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CAFÉ WORKING PAPER NO.1

Centre for Applied Finance and Economics (CAFÉ)

Social Brain-Constructed Relational Leadership:
A Neuroscience View of the Leader-Follower Duality

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October 2019

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Abstract

Relationship-based approaches to leadership represent one of the most fast growing leadership fields that emphasize the interaction between the leader and the follower. The critical question though is the way that leadership actors (leaders and followers) are linked to each other and in particular how they try to understand how to do that in the workplace. Also, what is even less understood is the role of consciousness in this relationship. In this respect, this conceptual paper explores consciousness within the context of the social brain theory to argue that leadership actors need to revise their approach to individuality and focus on mutually dependent relations. We introduce the concept of *Homo Relationalis* arguing that leadership is not just social constructed element, but also social brain constructed phenomenon. We finally recommend a new approach of applying cognitive style analysis to capture the duality of leader/follower in the same person, following the self-illusion theory.

Key Words: *Relational Leadership, Neuroscience, Leader-Follower, Consciousness, Cognitive styles*

Introduction

Relationship-based approaches to leadership represent one of the most fast growing leadership fields and help us understanding better organizational leadership (Dihn, et al., 2014). Relation-based approaches emphasize the relationship and thus interaction between the leader and the follower, rather than focusing on leader or follower characteristics and attitudes. In other words, the emphasis is placed on the way that the two human aspects of leadership phenomenon, namely the leader and the follower interact and influence each other at attaining mutual goals (Erdogan & Liden, 2002). In this respect, it is known that leaders are linked to followers and *vice versa* in a sense of responding to other's needs (Simons, Kark, Leroy, & Tomlinson, 2011) towards the achievement of mutual goals. The process of their interaction along with the result of their interaction consist the wholeness of leadership. Viewing leadership as a relational process, it means that there is a mutual social influence "through which emergent coordination (*i.e.*, evolving social order) and change (*e.g.*, new values, attitudes, approaches, behaviors, and ideologies) are constructed and produced" (Uhl-Bien, 2006, p.655). Leaders and followers are essential part of this social process implying that in a relational mode of understanding leadership, both leaders and followers are losing their traditional identity (rooted in the formal organizational structure – manager-subordinate) and become inseparable parts of a co-constructing process of leadership. They become according to our view leadership actors[1].

What is less known though is the way that leadership actors are linked to each other and in particular how they try to understand how to do that in the workplace. What is even less understood is the importance and role of consciousness in this relationship. Especially, since consciousness

[1] In this paper we suggest the term *leadership actors* referring to both leaders and followers that co-create and define leadership as a relational process.

appears to be both a fundamental and a very elusive element in human relations. Therefore, this paper explores the concept of consciousness within the context of the social brain theory to argue that leadership actors need to revise their approach to individuality and focus on mutually dependent relations with each other. We introduce the concept of *Homo Relationalis* that as we claim should replace the dominant figure of *Homo Economicus*. In this respect, we suggest that leadership is not just social constructed element but also social brain constructed phenomenon that requires an understanding of human brain as social organ. We further recommend a new approach of applying cognitive style analysis to capture the duality of leader/follower in the same person, following the self-illusion theory.

In this respect, this paper is organized in six sections. In the first one, we try to briefly review the main arguments coming from relational-based school of leadership and how these are associated with brain science. In the second and third sections, we explore consciousness arguing that it is linked more to a collective brain and not to an individual one. In the fourth section, we bring on the discussion social brain theory that also links relational approaches to leadership with neuroscience. At the fifth section, we show that although social consciousness and social brain theory can show us the way towards relational leadership, the evolution of leadership and leadership relations were based on a bounded view of human relations driven by the *Homo Economicous* archetype that emphasizing our egoistic selves. Finally, we conclude that we need to abandon these archetypes and to emphasize more a "social brain-centric" relational leadership approach. In the last section, we summarize our main arguments and we introduce two new cognitive styles that can help capture the essence of relational leadership.

