelings and thoughts that exist outside of conscious awareness or control* (Smith & Nosek, 2009). It measures the strength of associations accumulated through everyday experiences, whether or not the person is aware of holding those associations, and whether or not those associations are believed to be valid or true. People can actually possess associations they honestly disagree with, but that still exist in their minds and may strongly influence their behavior.

Smith and Nosek (2009) recently argued that thoughts and feelings people consciously experience are integral to understand human life, however*, much of mental processing occurs outside awareness, thus their understanding is also important for gaining insight into the ways the human mind works.*

The IAT is more than appropriate for this research purpose, offering windows into portions of the mind people are unable to express, either because they do not want to, or because they do not even know they possess them. In this kind of studies, people behavior is not explained only by automatic associations, but those are usually compared to *self-reported* expressed thoughts. The majority of reviews suggest that self-reported feelings are more related to behaviors controlled by the actor (such as what someone says during an interview), whereas the IAT is more predictive of relatively uncontrolled behaviors and appears to be *a better predictor for situations or topics that are socially sensitive such as racial prejudice and stereotypes* (Smith & Nosek, 2009).

In scientific ages, implicit social cognition is a young topic. Consequently implicit *political* cognition has just about passed novelty status in political marketing, and it has concrete opportunity to say something original.

Greenwald, Nosek and Banaji (2003) are the first recognized researchers working on the traditional IAT model (*Table 2*) to assess implicit political attitudes.

Sequence of Trial Blocks in the Standard Election 2000 (Bush vs. Gore) IAT

Block	No. of trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Practice	George Bush images	Al Gore images
2	20	Practice	Pleasant words	Unpleasant words
3	20	Practice	Pleasant words + Bush items	Unpleasant words + Gore items
4	40	Test	Pleasant words + Bush items	Unpleasant words + Gore items
5	20	Practice	Al Gore images	George Bush images
6	20	Practice	Pleasant words + Gore images	Unpleasant words + Bush images
7	40	Test	Pleasant words + Gore images	Unpleasant words + Bush images

TABLE 2: IAT STRUCTURE, *Bush vs Gore, Greenwald et al. (2003)*

As described in the previous table (*Table 2*, p. 26), *the IAT's measure of implicit attitudes is based on latencies for two tasks that differ in instructions for using two response keys to classify four categories of stimuli*.

This seven steps IAT has been used as a point of departure by many researches, but it has also been refined and simplified during the years. In fact, in their study the same authors (Greenwald et al., 2003) have concluded that the traditional IAT could be improved including "practice blocks" (block 1, 2, 3, 5 and 6 in *Table 2*, p. 26) in the Test. Despite their relative high latencies, trials of "practice blocks" gave similar IAT results than those in "test blocks" (Greenwald et al., 2003, p. 202). Consequently the current version of the IAT could be simply composed by two steps: only block 4 and block 7 of the traditional model (*Table 2,* p.26) - those with the function to test implicit association - were retained in the novel IAT structure.

The results of the Election 2000 IAT by Greenwald et al., 2003, reported a **significant correlation between explicit and implicit political attitudes (r=.69).** The Pearson's correlation coefficient (r) is the referring measure of analysis for all implicit cognition researches. A more recent example from Nosek and Hansen, 2008, revealed that people who reported stronger preferences for Kerry compared to Bush also showed stronger pro-Kerry implicit preferences (r =.63, p=.0001). Moreover, in a general investigations of implicit and explicit attitudes toward 98 different topics, political attitudes obtained the strongest zero-order correlations between implicit and explicit measures – e.g., Democrats versus Republicans (*r* = .70), feminism versus traditional values (*r* = .66), John Kerry versus George Bush (*r* = .63) - compared to an average *r* = .38 across all topics (Nosek & Hansen, 2008).

Actually in political IATs, *a positive linear correlation similar to Greenwald's study has been generally evidenced in many recognized analysis, and it could be taken as a point of reference* for future researches. The totality of these experiments did conclude that in politics, *the IAT effect was positively related to explicit attitudes* (Nosek & Hansen, 2008; Nosek, 2005; Nosek et al., 2007).

Finally, also a recent IAT, focused on speech tolerance in liberals, moderates, and conservatives, reinforced the concept that *implicit political identity shows convergent validity with explicit political identity* (Linder & Nosek, 2009).

Anyway this is not the final beat against a meaningful implicit political cognition discipline, because even if the authors sustained that political topics show little

divergence between self-report and implicit reactions, this divergence still exists and should be taken into consideration.

Even if it appears obvious that politics is the one domain in which the majority of people easily and willingly articulate their mental contents, the majority of IAT researchers found in political cognition the perfect way to test the unconscious side of choices. The focus on the unconscious and emotional factors - already evidenced by marketers - might actually give some explanations of implicit influences even on the most - apparently - deliberate human activity (Nosek *et al.*, 2009).

After those results Brian Nosek, one of the maximum expert in this field, continued his studies on the implicit political cognition, sustaining that "adding an assertion that political actions may be influenced by processes of which the actor is not aware or cannot control is now a short step from proclaiming *defunct the assumption of a rational polity*" (Nosek *et al.*, 2009).

In a previous investigation (2005), Nosek *identified four factors that contribute to predict stronger correlation between implicit and explicit measures*: (1) topics with weaker self-presentational demands elicit stronger implicit-explicit relations than topics with stronger self-presentational demands, (2) topics that are more elaborated elicit stronger correspondence than those that are weakly elaborated, (3) *topics with a bipolar structure (two competing alternatives) elicit stronger correspondence than those without a direct contrast*, and (4) topics for which the respondents perceive themselves as being distinct from the cultural norm elicit stronger correspondence than those for which the respondents perceive themselves as being just like the norm.

As it is possible to notice, theories and methods of implicit social cognition are quite innovative for political application, especially outside the U.S. Even so, the early returns of these experiments fascinated also some European researchers in latest years.

Friese and its collaborators (2007) measured implicit political party preferences with Implicit Association Tests during the 2002 German Parliamentary elections. Implicit attitudes toward the five parties (measured three months before the vote) predicted voting behavior above explicit party preference. Undoubtedly, self-reported preferences are predictive of voting behavior and election outcomes, but *implicit preferences appear to provide added predictive value*.

Curiously, major tests on the possibility that implicit measures would offer any additional predictive value, were implemented mainly in Italy.

Roccato and Zogmaister (2010) analyzed the relations between voting intention - explicit and implicit - and final voting behavior. *The implicit attitudes (measured using the IAT) were substantially more effective than the explicit attitudes towards the main Italian political leaders, in forecasting the Election official results of 2008.* Furthermore, in 2001 Italian general election, Arcuri and others researchers (2008) also *demonstrated that implicit candidate preferences measured with the IAT optimally predicted the voting behavior of decided voters.*

But the most obvious challenge in political marketing is to understand behaviors in those voters which are unable to express any clear intention because they have not decided yet (**undecided voters**).

Prediction errors in election outcomes are actually influenced by whether and how undecided citizens will vote (Visser *et al.*, 2000). So, the IAT may be particularly useful with undecided voters because while they may be explicitly unengaged, they may have *implicit preferences. This implicit attitude clearly provide a nudge toward one position over the other when the voter is making a decision, moreover it has proved to bias subsequent information search when undecided voter attempts to resolve the indecision* (Visser *et al.*, 2000).

Arcuri and his collaborators (2008) identified a relationship between implicit candidate attitudes and voting behavior for undecided voters. A month prior to 2005 local election in Northern Italy, undecided voters completed an IAT measuring their implicit attitudes toward the candidates. After the election respondents reported their actual vote and results showed that *previously undecided voters who later chose a candidate had implicit preferences for their candidates a month before* the election despite being unable (or unwilling) to report an explicit favoring for either candidate.

Furthermore others studies revealed that Implicit and explicit attitudes may differentially predict policy preferences. Galdi, Arcuri, and Gawronski (2008) measured implicit and explicit attitudes towards the expansion of a U.S. military base in Italy, and directly asked participants whether they would choose (in the future) to support the policy. *For decided participants, self-reported attitudes predicted future choice better than implicit attitudes. However, undecided participants' implicit attitudes predicted their future policy choice better than their self-reported attitudes.* Additionally, the fact that initial implicit attitudes predicted later preferences for

undecided participants, suggested that some undecided voters had implicitly "decided" prior to them being aware of their decision.

As evidenced in these studies, the main model used to predict the association between explicit and implicit measures and political behaviors is the *additive model*. As theorized by Perugini (2005), in this model *both the explicit and the implicit measures of political preference should contribute to the prediction of voting behavior*. Hence, implicit measures should add incremental validity to explicit ones and vice versa, and more valid electoral forecasts should result when both types of measures are used together. According to the additive model the IAT should add predictive power, anticipating the content of the voting behavior using explicit attitudes.

Despite such evidence on how implicit cognition may affect voter's choices, there are also studies sustaining that **contextual cues** can have a non-conscious effect on voting behavior. As already express by CCT marketers, Berger and his collaborators showed that the kind of place Americans are assigned to vote in (church, school, etc.) has an influence on voting – namely, those voting in a school were more likely to support funding for schools, even controlling for political ideology and other demographic variables (Berger *at al.*, 2008). A follow-up experiment suggested that these contextual effects were due to nonconscious priming from the environment around the voting booth. This suggests that, even among "decideds," *the social and situational context may affect what actually occurs during the voting choice*.

Moreover, Landau *et al.* (2004) used a subliminal exposure paradigm to show that support for George W. Bush increased after nonconsciously priming the concept of death, suggesting a possible implicit mechanism for the ideological shift following political events such as terror attacks. On the same topic, Ferguson *et al.* (2009) suggested that American nationalist ideology can be automatically activated by cues as subtle nationalist words in a scrambled sentence paradigm or the unobtrusive presence of an American flag (Ferguson & Hassin, 2007), activating unconsciously concepts such as power and aggression.

All these recent studies give evidence of an implicit driver in voting behavior which needs to be better investigated.

RESEARCH HYPOTHESIS

The set of researches and theories presented in the literature review well establishes the two opposite convictions about political choices:

- on the one hand, some theorists have sustained the inner rationality behind voters choice, or, more purposely, they have claimed the full deliberateness of political attitudes, which are explicitly articulated;

- on the other hand, many researches have revealed the intrinsic nonconscious origins of political behavior, which is generally confirmed by the existence of implicit political attitudes that may contrast with the deliberate choices.

These theoretical conflicts produce a gap in the plain understanding of voters' behavior. This lack in theory is also evidenced by the absence of an overall model of voting behavior, and undoubtedly enhances our investigation on *conscious and nonconscious elements in this choice, with the aim to frame the functioning of political decision-making* (long version of Research Question in *Table 1*). **This research proposes *to pattern the process of voters' choice* by revealing *the interplay of implicit and explicit political perceptions*.**

The basic hypothesis of this research has been selected referring to the existing literature (HP1), and it has drawn the lines for two further assumptions (HP2; HP3). Furthermore in past researches the analysis through correlation has emerged to be the main instruments for the investigation of relationship between implicit/explicit attitudes. Accordingly to Greenwald's and Nosek's studies, a *0.69 Pearson's coefficient (r)* has been taken as a point of reference for correlation between political attitudes.

Considering that, from political marketing to neuroscience, the majority of available literature has suggested the presence of nonconscious/implicit elements in political decisions making, the **HP1** of my thesis follows this persuasive path: *there is a definite implicitness in voter's choice that, combined with the deliberate political perception, affects and complements the functioning of political behaviors.* A measure of implicit/unconscious political attitudes grows outside awareness in our brains. It can be assessed independently from the explicit attitudes and it evidenced

to be autonomous because it may differ from the conscious political preferences. *Therefore, implicit and explicit preferences are not perfectly matched and the correlation of explicit and implicit political attitudes is going to be limited (r<.69).*

This main hypothesis (1) contrasts with the famous theories of rational voting behavior model - which sustain that political choice is rationally made-up in our brain - and (2) it is opposed to the past IAT researches which consider voter decision-making one of the most deliberate human behavior.

However, the analysis of voting behavior takes into consideration the possibility of voting or abstaining from the vote, and, correspondingly, a subject may decide not to answer to explicit political questionnaires or, more often, he could be politically undecided. The focus of our second hypothesis is actually on those voters which have neutral political attitudes because they are *undecided* - the critical group of "swing voters", as mentioned in literature - or simply because they are *reticent* to answer. So a second hypothesis **(HP2)** has been developed for this target and it asserts that, *where explicit voting intentions are not available* (explicit attitudes=0), *clear implicit political preferences exist, may emerge, and can be measured evidencing political attitudes which are closer to center-right or center-left* (implicit attitudes≠0).

More generally, this hypothesis assumes that for the majority of people the brain has already developed an implicit political preference, even if subjects are still consciously unaware. Consequently, among undecided voters, implicit attitudes could foresee the likely voter's choice when political attitudes are expressed.

Moreover, the structure of rational preference (as elaborated in the economic model of voting choice), maintains that, when voters prefer A to B, and B to C, they also prefer A to C. This kind of statement can be tested throughout a candidate/logo preferences consistency, in self-reports response and in the IAT response.

According to our main hypothesis on not fully rational voting choices, **HP3** reverses the previous postulate**.** Assuming that *political choices are not shaped with a rational structure in our minds, voters preferring Leader of party A compared to the Leader of Party B do not necessarily prefer Party A to Party B. Consequently, implicit party/leader correlation is going to be much lower than the same one at the explicit level*.