Relational Leadership on Board

The traditional leadership theories attempted to approach and understand leadership as an individual feature that consists of many cognitive aspects. The focus was on the individual that act as a leader and his/her traits, behaviours and styles. In other words, leadership is viewed and explored as an isolated phenomenon that based on the main actor, the leader, and his/her behavior formulated by his/her experience and knowledge of organzations and of different situations. As Cunliffe and Eriksen (2011) argue, traditional leadership theories were based on the "*periphery* and *content* aspects of leadership" (p. 1428) not the actual sense of leadership. These approaches ignored that leadership is a social phenomenon that takes place in a social context and it is highly formulated on a continuous basis from people's actions and interactions. The leader (and the follower) cannot be seen independently of the context that he/she participates as well as he/she cannot be seen independently of the people that relates with. Leadership occurs within the process of relating with each other aiming in doing things in a non-static, but dynamic and continuously evolving way. In this respect, a school of thought has been developed arguing that we need to understand the nature of leadership as a relational process (Dihn, et al., 2014;Uhl-Bien, 2005; Uhl-Bien, 2003 Erdogan & Liden, 2002; Graen & Uhl-Bien, 1995; Liden, Sparrowe & Wayne, 1997; Murrell, 1997) giving birth to the *Relational Leadership Theory* (Uhl-Bien, 2006) .

Relational leadership does not primarily refer to behaviours of leaders that are relationship-oriented emphasizing on compassion, support, trust and high quality work relations (Brower *et al.*, 2000; Uhl-Bien *et al.*, 2000; Lipman-Blumen, 1996; Graen and Uhl-Bien, 1995). Although such qualitative aspects of relationships might be very important when discussing consciousness and the social brain, as we will discuss later in the paper, according to more recent view of the relational approach, leadership can be understood as a social construction process within complex collective

entities (organizations) and through connections and interdependences of their members (Psychogios & Garev, 2012; Bradbury and Lichtenstein, 2000; Hosking *et al.*, 1995). Relational school argues that leadership is understood as a continuous and evolving reality within the process of organizing. In other words, a relational orientation to leadership means "that organizational phenomena exist in interdependent relationships and intersubjective meaning" (Uhl-Bien, 2006, p. 655). This approach recognizes that leadership as a relational process has to be investigated in the context of ongoing dynamic relations (Holmberg, 2000).

However, there are different approaches of how relational processes formulate organizational leadership realities emphasizing on dialogue and conversation, relational dynamics and creation of interactive processes (Cunliffe, 2001; Vine et al., 2008; Ness, 2009;). For example, leadership is seen as a relational dialogue among organizational members, whose interaction and engagement constructs everyday organizational realities (Drath, 2001). In this respect, leadership is not related to a person's dominance and power of influence as some traditional leadership approaches claim. Leadership is related to the way that people experience the challenges of facing daily events and making judgments in the moment of their interactions with others in organizations about these events (Cunliffe and Eriksen, 2011; Antonacopoulou & Psychogios, 2015). In this respect, leadership should be seen as a shared responsibility and social act rather than as the heroic figure that focuses on individual behaviours and characteristics (Murrell, 1997). In short, leadership is always a process of relating and relating is a constructive, ongoing and dynamic process of meaning making (Uhl-Bien & Ospina, 2012). We argue that leadership is a *never-ending meaning making story* that is located in the ways that organizational members act and interact with each other, attempting to influence organizational understandings and produce outcomes (Barge & Fairhurst, 2008).

However, what it is less known and comprehensive from the relational approach to leadership is associated with the 'how' of leadership process. It seems that there is a missing link regarding the ways that leadership is constructed as meaning making process. We suggest that this gap can be covered if we also consider different approaches of understanding social connection that can be found in brain science. We argue that leadership as a relational process of meaning making, taking place endless influence interactions of people within collective social entities, requires the mind awareness of leadership actors (leaders and followers). In particular, we suggest that relational leadership approach can be seen and understood better is we engage brain science approaches. In the next sections we utilize on consciousness approaches and social brain theory to demonstrate our arguments. We argue that consciousness helps us to be aware of our own subjective experience of events and processes, hence relational leadership experiences as described above. This in turn, can facilitate the leadership process itself. In addition, by putting on board social brain theory, we support the view that our brains are better fit to relational experiences and therefore relational leadership as such rather than traditional (hierarchical) leadership formalities. We conclude by suggesting the need for a relational brain approach to leadership.

The Mystery (?) of Consciousness

Within the few scientific debates attracting major attention from media and the public imagination, consciousness holds a prominent position. Article titles such as "Why can't the world's greatest minds solve the mystery of consciousness?" in 2015 on The Guardian (Burkeman, 2015) and "World's Smartest Physicist Thinks Science Can't Crack Consciousness" in 2016 on Scientific American (Horgan, 2016) portray the levels of fascination, but also sensationalism, that the concept of consciousness attracts. Media coverage aside, understanding consciousness, and its role

in human relations, might hold the key to upgrading the analysis and comprehension of leadership relations within organizations.

The main challenge of studying consciousness can be summarized in the question: can we ever fully reveal its purpose? This question has been dubbed as the Hard Problem of consciousness (Chalmers, 1995) and has been the leading conundrum for many in search of decoding consciousness. Chalmers (1995), separated the easy and the hard problems of studying consciousness, by stating that:

> "The easy problems of consciousness are those that seem directly susceptible to the standard methods of cognitive science, whereby a phenomenon is explained in terms of computational or neural mechanisms. The hard problems are those that seem to resist those methods." (p.4)

On the other hand:

> "The really hard problem of consciousness is the problem of *experience*.… It is undeniable that some organisms are subjects of experience, but the question of why it is that these systems are subjects of experience is perplexing… How can we explain why there is something it is like to entertain a mental image or to experience an emotion? It is widely agreed that experience arises from a physical basis, but we have no good explanation of why and how it so arises." (p. 5)

The soft part of the problem is about studying neural and other biological processes that are responsible for capturing stimuli, focusing our attention, controlling our behavior and integrating information cognitively or in general, various functions and abilities (Chalmers, 1995). The hard

part of it goes beyond function and is about subjectivity of experience: the fact that those functions could be done without we being necessarily aware of them as we do, but we are.

In essence, Chalmers' famous categorization in understanding consciousness is a continuation of a number of philosophers and scientists' argumentation since classical antiquity and especially ancient Greece, who separated between the physical and inner worlds (Phillips, Beretta, and Whitaker, 2014). Talking either about *psyche* or about *nous*, ancient philosophers were intrigued by subjective awareness and the fact that consciousness existed seemingly in separation from nature. These two worlds, nature and thought, body and mind, or more recently, brain and mind, has been called Dualism and it is central to the debate on consciousness. This Cartesian substance dualism, suggests "the mind and the body as two fundamental different "things", equally real and independent of each other… the mind and body are two different substances, the non-physical and the physical, and a causal relationship is assumed to exist between them" (Grankvist, Kajonius and Persson, 2016, p. 1). A very prominent advocate of Dualism is usually considered to be the French philosopher Rene Descartes who, in the 17th century, explored various Aristotelian notions, maintaining the dual nature of mind and body and developing his own version (Crane and Patterson, 2000). Although Chalmers (1995) does coincide with Descartes on the exact nature on dualism and also the fact that there are more dualisms than the original one (Phillips, Beretta, and Whitaker 2014), Dualism itself is not universally accepted. On the contrary, many believe, including us, that rejecting dualism might be the fastest and surest way of solving the hard problem of consciousness focusing on the real one, in terms of neuroscience, which was always and will be the soft one (Dehaene, 2014). The 'Divide and Conquer' method of modern Dualism needs to be abandoned (Dennett, 1996) if we are to produce meaningful and useful insights of consciousness, particularly for understanding the process of leadership.

Towards a Relational Approach to Consciousness : the rise of *Homo Relationalis*

The modern dualistic approach was about two main questions: *Why we are aware of our own subjective experience* (Hard Problem) and *How are we aware of our own subjective experiences* (Soft Problem). Although the second one considered as trivial (Chalmers, 1995) and ignored tarsfering the focus on the first one, there is actually still a lot of work to be done on the subject of function. However, before we turn onto main approaches of how consciousness works in the brain, we would like to offer a contemporary solution to the first one. This is because, it is the interplay of the why and how that makes consciousness so central for the relational approach of leadership process in organizations.

The difficulty in explaining the Why of consciousness might lie in the extreme importance that the western world is putting on individuality. The western notion of self has been found to be significantly more individualistic and ego-centric than in other cultures and this has a considerable impact on the subjective experience of westerners, including on their cognition and emotions (Markus and Kitayama, 1991). This acute focus on the individual and on the value of a single person as opposed to wider social units.