The significant difference between implicit attitudes on Leader and implicit attitudes on his respective Party, evidences the existence of unconscious/emotional components in political behavior.

TABLE 3: RESEARCH HYPOTHESIS
HP1: Political decision-making is not a fully rational choice, but it is also controlled by automatic / nonconscious behaviors;   *voters show discrepancy between explicit and implicit preferences during the political choice, therefore the correlation of explicit/implicit political attitudes is limited (r<.69),* evidencing that political-decision making contains strong implicit elements.   ***r (explicit; implicit) < 0 .69***
HP2: Political decision-making sometimes occurs outside the voter's full awareness;   *the availability of clear implicit political preferences among undecided and reticent voters are reckonable*, signaling that implicit attitudes anticipate the possible voter choice where explicit attitudes of voting intentions are not available.   ***when explicit attitude = 0, implicit attitude ≠ 0***
HP3: the process of voter's decision-making is not structured following the rational assumptions,   *Implicit attitudes outline a different political engagement between leaders and their respective parties; this divergence is implicitly much stronger than explicitly,* supporting the existence of unconscious/emotional elements in political behavior.   ***explicit party/leader r > implicit party/leader r***   ***implicit leader preferences ≠ implicit party preferences***

METHODOLOGY

From the two neuromarketing methods presented in literature, the characteristics of the **Implicit Association Test (IAT)** emerged to be the most appropriate for this research. The main reason for the selection of the IAT as a method for this research was its reliability in measuring political perceptions, even form behaviors that were explicitly inaccessible to observation. *Implicit political attitudes are actually inferred on the basis of the speed and accuracy of performance during the test*.

The IATs together with self-reports, have been the tools used in this study to test the hypotheses (HPs) and to answer our research question (RQ) on voter's decision-making. Through this empirical methodology, respondents acted as voters during the political choice process, but their political preferences may emerge even if driven by unconscious or non-intentional perceptions (HPs).

Scale measures of quantitative data have been gathered for implicit and explicit responses and three levels of analysis have been evidenced (political overall preferences, party preferences & leader preferences, and preferences on each single leader). Subsequently, a quantitative analysis has been developed through two mayor statistical instruments: correlations and t-tests.

The IAT, jointly with self-reports, offers incredible opportunities to shad some new light on the interplay of implicit and explicit processes in voter's decision-making (RQ)*.

RESPONDENTS AND DISTRIBUTION

Subjects tested were 68 adults, men and women from 18 to 68 years old (median age 34, average age 38). All the subjects tested were Italian potential voters as the experiment explicitly aimed to investigate the structure of voter's behavior in the Italian context. Recruitment occurred via personal contact, and data have been collected for one month, from December 6, 2010 to the January 6, 2011. During this period, 68 IAT have been obtained (67 were valid, 1 had no registered scores) together with 68 accurate self-reports connected to each test. 24 subjects rejected to make the test after the instructions; the main reasons of rejecting where no time or no understanding of the rules.

52,2% of the final participants to the IAT were male and 47,8% were female; 88,1% were right handed and 11,9 % were left handed.

Respondents provided data from a specific laptop programmed for the experiment. In particular, implicit voting intentions were collected through a computer based test conduct with the use of professional software (*E-prime2*), which allows to present stimuli and to measure response latencies (Response Times – RT).

Contextual self-reports were submitted on paper to each respondent. The choice to drive the test through an **"itinerant" laptop** – and not inside university laboratories - even if it was harder in its operative beginning (need for new license system and specific technical support), it allowed to tremendously increase the representativeness of the sample. Different social context, ages and sexes of respondents have been chosen to avoid any limitation of non-probabilistic samples. This significance of the sample would have been unfeasible inside university laboratories.

It may be argued that a wide sample of participants could be easily contacted through the Web, but empirical evidence attested that distributions of variables collected through Web researches are systematically distorted (Schonlau *et al.*, 2004). To avoid limitations of Web administered IATs - such us multiple participations respondents, procedural difficulties, and inaccuracy - **face-to-face administered IATs** have been preferred. A very precise training and the accurateness of responses have been assured in this way.

Completing the IAT and the related questionnaire required around 15 minutes, but 30-35 minutes is the average time dedicated to each respondent if we include the necessary instructions and a short debriefing about Implicit Cognition.

A number of 67 valid responses is considered a large sample in Neuromarketing, especially when the focus is on the functioning behind political choice, and not the choice in itself. Moreover, this sample absolutely guarantee the **statistical significance** of the analysis and the robustness of conclusions (power value exceeding to detect effect of correlation with N=67; two-tailed test at p=.000).

The anonymity of IATs and self-reports was assured and especially protected because of the sensibility of political data.

DESIGN OF THE IAT

Concretely, the IAT is a computer administered test, in which respondents perform a series of **categorization trials**. In each trial, a stimulus appears in the center of the screen and must be categorized, pressing a key on the keyboard, combining it to its category.

Our categories are form two groups, *political images* and *positive/negative words*:

- the categories of political images are c*enter-LEFT* and *center-RIGHT*, their stimulus are represented by pictures of parties and leaders which should be classified in one of the two categories.

- the categories of the second group are *POSITIVE words* and *NEGATIVE words*, their stimulus are represented by selected terms which should be classified for their *positive* versus *negative* valence as the examples reported in *Table 4*.

TABLE 4: WORDS STIMULI	
Positive words (Z-key or M-key)	**Negative words (Z-key or M-key)**
Good, safety, peace, reliability, honesty, fairness equality, coherence, …	Bad, danger, unfairness, discrimination, prejudice, incoherence, abuse, …

Considering a multitude of recognized IAT experiments, the number of 48 words (24 positive, 24 negative) have been chosen for this second group of stimuli. Their classification through a key button change during the experiment (e.g.: positive words are firstly classified through Z on the keyboard and then through the M key in a second task of the experiment).

On the other hand, 6 leaders pictures and 6 party logos have been chosen through specific requisites *(Appendix 1: Stimuli - Leaders Pictures)*, and their classification in the *Center-Left* and *Center-Right* categories has been decided after a pre-study based on five interviews with local political executives of the corresponding main Italian parties (October 2010).

The interviews evolved trough informal discussions of about 10-15 minutes, and its aim was to avoid any eventual problem of classification by the IAT respondents. It was evidenced the necessity to add the word "center" to the LEFT / RIGHT to better represent the actual political landscape and the moderating tendency of last decades. After many considerations on the current political situation, all of the interviewed agreed on the following classification (*Table 5,* p. 38) which was actually

strengthen by current evolutions in the Italian political landscape.

The output of this classification, that it must be used equally during both the two tasks of the IAT, is expressed in the following table.

TABLE 5: POLITICAL STIMULI	
Center-LEFT (Z key)	Center-RIGHT (M key)
Pierluigi Bersani	Silvio Berlusconi
Nichi Vendola	Umberto Bossi
Antonio di Pietro	Gianfranco Fini
Logo Partito Democratico - PD	Logo Popolo Della Libertà - PDL
Logo Sinistra Ecologia e Libertà - SEL	Logo Lega Nord - LN
Logo Italia Dei Valori - IDV	Logo Futuro e Libertà per l'Italia - FLI

Center-Left is classified through the Z key in task 1 and in task 2, at the same way, M is the key for Center-Right parties and Leaders for the whole experiment.

Pictures choice of stimuli representing Leaders is reported in *Appendix 1*, while Political Stimuli representing Parties are expressed below in *Table 6*.

TABLE 6: POLITICAL STIMULI - PARTIES		
PD - Partito Democratico	SEL - Sinistra Ecologia e Libertà	IDV - Italia Dei Valori
PDL - Popolo Della Libertà	LN - Lega Nord	FLI - Futuro e Libertà

FUNCTIONING OF THE IAT

After the instructions, where it is carefully explained which letter corresponds to each category label, and how stimulus must be classified, respondents perform fours trials for practice; then the test begins showing previous stimuli. On each trial, an exemplar of one of the four categories appears in center screen and participants are asked to classify those elements. Category labels remains in view on the bottom of the page reminding the key to press in the two cases.

In combined task blocks of the IAT, subjects switch between classifying - on the keyboard - exemplars of one contrast (e.g. center-Left = Z vs. Center-Right = M) and exemplars of the other contrast (e.g. positive word = Z vs. negative word = M), on consecutive trials. Each respondent performed 100 classification (4 classification practice + 96 classification test), divided in two equal tasks, with a possibility to make a pause in the middle *(Table 7)*. The political images are classified in the same way during the whole test (c-Left = Z vs. c-Right = M), while words classification change during the two tasks: positive must be associated with Z in the first task and with M in the second *(Table 7, version A)*.

TABLE 7: IAT STRUCTURE				
Version	Task	Trials	Z key	M key
A	1	48	center-left + *POSITIVE*	center-right + *NEGATIVE*
	pause			
	2	48	center-left + *NEGATIVE*	center-right + *POSITIVE*
B	1	48	center-left + *NEGATIVE*	center-right + *POSITIVE*
	pause			
	2	48	center-left + *POSITIVE*	center-right + *NEGATIVE*

As suggested by Greenwald *et al.* (1998), we built two versions of the IAT. In the 1st task of version A, the *center-left* stimulus are associated to positive words (they are both classified with Z) and the *center-right* stimulus are associated to negative ones; in the 2nd task of version A we associated the *center-right* objects to positive words and the center-left stimulus to negative words. On the contrary, in version 2, during the 1st task we associated the *center-right* parties or leaders to positive words (both classified by M) and the *center-left* objects to negative words (Z on the keyboard), while only in the 2nd task the *center-left area* objects were associated to positive words and the *center-right area* parties or leaders to negative words. The two

versions of the test differ for the order of presentation of the two critical blocks, and were programmed because IAT measures tend to indicate that associations have greater strength when they are tested in the first combined task than in the second combined task. To minimize this procedural effect, half of the population used version A, while the other half used version B of the IAT.

We used the speed of performances in these tasks (difference of Response Times in task 1 and in task 2) to infer our participants' implicit political attitude.

EXPLAINATION OF IMPLICIT OUTPUT DATA

The IAT effect – the measure of implicit perceptions – is actually based on latencies for two tasks that differ in instructions for using two response keys to classify four categories of stimuli. The measure of implicit associations is obtained computing from performance speeds at a classification tasks where association strengths influence performance (Greenwald *et al.*, 2003).

Generally speaking, positive/negative words have the role of simpler "distractors": as they have to be classified with the same keys of one political side (e.g. task 1: Z=positive, Z=center left; task 2: M=positive; M=C-right,), they affect Response Times during the classification of political pictures. Depending on political preferences, classification is faster when the preferred candidate or party is associated and classified through the same key of positive words. Difference of Response Times in task 1 and in task 2 allow to measure leaders and parties association with positive / negative meaning. If the difference in associating positive to a certain party is higher than to another, a preference for this subject it is evidenced.

Taking as example version A (*Table 7. p. 39*), if center-left is more strongly associated with positive valence than center-right, classification should be faster in task 1 (Z = positive + c-left; M = negative+ c-right) than in task 2. Consequently RTs of task 1 are lower than RTs of task 2 (in milliseconds) and an implicit preference for the center left area appears. On the contrary, for those that implicitly prefer the center right, the block of trials which associates center-right parties or leaders with positive words are faster (M= positive + c-right; Z= negative + c-left), compared to the block in which the same positive words are associated to the opposed leaders and parties.

This is the core of our research, because for every respondent the IAT shows the

respective Response Time which allow to measure the score of participants implicit attitudes.

MEASURE OF IMPLICIT PREFERENCES

After the data collection, the program returned respondent's Response Times in milliseconds; those data have been arranged before the analysis to obtain the measures of implicit preferences.

A first *trimming of the data* has been especially necessary to eliminate wrong responses before the analysis; if the initial classification to a stimulus was in error (e.g. Bossi = Z), it was erased from the data (no penalty scores). Moreover, double responses have been corrected. In the case respondents answered pressing more than one key (e.g. zm, mz, mx), the procedure has been the following: (1) if the first response was correct, additional wrong letters were cleaned and the results have been included in the analysis, (2) if the first response taped was wrong, it was eliminated from the analysis. Finally, the last 5% percentile with the slower Response Times was individuated (from 2126 ms to 2999 ms) to limit the speed trade-off (Greenwald *et al.,* 2003). Anyway, it has been decided to include these data in the analysis, because higher latencies have even proved to be meaningful for the research (notice that the test had been already programmed to have all responses faster than 3000 ms).

At this point, it was possible to work on Response Times to make each subject's implicit political preferences emerge from the IAT. This analysis has been computed at individual level, to have the possibility to compare it with each subject's respective explicit attitude (expressed in self-report).

Collected data have been analyzed using the **scoring procedure** refined by Greenwald *et al.* (2003), where the *arithmetic mean latency (Response Time) of positive association for each of the two tasks was calculated*. More especially, a differential *implicit score* based on speed in the two critical tasks was computed for each respondent (Greenwald, Nosek, & Banaji, 2003). This index was computed as the difference between *Average RT of Center-Right + positive* (in 2st task) and *Average RT of Center-Left + positive* (in 1st task).

The difference between Response Times in associating each political side to positive gave us 67 **implicit OVERALL political perceptions** (one for each respondent). If

the Implicit score was lower than 0, the subject had a center-right attitude, if Implicit score was higher than 0, the subject had a center-left attitude (data for the first level of the analysis).

Taking as example summary scores of *Subject 1* (in red in *Table 8*):

- *The Average RT of Center-Right* in association to positive is 1428,42 milliseconds, given by the average RT performed in classifying each Center-Right Leader and each Center-Right Party during the 2nd task.

- The *Average RT of center-Left* in association to positive is 1166,87 milliseconds, given by the average RT performed in classifying each Center-Left Leader and each Center-Left Party during the 1st task.

In the example in *Table 8* the difference between them is positive (261,55 milliseconds), meaning that the subject was faster in associating positive with Center-Left. Subject 1's *Overall political perception* shows an implicit attitude closer to Center-Left (*Average RT of C-Right* in task 2 - *Average RT of C-Left* in task 1 >0).

TABLE 8: IMPLICIT SUMMARY SCORES SUBJECT 1				
RT in milliseconds				
1st TASK (C-Left + positive)		**2nd TASK (C-Right + positive)**		Δ
Bersani	912,5	Berlusconi	1325		
Vendola	771	Bossi	864,5		
di Pietro	1455,5	Fini	975		
Center-left leaders	**1046,33**	**Center-right leaders**	**1054,83**	**Leaders attitude**	**8,5**
PD	1769	PDL	1527		
SEL	926,5	LN	1795		
IDV	1407,5	FLI	2084		
Center-left parties	**1287,4**	**Center-right parties**	**1802**	**Party attitude**	**514,6**
Center-left overall	**1166,87**	**Center-right overall**	**1428,42**	**Political attitude**	**261,55**

It must be noticed that, formerly, the same measure of implicit political cognition was computed between Parties and between Leaders, in two separate measures for each subject tested (data for the second level of the analysis).

The experiment was actually set to have RTs for each leader and party for both tasks, so it has been possible to consider RT for each stimulus during its classification with the same hand used to classify positive meaning. Consequently an *average RT for*

each political stimulus in association with positive has been computed (data for the third level of the analysis). Some examples from Subject 1 *of the average RTs for each political stimulus* are: Bersani 912,5 milliseconds, Berlusconi 1325 milliseconds, PD 1769 milliseconds, etc… (*Table 8*, p.42).

Similarly to the procedure followed for *the Overall Implicit Attitudes*, the computation of the difference between the averages RT of Center-Right and Center- Left Leaders in association with positive gave us the individual **Implicit LEADERS political perceptions** (e.g. from Subject 1, *Table 8*: 8,5 milliseconds). Subsequently the same procedure has been followed with parties RTs to obtain the **Implicit PARTIES political perceptions for each respondent** (e.g. from Subject 1, *Table 8*: 514,6 milliseconds).

All implicit measures of each of the 68 respondent's political perceptions have been calculated in this way. Then the relevant implicit scores of political perceptions have been resumed in one database which was the basis of our SPSS analysis (*Appendix 3* reports the summary of Implicit scores in the last three columns).

SELF-REPORT FOR EXPLICIT ATTITUDES

Together with the IAT, subjects completed a parallel self-report which allows to measure the strength of the corresponding explicit associations. Nonetheless researches showed that the order of presentation of the explicit and the implicit tasks exerts minimal or even null influences on the IAT scores (Hofmann *et al.*, 2005; Nosek *et al.,* 2005), we followed the "reasonable procedural guideline to counterbalance the order of IAT and self-report, in the absence of reasons for just using a single order" as concluded by Nosek, Greenwald, and Banaji (p. 273; 2007).

Political self-identification is reported with three simple multiple choice questions with quantitative assessment (*Appendix 2*): the first one, more general, asked the overall political attitude (Q1), the second one asked to give a judgment to each of the leaders (Q2), the third one asked to give a judgment to each of the parties (Q3).

In all questions, participants who declared *"I don't know"* have been considered *undecided*, while the participants who answered "*I prefer not to answer this question*" have been named *reticent*. Both of them were coded with 0 explicit attitudes.

Among the participants who expressed their voting intention, we coded -1 or -2 the

answers in favor of the C-Right area, 0 from the center, and +1 +2 those in favor of the C-Left area (see *Appendix 2).*

Taking as example the coded self- report of Subject 1 (*Table 9*):

- Q1 - assessing the perceived *general* political preference - has been coded with 2 points as the subject perceived himself as strongly from Center-Left.
- Q2 codification allowed to quantitatively measure the **Explicit political preferences over LEADERS** subtracting *Center-Right average score for Leaders* to *Center-Left average score for leaders* (2,33 points = center-left preference).
- The same procedure has been used also to assess the **Explicit political preferences over PARTIES** in Q3 (2,66 points = center-left preference).

TABLE 9: EXPLICIT SCORES SUBJECT 1 (points)					
Q1	**General political preference**				**2**
	Bersani 5		Berlusconi 1		
	Vendola 4		Bossi 1		
	di Pietro 3		Fini 3		
Q2	**Center-left leaders**	**4**	**Center-right leaders**	**1,67**	**Leaders attitude**	**2,33**
	PD 5		PDL 1		
	SEL 4		LN 1		
	IDV 3		FLI 2		
Q3	**Center-left parties**	**4**	**Center-right parties**	**1,33**	**Party attitude**	**2,66**
				Explicit Overall Political Attitude	**2,33**

The *average* of (Q1) the subject's general explicit political preference, (Q2) the subject's explicit preference toward leaders and (Q3) the subject's explicit preference toward parties, gave each Individual **Explicit OVERALL political attitude** for the analysis.

As before, if the resulting overall score was less than 0 it represented a Center-Right attitude, if it was higher than 0 the subject expressed a Center-Left attitude, if it is 0 the responded was undecided or he didn' want to answer (e.g. Subject 1 in *Table 9* explicit political preference is 2,33 < 0 = Center-Left attitude).

Appendix 3 reports the summary of explicit scores in the first three columns.

ANALYSIS AND RESULTS

Explicit political preferences of each respondents have been gathered through the surveys and *implicit* political preferences have been measured associating major candidates and parties in Italy with positive and negative words in the IAT.

Raw implicit and explicit data have been elaborated though current methodologies to obtain valid measures of implicit and explicit political attitudes (*Appendix 3*). On this quantitative data, our hypotheses verification commenced properly, with the use of the most functional statistics.

HYPOTHESIS 1

To observe the *interplay between implicit and explicit voters' attitudes* and test **HP1**, the final political scores from self-reports have been correlated with the final IATs scores from political attitude. The correlation of self-reports with the IAT for overall political preferences (leaders + parties) is:

r =.46 with a p value < .001 (p= .000; N67).

The correlation between explicit and implicit attitudes is weaker than the threshold political correlation of Greenwald's IATs (r =.46 < $\bar{r}$ =.69), *evidencing that, even if there is a positive relationship, implicit political preference is not fully explained by explicit attitudes*. IATs shows that many of the implicit political preferences (association of leaders and parties with positive meaning) differ from the aware political preferences.

As given by the subsequent graph (fig. 2), discrepancies between IATs and self reports are numerous and evidenced by many outliers. Vertical axes gives political preferences collected by self report, while horizontal axes gives IAT overall implicit attitudes computed as the delta of center-left and center-right RTs (in milliseconds). For both measures, scores minor than 0 show center-right preferences, 0 score means no preference, and scores higher than 0 show center-left preferences.

Figure 2

HP1

Implicit / Explicit correlation

R^2 Linear = 0,214
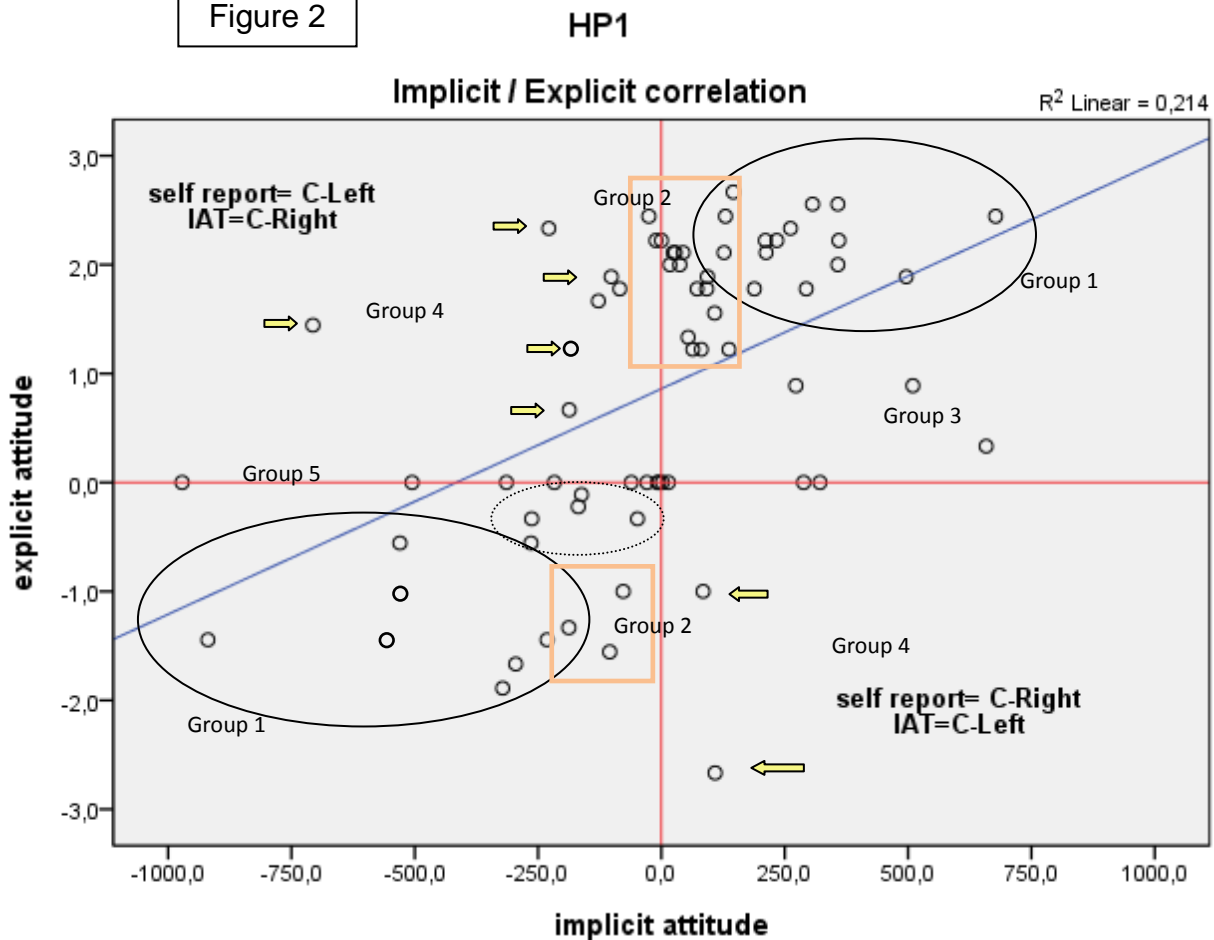
From both political sides there is a consistent group of respondents (group1) who perceive themselves as decisively convinced about their politically opinions and whose implicit attitude confirm their expressed political preference (black circles in fig.2). Those subjects create the positive linear correlation, reinforced by the other similar group of center-right explicitly and implicitly moderates (dotted circle in fig. 2). On the contrary *many explicit political attitudes which are not correlated with implicit ones* are also identifiable. There is a great number of respondents (group 2) which exhibit fair convinced implicit association but expressed their clear political engagement from center-left, and similarly there is a small group whose implicit attitude is weakly from the center-right but explicitly they perceived themselves as strongly form center-right (orange squares in fig. 1). Many of them implicitly acted as absolutely undecided voters (they are actually illustrated adjacent to the red vertical line in fig.1), nonetheless they expresses clear explicit preferences. On the opposite side, between those respondents expressing slight political tendency during the questionnaire (from -1 to +1), there are also three outliers form the center-left group

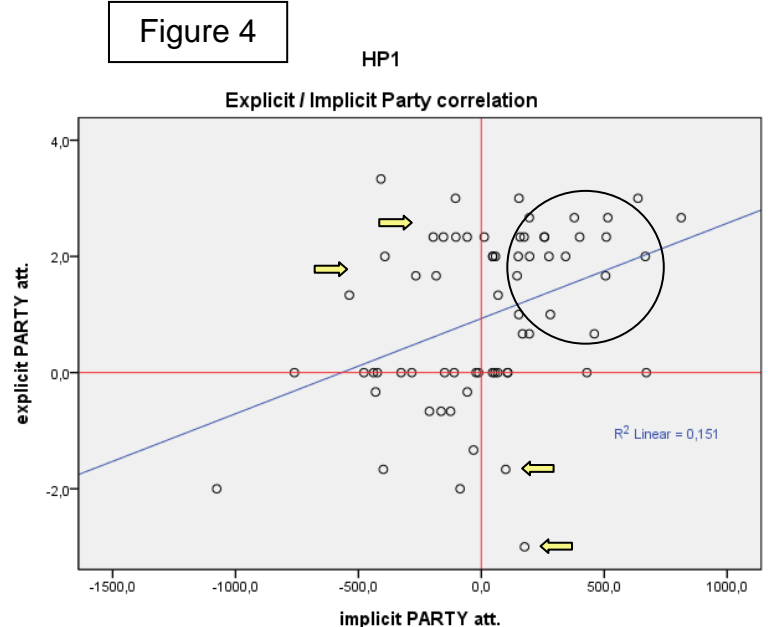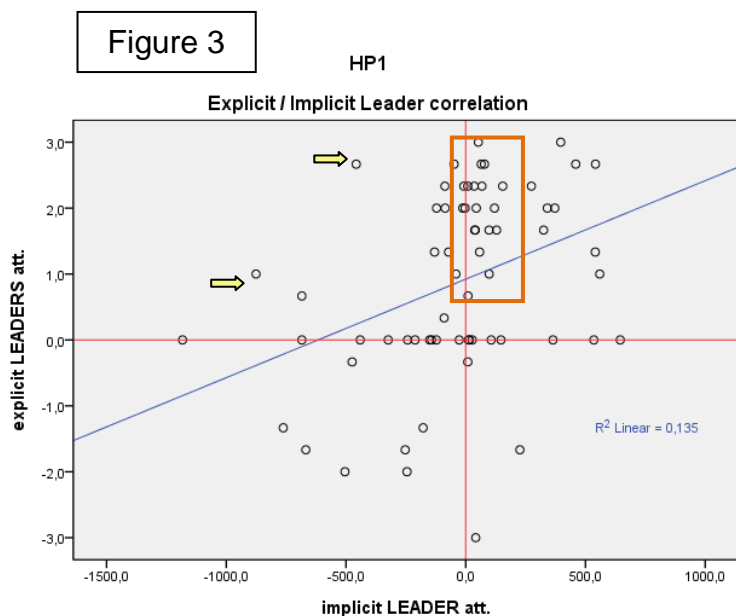who strengthen the overall center left preference at implicit level (group 3).