This individualist approach, laser-focusing on the person interests rather on communities or the multidimensional bonds within societies, is emerged from the concept of what has been called the *Homo Economicus* view of the human kind. *Homo Economicus* is an individualistic conception of humanity, void of any social dimension, which considers as natural law that the self-interest of one person is the interest of all people, leading to an ultra-egocentric model of decision making and behavior (Pesch, 2002). Actually, the *Homo Economicus* concept can be also found in traditional leadership studies, and it is consistent with a positivistic epistemology and a Cartesian dogma of a

clear distinction between mind and nature (Bradbury & Lichtenstein, 2000). It assumes that individuals have a "knowing mind," as well as that they have access to the contents of their mind (Uhl-Bien, 2006) that they can control (Dachler & Hosking, 1995).

Dipped into neoclassical economic thinking and, most paradoxically, bound by an extreme passion for rational decision making that always aims to maximize results and minimize costs, the *Homo Economicus* model of humanity is fading away: new models such as the *Homo Reciprocans*, the *Homo Sociologicus* and the *Homo Socioeconomicus* have emerged as an effort to understand better the complex interrelations between people (O'Boyle, 2007). In a similar vein, we propose the term *Homo Relationalis* to show that it is not the individuals as single agents, isolated into an egoistic mind driven by rational self-interest that can help us improve our understanding socioeconomic interaction. But it is the relational aspects (interconnectivity, interrelatedness and interaction) between us (*Homo Relationalis*) that needs to be factored in if we want to explain and understand further leadership process.

Individuality, self-interest, ego-centricity and ultra-rationality have been the guiding forces that seem to have shaped, and still shape, our approach to consciousness. If we continue to look at consciousness as a mechanism that creates subjective, thus individual, experiences then we might never understand its value and purpose. However, if we look at consciousness from a more socio-centric and relational view of humanity, taking into account the vital role of interdependency, we will probably start unraveling its true nature faster and deeper than ever before.

The main problem of consciousness within the *Homo Economicus* view is that since consciousness, according to this view, is responsible for our subjective/individualistic experience and for our self-centered, ego-driven decision making and behavior, then what would happen if

those two exact processes were found not to be depending on conscious thinking? What would then consciousness be for? Our own personal survival or something else? According to Halligan and Oakley, (2015) the role of consciousness seems to be linked to the function of the brain. (

> "… the more that is discovered about consciousness, the less obvious its role appears to be. For example, measurements of brain activity reveal that muscles and brain areas prepare for an action, such as a reaching out for an object, before we are even aware of our intention to make that movement. As noted by the psychologist Jeffrey Grey and others, consciousness simply occurs too late to affect the outcomes of the mental processes apparently linked to it." (Halligan and Oakley, 2015, p. 26)

The fact that our brains prepare to take a decision much earlier than when our consciousness kicks in, brings down the self-interest foundation of the *Homo Economicus* approach and it has the ability to shed bright light into the (manufactured?) mystery of consciousness, or its hard problem. They continue:

> "So where does this powerful sense of self come from? We suggest it is the product of our unconscious mind, and provides an evolutionary advantage that developed for the benefit of the social group, not the individual." (p. 26)

According to authors, our unconscious mind broadcasts all info and decisions to our consciousness that then creates an individual construct necessary for developing strategies of adaptation in the real world. Strategies such as: predicting behaviors of others, disseminating selected information and being able to adjust attitudes in relation to various on external stimuli. These means that

consciousness is a trick, a product of our unconscious part of the brain in order to assist us in adapting to, and interacting with, our peers in order to evolve together as a group not as one.

This approach captures vividly the emerging strong argument for consciousness as an evolutionary advantage, which was first presented by Mercier and Sperber (2011). . This theory suggests that, based on the importance of human communication for the species survival and growth, the ability to develop individual, conscious thoughts is for persuasion purposes and not for ego-centric decision making. Its role is inherently social.

The evolutionary advantage of a collaborative, relational and socially adaptive consciousness has been found to hold true from other scientific disciplines as well. Evolutionary anthropology, primatology and archeology have discovered that *homo sapiens sapiens',* our species', unique ability to form multilayered social relations and to collaborate within highly complex and coordinated group activities with genetically unrelated individuals makes the single most important difference in species survival. Marean (2015), Director of the Institute of Human Origins at the Arizona State University, believes firmly that Homo Sapiens' extraordinary ability to cooperate, what he has called as *hyperprosociality,* which to him is not a learned tendency but a genetically encoded trait, was what helped our species dominate against other related species, such as the Neanderthals. Although cooperation can be also observed in primate species, our unique ability to collaborate in large, well-organized groups by employing a complex morality competence based on reputation and punishment was what gave the edge to humankind (De Waal, 2014). Last but not least, psychology is also revising some of its long-held beliefs on individuality and consciousness towards a more socially oriented approach. One of the most cited tests for studying self-consciousness, especially in the developmental process is the sticker and mirror test, or otherwise called the mirror self-recognition test. In the early 1970s, psychologist Gordon Gallup