Finally the most impressive data are those where implicit/explicit responses totally differ (group 4, signaled by yellow arrows in fig. 1) and implicit responses of undecided voters (group 5, on the red horizontal line in fig. 1). Undecided are going to be analyzed broadly in HP2, while respondents of group 4 are those which best exemplify the validation of our first hypothesis because, more than others, they evidence *the existence of unconscious elements in voters choices*. They actually have given a political explicit preference to one political side (e.g. center-left), but at the implicit level, they have associated the opposite political side (e.g. center-right) to positive.

These first results are boosted proceeding with the analysis through subsamples.

"Leader" attitudes and "Party" attitudes are the main subsamples of this research and their implicit and explicit scores have been analyzed separately.

A *Pearson's correlation coefficient* was computed to assess the relationship between implicit and explicit political attitudes on Leaders first. Then implicit and explicit scores on Parties attitudes have also been correlated. These analyses show that at this second level discrepancies between explicit and implicit attitudes are even stronger.

An **implicit/explicit Leader r =.37, with p value < .001 (p=.002; N67), confirms** low implicit political correlation with their respective aware leader preferences**.** This unaware distance is vaguely lower in **implicit/explicit Party** correlation**, r =.39 p value <.001 (p=.001; N67)** but, in the main, it is weak for both subsamples (r < 0.69).

Figure 3

HP1

Explicit / Implicit Leader correlation

R^2 Linear = 0,135

Figure 4

HP1

Explicit / Implicit Party correlation

R^2 Linear = 0,151

Scatterplots (fig. 3 and fig. 4) endorse the previous results, outlining that *the positive linear relationship between explicit and implicit Leader and Party preferences is not strong.* Moreover in "leader" attitudes (fig.3) a discrete amounts of subject of group 2 (weak implicit preferences, make firmer explicitly) could be evidenced. Even if implicit tendency seems confused, explicit preferences are well polarized, suggesting that *political preferences are reinforced at the explicit level in those subjects.* A stronger correlation is evidenced in figure 4 (implicit explicit correlation for Parties), but it is also visible a discrete amounts of subjects from group 4 (opposed implicit-explicit preferences), confirming that *implicit processes exist inside the political choices* and suggesting some implications for the decision-making process, even at the party and leader level.

Last subsamples from HP1 repeat implicit/explicit correlation at the level of each stimulus. From the two political sides (center-left, center-right), each Leader Response Time from the Implicit Association Test has been correlated to his related explicit score (*Table 10*).

TABLE 10: IMPLICIT/EXPLICIT CORRELATION		
di Pietro	**r = - .23**	p = .068 (N66)
Bersani	**r = - .20**	p = .077 (N66)
Vendola	**r = - .29**	p = .015 (N67)
Fini	**r = - .24**	p = .055 (N67)
Berlusconi	**r = - .11**	p = .037 (N67)
Bossi	**r = - .21**	p = .084 (N67)

Although *a negative linear correlation it is marked for everybody* (higher the response times, lower the explicit preference), correlation of what people explicitly and explicitly perceive it is generally extremely low (r < .69). It should be noticed that low significances give low statistical power to this analysis but, even considering only significant analysis (p < .05 = Vendola and Berlusconi), the result is clear: *what people say and what people implicitly think about those leaders are two very different things.*

The following graphs plot Response Times for the higher and the lower significant correlations gathered; axes gives explicit attitudes on the Y and implicit Response

Times on the X (in milliseconds). The black vertical line gives the *average RT* for these stimuli, while the horizontal red line separate those responses which expressively have positive preferences (on the upper side) for those which expressed low points of preference to those leader (on the lower side).

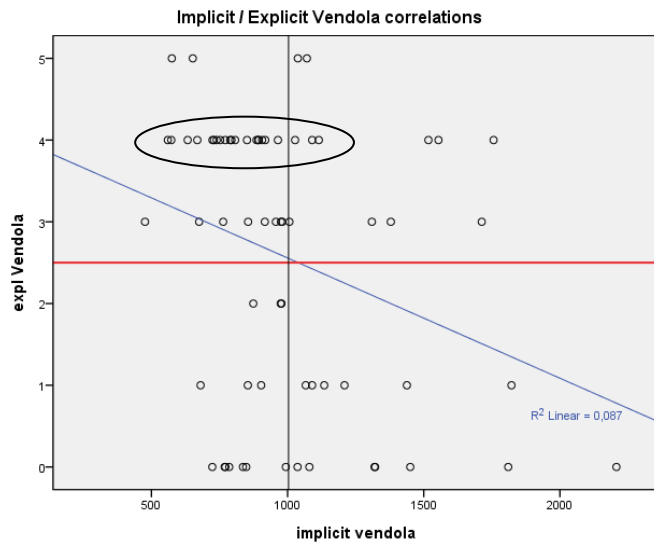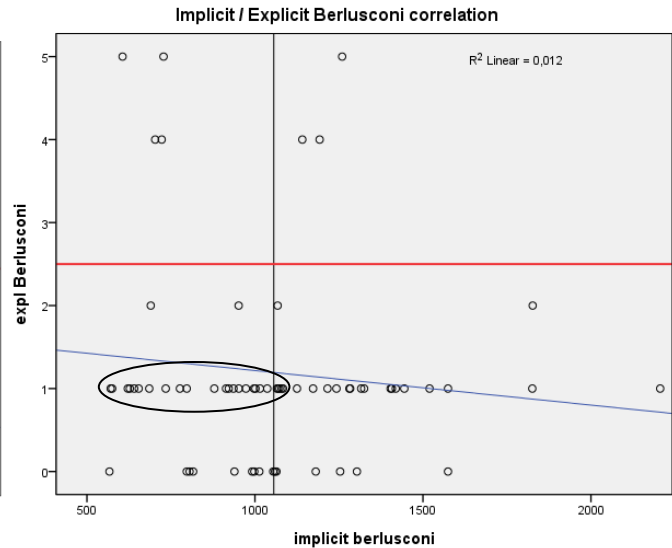Figure 5 — HP1 — Implicit / Explicit Vendola correlations

Figure 6 — HP1 — Implicit / Explicit Berlusconi correlation

The negative slope of the linear regression indicates that when response times increases, explicit preference decreases, so even if there is a certain relation between those variables, *there is surely a prominent part of the choice that is expressed only at implicit level and which maybe needs to be taken into account for further discussion.*

Vendola implicit attitude (fig.5) seems to follow a certain coherence with explicit preferences, showing that those who expressed high explicit preference were actually faster in associating his image with positive (circle in the upper side of the graph, fig. 5), while lower is the explicit attitude, higher is the implicit RTs.

On the contrary, Berlusconi's implicit preferences were impressively high (circle with the slower RTs in fig. 5), in spite of the fact that explicit scores were generally very low. It is evident that a great part of respondents brains associate unawarely his image with positive concepts, despite *they do not have the same explicit opinion*.

These third level results support what was expressed by previous weak correlations, and *emphasize the hypothesis of measurable different implicit political preferences in voters' decision-making (HP1).*

HYPOTHESIS 2

All previous graphs also gave an idea about the availability of implicit attitudes in those subjects who do not express any explicit preferences (explicit score = 0, on red horizontal line in fig. 1, fig. 2, and fig. 3). Those respondents are *undecided* and *reticent* voters, whose behavior is not observable simply through HP1 correlations.

To test **HP2** request of better understanding of those subject's behaviors, some further analysis had to be made. A segment of 20 respondents whose self-report average political preference was around 0 (mean = 0,05) has been selected. Their explicit attitude is reported in the following bar chart (fig.7).

Figure 7

HP2

Undecided Voters: Implicit attitudes
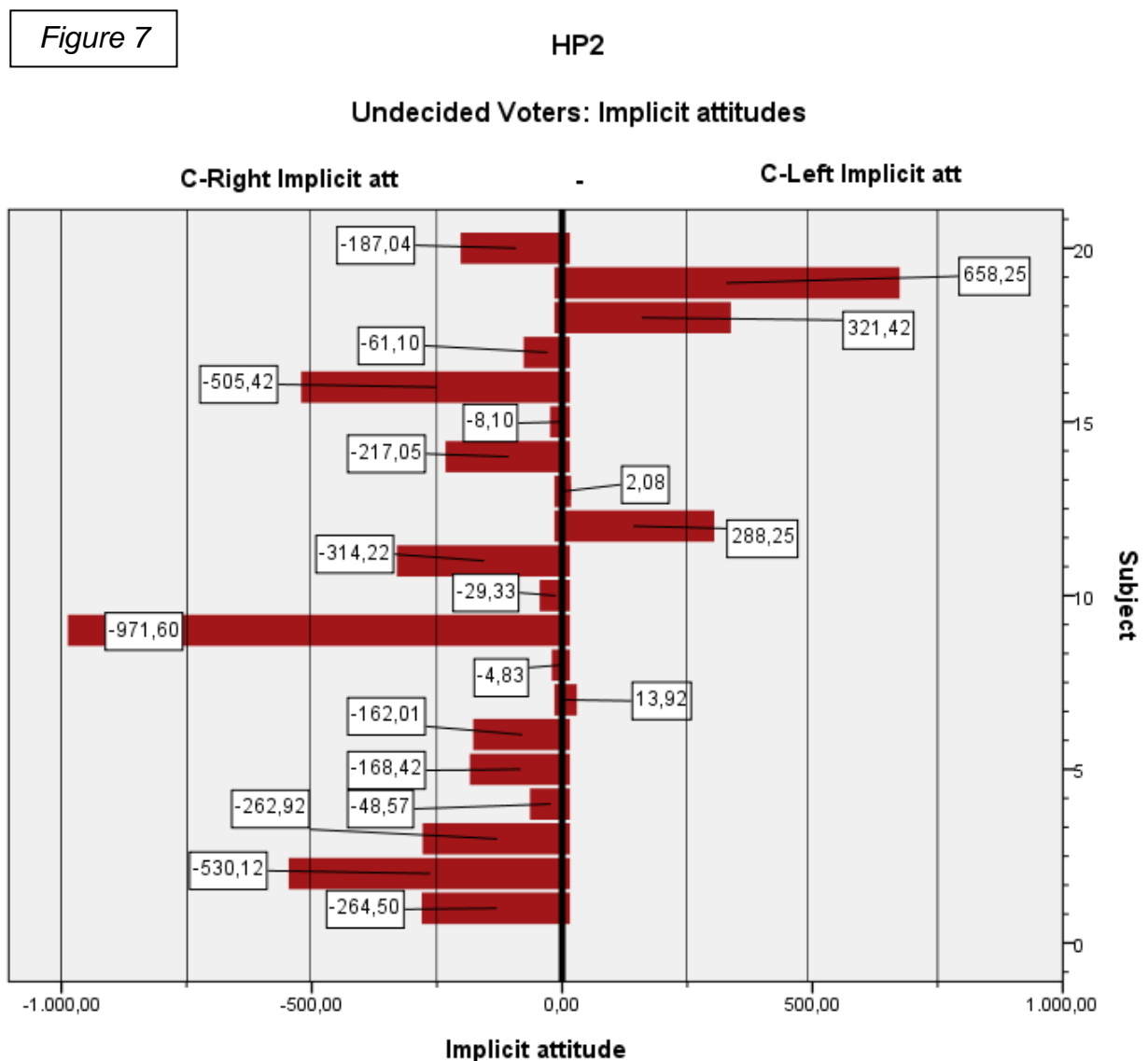
As it is possible to deduce from the IAT scores of those subjects (labels of fig.7), *the majority of the implicit attitudes of undecided and reticent voters differ from 0 (their explicit attitude).*

To prove statistically this difference a *one sample t test* was implemented.

The differences between implicit political preferences and 0 (explicit attitude) for undecided and reticent voters were statistically significant, **t (19) = 4.42, p < .01** (two tailed), α = .05, indicating that it was more than what would have been expected due to chance. This analysis shows that, *although these subjects do not have explicit preference, they do have implicit attitudes*; so it definitely verifies HP2.

A statistically reliable difference between explicit and implicit attitudes has been successfully revealed also in subsamples. The difference between 0 (the explicit attitude) and the mean scores of implicit attitudes was significant at the **Leader level**, **t (18) = 4.17, p< .001** (two tailed), α = .05, and at the **Party level, t (18) = 5.08 p< .01** (two tailed), α = .05. *When explicit attitude is 0, implicit attitude is different from 0 evidencing the emergence of clear political preference among undecided and reticent voters.*

At the level of each Leader stimulus, Implicit Response Times have also been segmented, eliminating those whose respective explicit preference to the candidate were already expressed, and testing only those respondents who did not declared any opinion about the leader (explicit attitude = 0).

TABLE 11: LEADER'S ONE SAMPLE TEST	
Difference between Implicit RTs and 0 (explicit score)	
di Pietro	**t (13) = 14,40 p< .01** (two tailed) α = .05
Bersani	**t (13) = 10,80 p< .01** (two tailed) α = .05
Vendola	**t (14) = 10,36 p< .01** (two tailed) α = .05
Fini	**t (14) = 11,70 p< .01** (two tailed) α = .05
Berlusconi	**t (15) = 15,92 p< .01** (two tailed) α = .05
Bossi	**t (15) = 19,28 p< .01** (two tailed) α = .05

The average implicit responses times were significantly different from explicit attitude for each Leader.

Firstly the IAT demonstrate the existence of clear implicit political attitudes even on those subjects which have unclear political explicit attitudes (mainly undecided, but also reticent to answer to the test). Secondly, results showed that implicit and explicit measures are essentially different and that this difference is relevant at all the three

levels of analysis (HP2 verified).

HYPOTHESIS 3

The analysis of the relationship structure between party and leader preferences is necessary for a deep investigation of political decision-making.

Especially, **HP3** tests if voters preferring Leader of party A compared to the Leader of Party B also prefer Party A to Party B.

Figure 8

HP3
Explicit Leader/Party correlation

The **explicit party/leader** preferences are strongly correlated (**r = .91, p = .000, N68**). This correlation gives a *well-built positive linear relationship at the explicit level*, with few outliers (fig. 8). The general consistency within self-reports shows that the test was made accurately, but above all this explicit coefficient has been computed to be compared with the implicit one, in the following analysis.
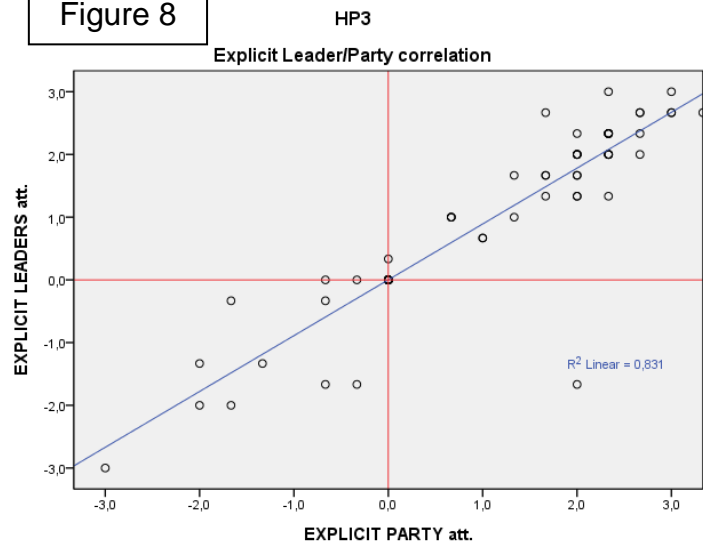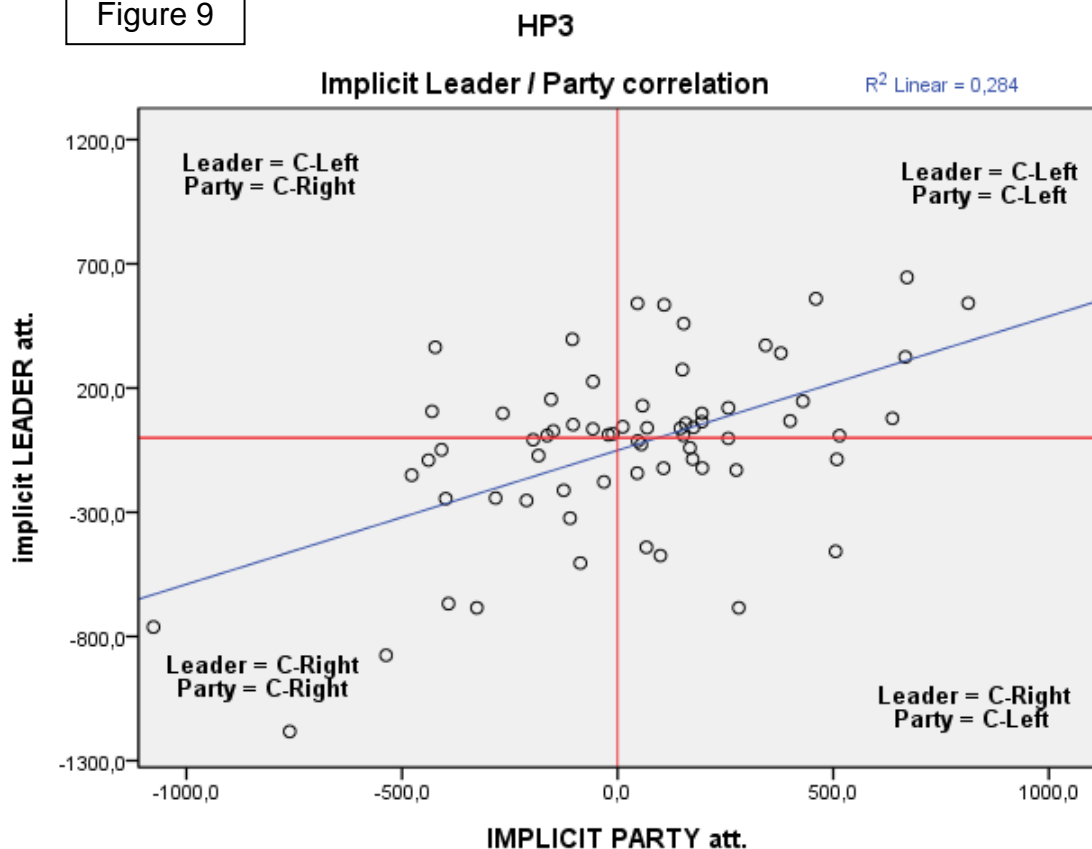

Figure 9

HP3

Implicit Leader / Party correlation

As it was supposed, the correlation between leaders and parties at the implicit level is a lot lower than the coefficient at the explicit level, **r =.53, p value= .000 (N68).** Accordingly, as illustrated by the previous graph (fig. 9), it seems that there are many instances in which the implicit perceptions of the leader and the party differ (HP3). Even if a *positive linear correlation is still reckonable, many outliers between party and leader preferences are evidenced* (fig. 9). A great number of respondents have implicit preferences for a certain party although, those attitudes are not confirmed by the implicit preferences for of the leader of this party. The 2nd and the 4th quadrant of Scatterplots in fig.8 show those incongruities between party and leader preferences.
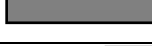
The limits of the previous analysis is that it cannot show which Leaders are less correlated with their respective parties, so to accordingly test HP3 there is the need to examine the correlation between party and leader for each respective pair. Results are expressed in *Table 12*.

TABLE 12: PAIRED SAMPLE CORRELATIONS		
		significance
di Pietro -IDV	**r = - .44**	p = .000 (N66)
Bersani - PD	**r = - .32**	p = .008 (N66)
Vendola -SEL	**r = - .44**	p = .000 (N67)
Fini -FLI	**r = - .39**	p = .001 (N66)
Berlusconi - PDL	**r = - .44**	p = .000 (N67)
Bossi -LN	**r = - .39**	p = .001 (N67)

Overall, implicitly there was a weak, positive correlation between parties and leaders attitudes, evidencing that *party and leader often differ*. To have a an indication of how separate two sets of measurements are -allowing to determine whether something has changed and there are two distributions, or whether there is effectively only one distribution - there is the need of other analysis.

A *Paired T test* was computed to assess if the leader Response Times are significantly different to each respective party Response Times, at implicit level. Each pair significance and the difference of paired means (Leader – Party RT) are reported in *Table 13 (p. 54)*.

TABLE 13: PAIRED SAMPLE TEST		
Paired Sample Test (two tailed) α = .05		**Paired Δ means**
di Pietro -IDV	**t (65) = - 0,96, p = .342**	- 45,99
Bersani - PD	**t (65) = 1,09 p = .046**	+58,20
Vendola -SEL	**t (66) = -1,15 p = .252**	-52,82
Fini -FLI	**t (65) = - 1,07 p = .288**	-55,55
Berlusconi - PDL	**t (66) = - 2,167 p = .034**	-100,28
Bossi -LN	**t (66) = - 0,746 p = .459**	-33,62

As in four pairs - *Di Pietro and IDV*, *Vendola and SEL, Fini and FLI,* and finally *Bossi and LN* - the significance value is greater than .05 (2-Tailed), it should be concluded that differences between Party an Leaders Response Times means exists, but they are not statistically significant.

Anyway, the paired samples *t* test succeeded to reveal a statistically reliable significance between (1) the difference in average Response Times of Bersani and his party PD, and (2) the difference in average Response Times of Berlusconi and his party PDL.

Bersani and PD difference between paired mean of Leader and Party Response Times is positive (*Table 13*), meaning that it is easier for respondents to recognize the party than the respective leader (RT party > RT leader).

On the other hand, Berlusconi and PDL mean difference (*Table 13*) gives negative result, meaning that it is easier for voters to recognize the Leader, than the respective party logo (PDL).

These paired t-tests, together with the implicit party/leader correlations, completely ratify HP3, revealing that *implicit Response Time for leaders are significantly different than implicit Response Time for parties*.

DISCUSSION

The IAT concept - where subjects make selections before the conscious self has time to screen its deeper feelings - has a multitude of reliable records of unconscious measure. This experiment adds one encouraging employment of this tool in the political domain, increasing our knowledge on voters decision-making. The development of this method in Italian politics *allowed to assess preferences on current Italian parties and leaders, even when these perceptions existed only outside of conscious awareness or control* (Smith & Nosek, 2009). This measure of implicit political perception has opened the analysis of our three main hypotheses, where remarkable results may be offered to discussion.

HP1 CONTRIBUTIONS

As sustained by cognitive scientists, the existence of observable implicit elements in political decisions-making has emerged during the IAT measure of political attitude.

The experiment demonstrated that voters' explicit and implicit political preferences are not strongly correlated, and that implicit individual attitudes frequently differ from the explicit ones during the political choice. The substantiation of our first hypotheses stands out that *what people said and what the test showed they were feeling, were often un-matched*.

There are followers from one political side implicitly showing totally *opposing preferences* during the test (group 4), there are respondents that implicitly have *well-built* political preferences but then express quite moderated opinions on self reports (group 3), there are subjects who are *fairly convinced* at the implicit level and then strengthen this attitudes at the explicit level (group 2), and finally there are subjects with *well correlated* implicit/explicit preferences (group1).

As noticed by many neuroscientists, the revealed **implicit attitudes**, combined with the deliberate political perception, **affect and complement the functioning of political behaviors** (Smith & Nosek, 2009). Consequently, the observed **mental processes occurring outside awareness are also essential for gaining insight into the functioning of human minds** (e.g. Walter, 2005) and had to be discussed.

In light of cognitive knowledge, the interplay between implicit and explicit attitudes outlined in this experiment has been interpreted, to clarify the whole decision processes occurring during the vote.

The observed implicit political attitudes suggest that, *at non-conscious level, there are pressures in one political direction* that need to be *ratified (group 1),* to be *reinforced (group 2),* or to be *overcome (group 4), before the final aware decision is taken.* As sustained by Smith and Nosek (2009), **those implicit pressures have been developed unawarely in our minds during** *life experience*. Our minds exposure - to images stories and issues of politicians and parties - builds our implicit perceptions of them during time, even if we are unaware of these processes (Smith & Nosek, 2009).

Implicit attitudes, as the one measured during the test, are integral part of the choice processes because they *affect future mind exposures and contacts* with other stimuli which in turn affect future perceptions (Fitzsimons *at al.,* 2002). Those non conscious stimuli - affective, automatic and obviously implicit - are e*laborated* during the decision-making through unrecognized mechanisms which lead the choices (Walter *et al.,* 2005)*.* For example, our respondents showing great *implicit* association to center-right have determined a positive unconscious feeling with center-right leaders and parties, during the various exposures their minds had in their life experience (e.g. their teacher's opinion, listening to bus/street/coiffeur discourses, family values, watching a movie or listening to a song, etc.). Proceeding in the decision-making process, their implicit favorable attitudes to center-right are elaborated in sub step of decision process, to become aware and be recognized as their final political choice (Walter *et al.,* 2005, Knutston *et al.,* 2007).