Jr. wanted to measure self-awareness in non-human species and compare those to humans (Gallup, 1970). He devised a test where an animal is marked on the face with paint or a ticker and then taken in front of a mirror. If the animal, or human child, reaches for the mark on their own face instead of the mirror then they passed the test. Apart from humans very few other species pass the test proving that self-awareness is a function of advanced cerebral processes. But is it so? Do human children reach for the mark in their faces driven by self-awareness, individualistic processes in our minds? Does this action declare "I am" proving that from a young age the healthy brain knows that it exists separately from others? Until recently, the answer was positive. Not so anymore.

Rochat (2009), conducted the mirror study in non-western societies with surprising results. Instead of kids reaching for their faces, in many instances, kids were just perplexed of what they should be doing with such an unexpected situation. In particular, out of 104 kids in a Kenyan study only two removed the sticker while the rest stayed confused. He claims that:

> "… the passing of the mirror test in fact indicates much more than self-recognition per se. It tells about the representation of a normative self, the sense of how we *should be* compared to others. This normative sense of self accompanies mirror self-recognition from the outset, and develops rapidly…" (Rochat, 2009, p. 215).

For Rochat (2009), recognizing ourselves in the mirror is not about individuality, about 'us against the world' or about finding our unique personal place in this world. Quite the contrary. It is about active social engagement and formulating images of ourselves based on what others think of us! It is an outside-in test and not the other way around. This and other scientific developments from within psychology or other related or not sciences pointing to a socially driven sense of self, have

led many in psychology, such as Professor of Psychology Bruce McFarlane Hood to claim that the sense of a concrete self is an illusion (Hood, 2012). In reality, Hood claims that our self-awareness is a fluid concept dependent on our surroundings, constantly shaped and reshaped by it. To us, it looks like a coherent, ego-centric, internally-driven function. And this is the illusion. The self is actually socially and environmentally defined in our early years to help us become socially functioning and contributing persons, constantly learning and adapting to those around us. The narrative in our minds might seem strictly individual but its purpose is ultimately social. This will be analyzed in more detail at the last part of this paper. Now it is important to link the notion of a collective self to leadership.

The notion of self-awareness seems to be core in many relational leadership studies that argue that we are aware of ourselves as leadership actors (leaders and/or followers) based on a relational process with others. Lührmann and Eberl (2007) argue that leadership identity is co-constructed in the process of interaction between the leader and the follower. Similarly, Sluss and Ashforth (2007) claim that the role based identities of a leader and a follower interactively "influence the [leadership] relational identity such that the [leadership] relational identity is more than the sum of its parts" (p.13). Moreover, follower's self-awareness is affected by leadership process itself, contemplating the effects on follower's attitudes towards leadership (Van Knippenberg, et al, 2004). In other words, followers' self-conception in the leadership process is formulating in a dynamic way within the process and influenced by it. Therefore, leadership actors through the leadership process co-create a relational leadership identity.

In conclusion, adopting a more social and interpersonal view of consciousness, self-awareness and evolution has a cascading effect on how we view our personal place in life and of course ourselves as leadership actors. First, if my mind is not all about me then consciousness needs not to be

magical or mysterious. It is an inherent brain phenomenon that allows me to understand, relate and interact with those around me appropriately in order to achieve various types of goals together. Second, if we are not as individuals, self-interest obsessed and ultra-rational as the *Homo Economicus* view wanted us to be, then the way we set our minds to work with others should be more open, assertive and collaborative than before. Above all, if consciousness is not a mystery anymore does it need all this extraordinary attention and sensational media coverage as it currently gets? Does it need supernatural, immaterial and magical explanations to make it understood? It seems not. Instead of looking in exotic places and theories in explaining consciousness we should maybe just look around, to other human beings, to see the obvious solution. If we do so, we will maybe discover that the special attention to the precious and elusive concept of consciousness was not fully justified all along. Not from the perspective of rationalists at least. As Gray, (2015) elegantly puts it:

> "Rationalists like to think the unconscious part of the mind is a relic of our animal ancestry, which further evolution will enable us to leave behind. But far more than conscious thought, it is our animal mind that makes us what we are. Science, art and human relationships emerge from processes, which can be only dimly aware. The creative powers that are most essentially human would not necessarily be enhanced if humans were more fully conscious" (p.154).