During this primary sub-step of decision-making *only implicit attitudes exist*, but, *affecting the choices of subsequent information* (Visser *at al.*, 2000), they are the first elements explaining the process of political preferences. Generally speaking, **implicit attitudes affect how voters choose information and treat them in the future** (newspaper, opinion leaders, internet, TV, books, magazines, etc.). Moreover, as suggested by literature (Westen, 2008) eventual political *contradictions are not going to be evidenced* on their supported candidate, while they will be strongly remarked in the opposed candidate. *This unaware process controls the choices of information,*

supports the statement of the implicit preferred candidate, *and finally makes the implicit preferences converge in the explicit choice*. In a context of where people cannot collect a lot of data to make an evaluation (Knutston *et al.*, 2007) implicit attitudes give the principal devices to choose; so they are one of the principal elements affecting voter decision.

The elaboration of the choice is affected by *social structures* (**CCT**; Leighley & Matsubayashi, 2009) and *contextual elements* (**Marketing Model**; **Newman & Sheth** 1985) such as:

- *current events* (e.g. terroristic attack, murders in your neighborhood, etc.),
- *experienced issues* (e.g. stolen property, family story, travels, etc.),
- *individual current situation* (e.g. need of an apartment, unemployment, etc.)*,*

These elements definitely work at unconscious level, but when the decision-making process arrives at this *second sub-step* they become more and more explicit. As explained by **Newman and Sheth (**1985), there are other three elements working out in voters' mind:

- *feelings aroused* (e.g. empathy, positivity, fear, etc.),
- *candidate image* (e.g. looser, self-made man, etc.),
- *social imagery* (e.g. party represents labors/greens/Catholics, etc.),

Within this sub-step, from their being implicit, those elements become more and more aware and continue to *shape explicit political preferences*. Finally, *issues and policies,* offered by the party or candidate, are also taken into account during the choice.

The **fully conscious level** is the last sub-step in political decision-making, where all those elements previously elaborated by our mind come out in the actual political choice. In this third sub-step the voter's aim is to produce the *maximum utility* for the subject - and his family - (Downs, 1957), and to maximize *benefits attended for the whole society* (Edlin *et al.,* 2007).
Anyway the evaluation of voters' maximum utility is the one obtainable with "fast and frugal" decision-making (**Baldassarri & Schadee, 2005)**, given the amount of implicit and explicit attitudes collected during the process.

Through this process the implicit attitudes may consequently be elaborated in the same direction of unaware attitudes (**group 1**; scores in black circles in fig. 2 - results). *So, confirming what the unconscious political brain has perceived, they were "ratified consciously"* (Westen, 2008) and came out in self-reports equal to unaware political preference.

The integration of cognitive knowledge in political decisions could also better explain the process of those subjects whose IATs evidenced fairly convinced implicit attitudes and then showed secure preferences at explicit level (**group 2,** orange squares in figure 2 of results). By leveraging the information process implicitly closer to their unaware preferences (Visser *at al.*, 2000), and by confirming statement of their primary preferred leaders or party (Westen, 2008), in the end voters consciously strengthen the political choice already made at the implicit level. So at the beginning of the previous process even weak implicit preferences could become convinced future choices, following the direction of implicit attitudes. *This process would enlarge the primary political attitudes transforming subjects with fairly convinced implicit attitudes in explicit engaged voters*.

This is a well-known procedure that is also valid for undecided voters (HP2), while the comportments of **group 3** - strong implicit attitudes expressed by weak self reports preferences - could be assimilated to reticent voters (HP2) who preferred not to express their political opinion in survey or who lied. Moreover it should be noticed that IAT score could be enhanced by the fact that topics for which the respondents perceive themselves as being distinct from the cultural norm, elicit stronger correspondence than those for which the respondents perceive themselves as being just like the norm (Nosek, 2005).

As it was also observed in Iacoboni researches (2007), some subjects' implicit choice could be reassessed during the process and it can differ when outlined explicitly (**group 4**, yellow arrow in figure 2 of results). In those subjects, whose explicit attitudes differ from implicit perceptions of Leaders and Parties, the implicit attitudes have been overcome during the last sub-steps of decision-making process, because they are evaluated through other more aware elements. *Some unaware hurdles that this subjects' brain acquired during life exposures to unconscious stimuli, have been*

surmounted because of contextual clues, personal aware experience or - as said by the rational model - given the utility attended by this subject.

Anyway it seems clear that, beyond classical marketing and economic theories, a new model of voter behavior including implicit attitudes must be elaborated to explain the real voter decision-making process.

The results for **subsamples** analysis confirm the validity of the process previously outlined, evidencing strong implicit elements inside political preferences.

In the second subsample it is noticeable that correlation of explicit/implicit Leader's preferences is little weaker than the party one, suggesting that implicit elements are even more present in the Leader's choice compared to Parties choice. *Emotions seem actually best aroused by leaders' pictures than parties' logos.*

But it is in the third subsample (individual leaders level) that discrepancies between implicit and explicit preferences are even more noticeable, with really low implicit correlations**.** Nosek, (2005) explained that when the IAT deals with two competing alternatives (such our first level of the analysis: center-right *vs.* center-left) stronger correspondence are obtained in comparison with to *classifications without a direct contrast* (such this third level analysis where the classification is not bipolar but all six leaders contrast at the same level). Even if this technical *limitation* explains in part why correlation is so low, it is unquestionable that, here again, *the process flowing from implicit to explicit preference seems to have strong unconscious basis* that needs to be considered during the choice*.* In this analysis the implicit process affecting voters has been significantly observed in two possible candidates which were differently exposed to respondents' brain perception. Voters' exposures during their life to Vendola are actually recent and maybe less stratified in our perceptions. Even if it is still observable what was discussed previously (great implicit/explicit discrepancies), the explicit-implicit correlation here is higher than the average. The decision-making process on this candidate has just begun to affect our perceptions and generally those who like him implicitly have expressed higher scores also explicitly and *vice-versa*. On the contrary, differences between what voters have expressed and what they implicitly perceive about Berlusconi are more remarkable. Voters generally evidence unconscious positive association at implicit level which often changes when preferences is elaborated consciously (lower explicit scores

registered). What voters feel and what they say it is particularly unmatched when this stimulus appears. These results do not mean that those whose subjects didn't match their feelings will not vote for what their explicit preferences say. But it does suggest they'll have to overcome some internal hurdles during the choice processes to overcome unaware perceptions.

The electorate could elaborate their judgment more or less consciously during this process. Taking into consideration available resources (time and info) voters therefore examine the promises of parties in order to calculate the difference between the utilities they expect from the two parties if they were elected (Downs, 1957). Moreover they may also compare the past performance of parties, but frequently the implicit perception is greater than other elements and leads the whole decision-making (Fitzsimons *at al.,* 2002). **For this reason I believe that a valid model of voting behavior could not leave measures of implicit preference aside.**

HP2 CONTRIBUTIONS

In addition to previous analysis HP2 observed the existence of clear implicit political preferences even among *undecided* and *reticent* subjects. The majority of those subjects - with no explicit political preferences – incredibly showed implicit attitudes which were significantly different from 0 during the IAT, at all three levels of the analysis.

This moves our discussion at the beginning of the previously discussed voter's process of decision, when the subject is still unaware of his perceptions but, as shown by our results, his implicit attitudes are significantly different from not having any political preferences. Knutston actually gave us the theoretical basis to sustain that sometimes decisions occur outside the voter's plain awareness (Knutston *et al.,* 2007). Before proceeding with other existing framework to explain voters' behaviors, it should be considered that *our brain incorporates a vast amount of implicit knowledge - where we live, what we do, and who we know - that unconsciously aggregated, already shapes our preferences.*

As evidenced in the discussion of Hp1 results, Hp2 confirmed the fact that **political choices are made at nonconscious level before the end of the decision-making process**, and are scrutinized until they outcome as explicit preferences.

The final choice could be, or not be, similar to the primary implicit attitudes, anyway, even in undecided voters, those implicit preferences affect in many way the decision-making process, and give the political predisposition of the subject. In actual facts, the undecided voter **attempts to resolve the indecision through implicit perceptions** selecting those experiences which are closer to his deeper feelings. Not only the eventual information search will be biased by these first implicit attitudes (Visser *at al.*, 2000), but during the whole process of indecision resolution, undecided voter will be more open to believe and agree to opinions and statements of his implicitly preferred leader or party (Westen, 2008). Generally speaking, especially in contexts with limited resources, implicit **preferences provide a push toward one position over the other** and soon or later it could resolve the indecision. It is not to exclude that this could happen until the undecided voter is inside the cubicle; when the voter is physically taking a decision he finally discloses his choices, which would be unobservable in advance without the IAT.

Consequently, among undecided voters (whose explicit attitudes is 0), a measure of implicit preferences is a signal of their possible future political choice. Many researches showed that undecided's implicit attitudes predicted their future choice when participants are unable or unwilling to express an opinion (e.g. Arcuri *et al,* 2008; Galdi *et al.,* 2008). When explicit attitudes of voting intentions are not available this information is tremendously important for marketers.

Similarly, the IAT may be useful with *reticent* voters because, while they do not express their engagement with a questionnaire, they may allow to disclose their implicit attitudes through the anonymous IAT. So this methods could be used also to indirectly disclose perceptions of those who are unwilling to say what they vote, but there is the total necessity that they are well-informed on IAT functioning and they give the consensus to be tested on the research objective.

The current models actually ignore the possibility to explain undecided political preferences, but undecided voters are those which strongly affect the predictability of current elections and whose eventual behavior is not measurable throughout normal questionnaires. **So a measure of implicit attitudes (the IAT) and a new framework of voter's choice including implicit preferences are absolutely necessary** and are probably the most compelling implications of this research.

HP3 CONTRIBUTIONS

Furthermore the discussion on implicit-automatic elements in voter's decision-making is enriched by HP3 results. Here it is evidenced again that this voters' choice is not structured following the rational assumptions; in particular, *voters do not follow ordered paths for implicit preferences*: those preferring the Leader of party A compared to the Leader of party B do not necessarily prefer Party A to Party B.

Implicit attitudes during the experiment outlined a **different political engagement between leaders and their respective parties**. So, even if the choice is made by the some components, and should include a measure of implicit attitudes, results of HP3 outlined that those processes may enhance the first or the last sub-steps, so Leader and Party preferences could be different. Consequently, *investigation on political preferences (where the outcome choice is the object of the analysis) should be made separately for the leader and for the party attitudes*. An analysis on candidate preference, for example, might give lower center-left preference than what would be expressed by the same analysis on their respective parties and *vice-versa*, depending if the preference has been more structured at conscious or unconscious level.

This HP showed that all the political Party-Leader propositions (less one) are more easily identified by their respective leaders than by their party logos. Sustaining what was already evidenced by Hp1, it is possible to notice that **candidates arouse more implicit attitudes than parties**. So, in a model explaining the functioning on voter's preference about a political candidate, the existence of a measure of implicit attitudes is even more fundamental.

The *reliability* of this tool has been evidenced by the fact that at the implicit level, the sole party that was easier identified by his logo rather than by his leader was PD, which explicitly recognizes itself in this strategy. On the contrary, parties where leadership is accepted to strengthen their positioning - di Pietro for IDV, Berlusconi for PDL, and Bossi for LN – actually showed the force of their leader image in the IAT as well as in their marketing approach (deciding to show their names also on their party Logo). Fini also has his name on his party FLI, but together with Vendola for SEL, the dominance of their leadership over their respective parties cloud be mainly determined by the recent constitution of their parties, whose new logos are still hardly recognized by respondents in the automatic test.

HP3 tested that political choices are not shaped with a rational structure in our minds, supporting the existence of unconscious/emotional elements in political behavior which existent models still have not considered implicit elements**.**

Limitations and Further Researches

While the IAT is more reliable than related association measures, it is not perfectly reliable and some limitations of results have been noticed together with possible improvement of the current researches.

As with any measurement tool, there are *extraneous influences* that interfere with its effectiveness as a measure of associations. For example, some *features of the procedure* have impact on task performance (RTs). The most prominent influence is the order of the categorization tasks, as the first performed task interferes with performance on the second (it is easier and it could record lower RT latencies). Anyway, as expressed in methodologies, this negative influence has been strongly reduced in our experiment through a procedural change. Undoubtedly, further researches in coming years will continue to refine the methodological quality of the IAT, and more perfect association measurement could be gathered.

Moreover, a valuable further research could test the *consistency of preferences over time*, to understand the reliability of this experiment and to avoid the risk of fluctuations from moment-to-moment given by external factors.

A technical improvement would definitely be *the inclusion of latencies when participants make a mistake during the classification,* instead of erasing those data. This would be possible computing an *error penalty* in Response Times, which will be successively considered during the analysis.

Finally, as the hypotheses have highlighted the existence of unaware attitudes affecting political decision, we could be tempted to say that this influence is especially evident in the Italian context, where implicit/explicit correlation is lower than in previous studies. Anyway the limits of this and similar assertion is evidenced by the fact that *r increases with N*, and that we do not have the adequate samples to compare our research with the previous similar studies (where data were all collected through the web).

This experiment improved the identification of the cerebral mechanisms that are foundation of the voter's behavior and allowed to fully integrate nonconscious sub-step inside the decision-making process.

IMPLICATIONS FOR LITERATURE: THE NEUROMARKETING MODEL OF VOTING BEHAVIORS

Unquestionably, each party, coalition and leader populating the political arena could be observed rationally to evaluate costs and benefits of choosing it. Even if the utility maximization has proved to partially explain the final choice of voting behaviors, this research, substantiating the literature, *has shown the necessity to include a measure of implicit preference in existing models*.

Existing models of voters' behavior have been integrated and they have been supported by neuroscientific discoveries, to implement a **new model of voting behavior** which also considered the observed implicit/explicit interplay **(fig. 11).**

In this model **- i - is the IMPLICIT component unconsciously affecting voters' choice;** it explains the political decision-making process interacting with the previous models.

FIGURE 11
NEUROMARKETING MODEL OF VOTING BEHAVIOR

$$\Delta U = p\ (Bself + NBsoc) - c$$

*- **i** - is the IMPLICIT component primary affecting voters' choice*
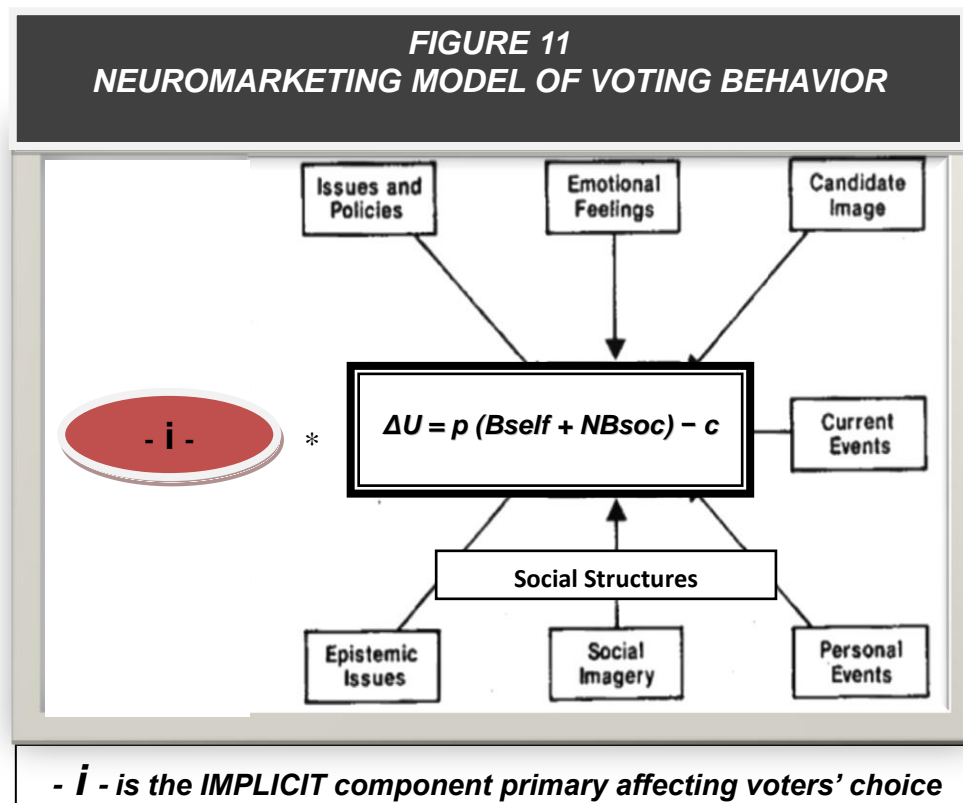
Toward everyday experience, voter's brain captures the implicit political attitude (-**i**-), which would be the basis of his future evaluation, information search and indecision solutions. This attitude is subsequently affected by many contextual and personal elements, becoming more and more explicit (**Marketing model**). The context, with the special magnitude of **Social Structures**, influences perceptions firstly implicitly and then more and more consciously; anyway primary perceptions strongly structure the whole decision-making. The Implicit attitude may or may not evolve in similar explicit preference, because even if political actors are influenced by elements that they not even recognize or control, explicit thinking is also significantly relevant (**Rational Model**).

Figure 11 (p.64) shows how the previous models contributed to the new one; illustrate the new graphical elaboration of the Neuromarketing Model Of Voting Behavior is illustrated in *Appendix 4.*

For the first time the **Neuromarketing model** frames the interplay between the unaware and the controlled mind, where the deliberate and intentional preferences may - or may not - take priority over automatic responses in achieving the final choice**.** The relative importance of each of the four parts could be enhanced during the process of elaboration, and the final choice could be based more on the implicit sub-step or more on the rational sub-step of the process.

Cognitive psychological work supplements marketing and economic work on political behavior, because the new schema concept could incorporate unconscious biases and heuristics, that belief systems (based on directly reported beliefs and opinions) could not.

Limitations and Further Researches

Neuroscientists argued that the implicit side of the choice is greater than the rational one. Even if this model recognizes the importance of unconscious decision-making*, it does not explain the weight of this key element.* From our research and from literature we can suppose that the implicit factor is relatively consistent, but *in further studies this model could be improved investigating the magnitude of each sub-step,* to obtain the average importance of each part.

The further understanding of voters' decision-making is surely the most compelling future development of this research. For instance, another further investigation of voter's mind functioning is the one suggested in our final part of the literature review. It could be interesting to test how the mind reacts to unaware stimuli that the context offers during the process. This could be implemented introducing subliminal stimuli in the IAT, to observe if our brain perceptions change after different stimulus exposure (e.g. war, fear, flags, etc.).

IMPLICATIONS FOR PRACTICE: FORECASTING METHODS

Media and political parties spend millions to predict the outcome of elections, anyway complains about the result obtained by the exclusive use of self-report survey methods are regular. Researchers have actually sustained that, what biases studies in public opinion today is the exclusion of affective and automatic models of information processing (Taber, 2003; Burdein, Lodge, & Taber, 2006; Kinder, 1998). Self-report methodology is actually limited by the interest and ability of respondents to report the factors that will predict their ultimate behavior. On the contrary, the IAT - measuring preferences even when the subjects are not aware - has tremendously advanced the predictability of election outcomes in most recent years.

One of the main implications of this research is actually that the IAT could be used in a *pre-electoral poll to improve the predictive power of electoral forecasts*. Perugini (2005) has claimed that *both the explicit and the implicit measures of political preference contribute to the prediction of voting behavior,* so the IAT should add predictive power to the usual forecasts of voting behavior through explicit attitudes. Additionally, IATs and self-reports analysis have documented an optimum relation with successive participants' voting behavior in the totality of experiments testing predictions (e.g. Arcuri et al. 2008). Thus, an ultimate point of discussion of this research is that: *the implicit/explicit interaction explaining the functioning of decision-making in our model, when implemented through the IAT, could also be especially predictive of voters' behaviors.*

After this research we can actually argue that the simultaneous use of implicit and explicit measures can help shed light on the process of political decision-making, in particular, we can discuss *that the interplay between implicit and explicit political attitudes can facilitate (when consistent) or forecast (when explicit are not available)*

the decision. This is also a valid way to overcome biases in "exit pools" – frequent in Italy - but it should be taken into consideration that administering a IAT involves time consuming face-to-face interviews, and requires a network of trained interviewers distributed throughout the territory. Thus, performing IATs would be much more expensive than assessing the standard explicit variables.

Although the measure of implicit attitudes has demonstrated to be useful on every subject for improving the comprehension of the decision-making, I would conclude that*, for those who do express explicit preferences, implicit measures of preferences give unnecessary additional value for election forecast.* So, I would limit the use of this tool only when explicit attitudes are not available, in this case the costs of administering the IAT are compensated by effective better performances in predicting electoral outcomes.

In spite of this restriction, IATs offer invaluable applications for politician, campaign managers, and officials researching accurate knowledge of candidate and policy preferences.

Limitations and Further Researches

To continue the Italian research on voter predictability through the IAT further studies could be implemented to test participants a second time to ask them their actual voting behavior. A *post-electoral question* would make possible to observe how implicit-explicit attitudes changes and test the predictive power of implicit perceptions. This further research would actually prove empirically what expressed by theories offering a more predictive measure of the current political preferences in Italy

As many authors warned, the application of neuroscience to political behavior arouses a definite **ethical concern** (e.g. Lee et al., 2006*; Aguirre, 2008).*

As considered before, neuromarketing techniques (through the IAT and other methodologies) may be able to identify voter's preferences. While this ability is desirable by politicians and marketers, it may be rejected by the polity and voters. The secrecy of an individual's ballot is the basis of modern democracies and must be inviolable. To violate this right implies the risk of intimidations and could be a real threat for everyone's freedom. Fortunately such an abuse of neuromarketing is unlikely. Given the size and noise of an fMRI scanner and give the collaboration

requested for proceeding in a IAT, no one brain could be analyzed unknowingly. The potentialities of these methods are restricted to mind knowledge and simply implicit attitudes may result from these studies. This system requires high subjects cooperation and training, making these studies essentially perfect to understand the functioning of human mind, but it is not reliable to measure actual behavior. While there is not an immediate risk, I appreciated that this emerging methods are monitored by "ethicists" and the possibility that neuroscience might invade our political privacy is constantly taken into consideration.

What I consider really important nowadays is to follow a common ethical process in political marketing, even with established methods. Threat to privacy and marketing manipulation are - and must always be - forbidden by the low, but I think that marketers themselves must take the responsibility of their role, banning unethical methods and setting clear **ethical limits**. This is especially true for political campaign, where values, hopes and future of people are handled. Voters' rights rest upon the assumption that voters' dignity should be respected, and that marketing has a duty to treat them fairly.

CONCLUSIONS

In political choices a dispassionate mind - that takes decisions by weighing the evidence and reasoning to the most valid conclusion - does not explain alone how the brain actually works; **the political choice includes unconscious and emotional stimuli that clearly affect political perceptions** (RQ).

This empirical research in the Italian political context confirms *that Neuromarketing methods add appreciable value to the understanding of political behaviors*. The methodology of the IAT, developed by Professor Greenwald, has successfully measured the strength of implicit association, accumulated through everyday experiences by subjects.

Research analyses have verified that people may show *implicit attitudes* that strongly affect their minds, even if they honestly differ with their aware political preferences. In other words, the IAT revealed clear unconscious political preferences, suggesting that *hidden tendencies are included into one's decision to* vote for a particular candidate or party.

It was obviously retained what previous recognized researches presented: we has confirmed that thoughts people *consciously and rationally* experience are crucial to understand human behaviors, however, we observed that *much of mental processing occurs outside awareness and its understanding is also important to explain voters' decision-making.*

The new elaboration of the "*Neuromarketing Model of Voting Behavior*"*,* that explains how automatic and controlled processes interact with rationality to shape behavior, will have an especially strong impact on theories, enhancing the existing interest in affective influences on political behavior.

The idea that our "political brains" are not fully rational offers great improvement also for *election forecast practices*, and it could be especially valuable for many subjects. Pollster and parties, officials but also every voter can benefit from the **theoretical and practical implications** given by this thesis improved understanding of voters' choice*.*

Moreover, in the concluding review of this study results, **the ultimate suggestions of this research are for marketing.**

Through **HP1** we have mainly investigated the interplay between explicit an implicit association, showing that unaware preferences exist and that, through several unaware mechanisms, *they affect the voting choice process*. The main **implication for marketing** is that - *inside the boundary of ethical limits* - the *improved comprehension of voters' behavior could be used in political marketing to encourage rational decision-making*. Marketers have the responsibility role *to work on strategies which leverage implicit exposures, avoiding any manipulations*. Offering emotional and indirect stimuli which prepare our mind to capture subsequent rational concept and issues, marketers have the power *to help individuals to take better decisions*. The most real influence on choices is not persuading people to make this or that choice, but the ability to *structure their decision-making process* as evidenced in our model. Three sub-steps of the choice process should be taken into account in political marketing (implicit, socio-contextual and rational). Recognizing the realism of "limited rationality", marketers have the role to create strategies which help voters to move toward a sense of lucidity, plainness, and security until the aware choice has been made.

HP2 showed that among undecided voters implicit attitudes could foresee the likely voter's choice when political attitudes are unexpressed, suggesting that generally the brain has already developed an implicit political preference, even if subjects are still consciously unaware. Thus, completely undecided are few and the majority of them have implicit attitudes that already guide the choice process; consequently, **implications for marketing** are impressive. To help individuals to overcome the indecision and make better evaluations, *marketing could enhance the process of preference disclosure, developing strategies which help voters to overcome unawareness*. Since high levels of uncertainty (no info, no time, no objectivity) increase the power of implicit responses, the main way for marketers to encourage aware voting choices is to reduce the uncertainty of the political choice. Marketing can go beyond political issues, individuating overall areas of uncertainty. To stand above the competing parties in a fair/ethical way, it would be a mistake to concentrate only on the rational brain, but to increase fear and ambiguity which drive to irrational vote is neither winning overall. The most compelling strategy implies to elicit the emotional brain, but with the aim to implicitly (1) reduce anxiety, (2) build

trust, and (3) be perceived as the one which provides solutions to people's real problems.

HP3 showed how implicit preferences, which are so relevant in leading the final choice**,** differ so much from each Leader and its respective Party. **Implications for marketing** are of course to focus on *two different strategies for these two issues*, in a way that should be finally compatible to push the whole voter's choice in the "right" political direction**.** I personally suggest to *work on leader to leverage the implicit attitudes and then substantiate explicit choice using the party symbols* (which are the one actually relevant during the vote in Italy). Leaders could enhance unconscious positive commitment being for example (1) excellent storytellers, able to design appealing scenarios which anticipate desired message. Moreover they should be able to (2) offer policies that first communicate values, and which really touch inner voters' concerns. More aware preferences could be contemporarily nourished by leaders (3) being frank and respectful, (4) engaging in genuine dialogues and (5) drawing out interpretations of the situation. At the same time, parties should face with the aware side of political choice. For example, (1) it should be avoided to make declarations connected to the party image that cannot be substantiated, (2) the voice of voters could be associated to the party logo for the strongest statements enhancing emotions, but then (3) the focus must be on groundwork and quality, in order to survive to rational scrutiny.