Our consciousness emerges unexpectedly, not as the pinnacle of human cognition and of our place in the universe, but as a product of our brains, an illusion even, that helps us create and respond to dynamic social environments and move forward more collectively as humans, professionals, leaders and followers than individually. But in order for this to happen, we needed the right type of a brain. A 'social' brain to be exact. We argue that our brain is mainly a social organ that

emphasizes on connecting, interacting, trusting and cooperating that it is also confirmed by the evolution of human kind (Dimitriadis and Psychogios, 2016). The idea of relational leadership is based on the same foundations. We argue that as leadership actors we connect to each other in endless, dynamic, interrelated ways in various contexts that affect various outcomes. So, a social brain is an essential part of relational leadership. Leadership it is not just social constructed, but social brain constructed process.

Social Brain Theory & Leadership

If you ask the opinion of someone on the species that show the highest level of collaboration between their members, the typical answer that you will receive is: bees and ants. Bees' and ants' ability to collaborate within their communities harmoniously and relentlessly attracts the attention of the public. . A rudimentary look on the internet and social media, as well as in popular culture, will demonstrate this mental position of those two species as the masters of cooperation. But is this really the case? If cooperation is genetically predefined, are humans a collaborative or a competitive species?

The admiration of bees and ants as the ultimate cooperative machines is based on a fundamental misconception. Actually, those species do not have the decision power to choose collaboration or competition, but are directed by chemicals to collaboration (Gamble, Gowlett and Dunbar, 2014). In this chemically-induced tyranny of co-working, those species are born to cooperate with specific members of their community and for specific reasons. In an analogy to human societies, organizations would look more like totalitarian systems. Actually, not counting for humans as highly collaborative species and impulsively choosing bees and ants reveals the damage done by the *Homo Economicus* mindset that focuses exclusively on competitive struggle, self-interest and

isolative individuality. Looking at the evolution of *Homo Sapiens Sapiens* in comparison with other species, and especially with great apes, and studying brain size in relation to group size, has led to the breakthrough theory of the Social Brain. This theory suggests that socializing, collaborating and co-existing in communities depends on brain size, especially frontal lobe cortical areas (Dunbar, 1998). Humans have disproportionally big cortex/body ratio and this allows them to form larger groups with complex relations. It can be argued that, according to the Social Brain theory, higher neuro-complexity leads to higher social-complexity. Dunbar (1998) is actually famous for his optimum numbers of various social groups to have close ties between their members - which is 5, 15, 50 and 150 people depending on closeness of relationships-. Dunbar's arithmetic was found to hold true even in our highly networked era dominated by the internet and social media (Gamble, Gowlett and Dunbar, 2014). And it is not only about quantity, but about quality of relations too.

The human social brain allowed to behave in extraordinary ways. Based on a more complex cortex humans have the ability to reciprocate, collaborate, empathize, trust, form intelligent analysis of social situations, but also deceive and fight more cleverly than other species (Dunbar, 1998). Unfortunately, it is the latter group of those social behaviors that initially attracted many scientists who, by observing children's ability to get what they wanted from their parents, labeled these abilities as Machiavellian[2]. Again, applying a typical *Homo Economicus* mindset, people choose to see manipulation, social deception and trickery in human children's behavior instead of social cohesion, social intelligence and social co-existence. This narrowest of views though has been later revised to include all the socially positive behaviors creating a more realistic picture of the

[2] This characterization relates to the 16th century book The Prince by Niccolo Machiavelli (2011) which has become synonymous to calculative manipulation, according to thesaurus.com (2016).

social brain's behavioral aspects. Interactivity, interdependence and mutual understanding are core functions of the social brain since a very early age, leading to healthy development of the human mind as we grew and operate in complex human societies (Hood, 2011).

Two key components of the social brain theory is that first, brain processing capacity determines breadth of social relations and second, that the human kind has a unique ability to understand intentionality in a much higher level than any other species. Concerning the first, Gamble et al , (2014) observed that cognitive load, the brain's ability to process information, is responsible for the number of people we can associate with in different social setting (. Since with every new acquaintance our brain will have to process new information, and even more information for keeping regularly in touch with this new person, our brain's processing capacity will ultimately determine the ability to maintain that relation. Spunt and Lieberman (2013) have found that when cognitive load increases, our automatic mentalizing capacity, our ability to understand and connect to others, drops drastically. Thus, relationship building becomes harder.