The suggested strategies - stimulating the unconscious to make a better use of their rational brain – offer *benefits for the whole society* because they increase the awareness of the vote, reduce abstentionism, form real citizens and leave fulfilled voters. Moreover, this contributions may be extremely interesting for marketers in Italy, where we assist to higher uncertainty in politics, with consequent feeling of distrust and distance that lead to unstructured political choices and a higher use of unconscious brains.

Finally, the understanding of how the political brain works helps to *explain why political strategies can go wrong.* As we evidenced that voter's choice is a complex human behavior made by conscious and automatic components**, in** the observed Italian case, Parties should implement the suggested strategies overcoming (1) the

evidenced lack in leader-emotional arousal for someone, and (2) the lack of investment in party-rational perceptions for others.

The amount (and the value) of possible further research inside political marketing has been previously presented, anyway, this new branch of marketing connected with neuroscience offers incredible opportunities even outside politics in consumer's market. Moreover, neuroscience inferences about the relevance of emotional and unconscious as motivational elements explain why surveys are so inefficient making clearer to any marketing "what button must be pressed".

To conclude I come back to the Italian reality, pointing out that it is insufficient to analyze just the rational and emotional aspects of voting behavior as observations in isolation. This knowledge must be used to re-examine the structure of our democracies so that efficient rational voters' choices can promote the effective management of the "public", providing services in the general interest.

"Everything has changed, except human nature"
Albert Einstein

NOTES

[i]   Note that the link with irrationality here it is not in its outcome of political choice (an ultimate judgment that is defensible regardless of how it was generated) but it is in *the process* (in implicit cognition there isn't a deliberate, logical evaluation of the claims and evidence).

[ii]   Here we take the more inclusive Nosek & Greenwald conceptualization of the terms "implicit" and "explicit" (2009, pp. 374). A measure is implicit "if it does not require awareness of the relations of the attribute to the response" and if the resulting effects are mental contents that respondents might be unwilling or unable to report – because they actively disagree with their validity, do not want others to know about them, or are not aware that they possess them. The terms *rational-aware-deliberate*, are both referring to *explicit* attitudes, while *nonconscious-unconscious-unaware* are both referring to the *implicit* attitudes,

[iii]   Vote is one behavior that can be effectively performed in a test, simulating through intention a possible future voting behavior.

[iv]   Coming from the economic approach, the Rational Model applies the assumptions and methodology of neoclassical economic theory to what it likes to refer as the political market, for these reason it is also called "economic model of voting behavior".

[v]   *Bsoc* is the average benefit per person if the preferred candidate wins, and α is a discounting factor to reflect that benefits to others are less important than benefits to self; thus, we would expect α < 1 for most people. The factor *Bsoc* represents the benefit to others as perceived by the person making the decision whether to vote; it is not an averaging of the actual utilities or preferences of the N persons in the population affected by the election (Edlin *et al.* 2007).

[vi]   *"As a species, humanity expresses its undeveloped mentality through its political behavior, which does not differ significantly from the social behavior of other animals. That is, human political behavior is driven by the same instincts that guide the behavior of sheep, wildebeests, and other herding animals"* (Watson 1994). he exemplify this element with the millions of voters stamped to join the "herds" of charismatic leaders. There, they delight in winning decisive victories, though it is not always clear exactly what they win

[vii]   Some studies from Matthew Taylor (2009) observed that "it seems to be a tension between behavioural economists endlessly pointing out the inadequacy of our irrational habits, and neuroscience research lauding our finely-tuned social brains". But he partly explained this apparent contradiction by the difference between biological time, which is slow and incremental, and historical time, which accelerates in leaps. The brains that evolved to perform hunter-gatherer tasks for the first 180,000 years of Homo sapiens' existence have, in the last few hundred, been confronted with a world that is changing ever more quickly. He concluded that our brains have not always adapted well to modern society (ex: obesity and loneliness).

[viii]   Psychologist Benjamin Libet demonstrated in the 1970s that our awareness of a decision to act - for example to reach out and pick up a glass - takes place later than an observable electrical change in the brain which is associated with that act.

APPENDIXES

APPENDIX 1: Stimuli – Leaders pictures

Requisites

Pictures that were more similar and neutral as possible were selected considering those characteristics: (1) same size and shape,(2) in close-up frontal shot, (3) colored images (4) little smiling, (5) similar formal dresses, (6) neutral background, (7)leaders and logos perfectly aligned in the center of the slide.

POLITICAL STIMULI: Leaders		
Pierluigi Bersani	Nichi Vendola	Antonio di Pietro
Silvio Berlusconi	Umberto Bossi	Gianfranco Fini

APPENDIX 2 : SELF-REPORT (with codification)

Q1   *Politicamente ti definisci:*

-2	☐ *fortemente di centro-destra*
-1	☐ *di area vicina al centro-destra*
0	☐ *di centro*
0	☐ *attualmente non saprei*
0	☐ *non voglio rispondere a questa domanda*
1	☐ *di area vicina al centro-sinistra*
2	☐ *fortemente di centro-sinistra*

Q2.   *Immagina di essere nella cabina elettorale:*
dai un punteggio di preferenza a questi LEADER politici da 1 punto a 5 punti,
dove 1 è il voto più basso e 5 è il voto più alto

        1   ☐ *non voglio rispondere a questa domanda*
        2   ☐ *attualmente non saprei fare questa valutazione*
        3   risponde

1	*Antonio di Pietro*	1 ☐	2 ☐	3☐	4☐	5☐
2	*Gianfranco Fini*	1 ☐	2 ☐	3☐	4☐	5☐
3	*Nichi Vendola*	1 ☐	2 ☐	3☐	4☐	5☐
4	*Pierluigi Bersani*	1 ☐	2 ☐	3☐	4☐	5☐
5	*Silvio Berlusconi*	1 ☐	2 ☐	3☐	4☐	5☐
6	*Umberto Bossi*	1 ☐	2 ☐	3☐	4☐	5☐

Q3.   *Immagina di essere nella cabina elettorale:*
dai un punteggio di preferenza a questi PARTITI politici da 1punto a 5 punti,
dove 1 è il voto più basso e 5 è il voto più alto

        1   ☐ *non voglio rispondere a questa domanda*
        2   ☐ *attualmente non saprei fare questa valutazione*
        3   risponde

1	*FLI - Futuro e Libertà per l'Italia*	1 ☐	2 ☐	3☐	4☐	5☐
2	*IDV - Italia Dei Valori*	1 ☐	2 ☐	3☐	4☐	5☐
3	*LN - Lega Nord*	1 ☐	2 ☐	3☐	4☐	5☐
4	*PD - Partito Democratico*	1 ☐	2 ☐	3☐	4☐	5☐
5	*PDL - Popolo Della Libertà*	1 ☐	2 ☐	3☐	4☐	5☐
6	*SEL- Sinistra Ecologia e Libertà*	1 ☐	2 ☐	3☐	4☐	5☐

APPENDIX 3: SUMMARY OF EXPLICIT AND IMPLICT SCORES

left attitude when data > 0; no attitude when data= 0, right attitude when data < 0

Subject	explicit attitude	EXPLICIT LEADERS att.	EXPLICIT PARTY att.	implicit attitude	implicit LEADER att.	IMPLICIT PARTY att.
1	2,333333333	2,333333333	2,666666667	261,55	8,5	514,6
2	2,444444444	3	2,333333333	-25,5	52,33333333	-103,3333333
3	0	0	0	13,91666667	-27,16666667	55
4	0	0	0	-4,833333333	11,83333333	-21,5
5	0	0	0	-971,6	-1182,7	-760,5
6	2	2	2	357,5666667	372	343,1333333
7	2,222222222	2,333333333	2,333333333	210,6666667	-87,16666667	508,5
8	-0,111111	0	-0,333333	-162,0083333	106,3333333	-430,35
9	-1,888888889	-2	-1,666666667	-321,9166667	-245,1666667	-398,6666667
10	-2,666666667	-3	-3	108,8333333	41,66666667	176
11	1,777777778	1,666666667	1,666666667	-84,41666667	97,66666667	-266,5
12	2,444444444	2,666666667	2,666666667	129,8333333	64,33333333	195,3333333
13	1,222222222	1	0,666666667	137	98	195,3333333
14	2	2	2	37,15	-122	196,3
15	2,555555556	2,666666667	3	306,3333333	459,5	153,1666667
16	1,222222222	0,666666667	1	80,86666667	9,333333333	152,4
17	2,111111111	2,333333333	2	212,0833333	274	150,1666667
18	1,666666667	1,333333333	1,666666667	-127,75	-72	-183,5
19	1,777777778	1,333333333	2	293,5	541	46
20	1,777777778	2	2,333333333	188,4333333	120,2	256,6666667
21	2,555555556	2,666666667	3	357,6666667	78	637,3333333
22	2,222222222	2,333333333	2,333333333	0,083333333	154,5	-154,3333333
23	1,444444444	1	1,333333333	-706,4166667	-875,8333333	-537
24	1,888888889	1,666666667	2	93,25	128,8333333	57,66666667
25	2,111111111	2	2,333333333	126,9166667	-2,666666667	256,5
26	2,222222222	2	2,666666667	359,5833333	340,6666667	378,5
27	2,111111111	2,666666667	1,666666667	24,01666667	-457,4166667	505,45
28	-0,555555556	0,333333333	0	-264,5	-90,33333333	-438,6666667
29	1,777777778	1,666666667	1,666666667	91,66666667	37,66666667	145,6666667
30	2,222222222	2,333333333	2,333333333	-11,16666667	35,16666667	-57,5
31	2,666666667	3	3	145,7083333	396,4166667	-105
32	-1,444444444	-1,333333333	-2	-919,25	-762	-1076,5
33	0,666666667	0	0	-187,0416667	-440,75	66,66666667
34	0	0	0	-29,33333333	364,2333333	-422,9
35	1,333333333	1,666666667	1,333333333	54,08333333	39,83333333	68,33333333
36	-0,222222222	0	-0,666666667	-168,4166667	-211,8333333	-125
37	0	0	0	-314,2166667	-150,8333333	-477,6
38	-1	-0,333333333	-0,666666667	-77,45	8,666666667	-163,5666667
39	-0,555555556	-1,666666667	2	-530,1166667	-667,8666667	-392,3666667

40	2,222222222	2,333333333	2,333333333	233,8333333	67,66666667	400
41	-1,444444444	-1,666666667	-0,666666667	-232	-252,8333333	-211,1666667
42	-1,666666667	-2	-2	-295,4333333	-504,5	-86,36666667
43	-1,555555556	-1,333333333	-1,333333333	-104,8333333	-177,8333333	-31,83333333
44	-1,333333333	-0,333333333	-1,666666667	-187,6666667	-474,5	99,16666667
45	2,111111111	2	2,333333333	43,91666667	-86,16666667	174
46	2	2	2	17,03333333	-12,76666667	46,83333333
47	0	0	0	288,25	147	429,5
48	1,555555556	1,333333333	2,333333333	107,8333333	57,83333333	157,8333333
49	0	0	0	2,083333333	15,33333333	-11,16666667
50	2,444444444	2,666666667	2,666666667	677,5	541,8333333	813,1666667
51	1,777777778	1,333333333	2	72,41666667	-130,3333333	275,1666667
52	1,222222222	1	0,666666667	63,51666667	-40,76666667	167,8
53	1,888888889	2,333333333	2,333333333	-101,85	-7,833333333	-195,8666667
54	1,666666667	2	2	-	-	-
55	0	0	0	-217,05	-323,6666667	-110,4333333
56	-0,333333333	0	0	-262,9166667	-242,8333333	-283
57	2,333333333	2,666666667	3,333333333	-228,4166667	-48,5	-408,3333333
58	2,111111111	2	2,333333333	27,91666667	44	11,83333333
59	0	0	0	-8,1	-122,5333333	106,3333333
60	0,888888889	0,666666667	1	272,5833333	-684,4	280,8333333
61	0	0	0	-505,4166667	-684,4	-326,4333333
62	0	0	0	-61,1	27	-149,2
63	-1	-1,666666667	-0,333333333	84,45	226,0333333	-57,13333333
64	0	0	0	321,4166667	535	107,8333333
65	0,888888889	1	0,666666667	509,5833333	559,3666667	459,8
66	0,333333333	0	0	658,25	645,3333333	671,1666667
67	-0,333333333	0	0	-48,56666667	-142,4666667	45,33333333
68	1,888888889	1,666666667	2	496,1833333	325,2	667,1666667

NEUROMARKETING MODEL OF VOTING BEHAVIOUR

2nd level -
MIXED ELABORATION

1st level -
UNCONSCIOUS

EMOTIONAL FEELING

PERSONAL EVENTS

3rd level -
DELIBERATE

CANDIDATE IMAGE

*

$$\Delta u = p (Bself + \alpha NBsoc) - c$$

Where - I - is the measure of Implicit preferece

EPISTEMIC ISSUE

CURRENT EVENTS

SOCIAL STRUCTURES

- I -

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