Our brain's expanded cognitive load is a blessing, when compared to other species, but also a curse because of the limits it sets for further social bonding. Concerning the second, unlocking each others' intentionality is a building block of social interaction and since human's can manage up to six orders of intentionality, we are uniquely champions in the animal kingdom (Gamble, et al , 2014).

Our intentionality-decoding skills are so advanced when compared with other species that they alone have been deemed enough to explain the Why of consciousness. Neuroscientist Michael Graziano suggests that we have consciousness in order to detect the consciousness of other people and thus to be able to make assumptions about their behavior. He stated (Guzman, 2015):

> "We have this kind of intuitive or gut impression that the other person is aware, has a mind, an inner experience. And we use that to help us understand other people, to help predict their behavior, to interact with them better. And we do this constantly. In fact, we're very much wired to see awareness in other things."

The Social Brain theory supports further the relational answer to the Why of consciousness. The evolved human brain is set for dynamic and complex relations that are made possible through advanced intention-reading skills unique to our species. Therefore, answering the Why of consciousness in this manner leads to important insights into the How of consciousness too. Attention Schema Theory explains the inner-workings of awareness as an attention system that utilizes external and internal stimuli to create subjectivity, preparing the individual to act effectively to various situations (Graziano and Webb, 2015). Under this approach, consciousness is a brain mechanism through which we create mental models of reality in order to focus where needed the most. These mental models are both created by attention and result in attention. The ultimate aim is to understand other people and to respond appropriately.

The Why and the How are coming together, bridging the gap between purpose and function, when consciousness is viewed as an evolutionary mechanism that enables humans to navigate effectively and efficiently through dense and multifaceted relations within families, friendships, institutions, communities and societies. If this is the case, then wouldn't be logical to expect that leadership in modern organizations is guided by principles of empathy, collaborating, caring and trust? If the role of consciousness is to promote interdependence and interactivity, wouldn't leaders be in the forefront of relationship building and maintaining within companies? It seems not.

Beyond Egoism and towards a Social Brain-Constructed Relational Leadership

Leadership, evolutionary speaking, is about creating appropriate conditions and trusting relationships for group members to contribute the most they can in the group's mission. These conditions include trust, care, protection and cohesion as necessary requirements for effective leadership (Brower *et al.*, 2000; Uhl-Bien *et al.*, 2000). Traditionally, was the job of a leader to provide support and safety to group members in order for them to feel liberated enough to perform their tasks in the most creative, passionate and successful way. This community-oriented approach to leadership was found to be instrumental in how pre-historic tribes lived and survived in harsh environments. Sinek (2011) utilizing a number of sciences, such as neurosciences, evolutionary biology and anthropology, has convincingly argued that leadership in modern companies should create circles of trust within an organization in order for its members, and the organization itself, to flourish. He claims that the negative image of big business in western societies is exactly because of the unnatural type of leadership they apply. When leaders look only after their own interests, ignoring the welfare of their employees and the society as a whole, they do not act as our brain expects them to, based on millennia of evolution, and thus, negative attitudes develop towards them. We argue that based on the relational aspect of leadership true leadership actors are caring for each other using their consciousness as a tool for developing of in-group collaboration, interdependence and trust. These should be the key relational bond in a continuous process of interaction among organizational members.

However, current evidence mainly from western societies they show something different. The fact that business, as a societal institution, has an unfavorable image within the wider global population is well documented. The annual Trust Barometer study by Edelman (2016), conducted in 28 countries with more than 33000 respondents, found that increasingly less people in the non-elite

segment of the sample are showing trust to businesses. This trust inequality seems to follow income inequality and poses important threats to civic stability. As Edelman (2016) explains in the study:

> "For the past seven years, in the wake of the Great Recession, the overwhelming majority of business leaders have tended to focus on their enterprise and short-term performance. The time for that narrow focus to end is now. Trust inequality has many negative consequences…". (, p 5.)

In a similar poll by Gallup (2016), only 18% of respondents in the US showed confidence in big businesses compared to 73% for the military and 68% for smaller businesses .

Corporate leadership seems to have gone exactly the opposite way of an anthropological and social brain-based leadership. *Homo Economicus* has turned leadership to a Machiavellian instrument of deceit, manipulation and self-preservation. Essentially, leadership is turned into something that psychopaths could do uniquely well. Too extreme? A recent study has found that one out of five CEOs (formal leaders) are psychopaths (Agerholm, 2016). This number, according to the study, is equal to prison populations. This is an alarming finding, having in mind that the percentage in the total population is around 1%. Similar insights can be observed in other domains. Both the empathy deficit, the drop in overall empathy levels (Colvin, 2015), and the increase of narcissism (Twenge and Campbell, 2009) in the wider population have been much publicized, (Northwestern, 2006). These intriguing facts seem to contradict the previous analysis in this paper on the nature of consciousness and the human brain as a pro-social organ. If we have been evolving to form dynamic and symbiotic relations, how come we are led by psychopaths and at the same time we start losing our hardwired empathic capacities? The answer is in the brain.

Our brain is plastic. New neuros are generated every day, even at a very old age, and old neurons form new connections between themselves, or severe old ones, depending on how much and how often these connections are used. These two processes, namely neurogeneration and the creation of new synapses between neurons, are fundamental to neuroplacticity (Breznitz and Hemingway, 2013). How we use our brains further enhances or weakens our mental abilities. In the case of the brain, this actually means that the software can alter the hardware, something that does not apply to manmade devices such as smartphones and laptops (Dimitriadis and Psychogios, 2016). If the requirement for managers to progress within corporations is to adopt psychopathic attitudes and behaviors, repetition will lead to permanence. Neuros that fire together, wire together (Lowel and Singer, 1992). Over time, by suppressing our empathic neural networks and boosting the narcissistic ones, we reshape our brains to mimic ones with anti-social, misanthropic and ultra-egoistic traits. The more our corporate cultures require psychopathic and narcissistic managers (leaders) the more the brain of employees (followers) will adapt to the situation. Thus, although wired for social brain-centric leadership, leaders (and followers) choose to utilize more often and with stronger efforts their non-collaborative, non-trusting, non-coexisting style resulting to brains reacting more psychopathically.

If we are to embrace the full scope of our co-operative consciousness and inter-depending social brains, we need to emphasize on brain-adjusted relational leadership. A dynamic, co-created type of leadership based on relational ties of all leadership actors (leaders and followers) rather than on obsession with self-interest. A type of leadership that shows a better understanding of the inner-workings and, especially, the purpose of key brain functions. A type of leadership that will bring about trust and collaboration within organizations, and that, ultimately, will unleash the true power of the *Homo Relationalis*. .

Conclusions: Cognitive styles and Leadership/Followership Duality

Relationships are not one aspect of leadership. They are not even the key aspect of leadership. They are leadership. The latest approaches to consciousness and the social brain theory are the evidence. However, in order to understand further the brain aspects of leadership actors, we argue that we need to make a step back, exploring through brain science the leadership-followership duality. Therefore, in this final section by focusing on consciousness, self-illusions and cognitive styles we seek to open the research agenda for further understanding of the self-dyadic relationship (leader-follower) that consist the basis of the social brain constructed relational leadership.

The scientific debate on the evolution and function of consciousness has had intriguing side-effects on other topics, most notably on the concept of the self. The *Homo Economicus* mindset applied to consciousness as the epitome of our individuality, suggests that humans have a strong grip over their self, which they understand and control (Pesch, 2002). Most importantly, people have one, solid self, or personality, which can be captured using quantitative tools like surveys. As with consciousness, the problem with this approach is that it does not take into account significant findings from neuroscience and other brain-related sciences pointing to a discrepancy of what we think about ourselves and what is actually happening. This discrepancy, in relation to the concept of the self has been called the Self-Illusion (Hood, 2011). Hood (2011), explains that the sense of authenticity of an essential self within us, that feels true and unified: "[t]his core self… is, however, the illusion" (p 82). And he claims :

> "[W]ho we are really comes down to those around us. We may all be born with different biological properties and dispositions but even these emerge in the context of others and in some cases can be triggered or turned off by environmental factors.

> We may feel that we are the self-treading down the path of life and making our own decisions at the various junctions and forks, but that would also assume that we are free to make choices. However, the freedom to make choices is another aspect of the self-illusion". (pp. 82-83)

The phenomenal experience of a subjective reality and the absence of a core self is also discussed in depth by Metziner (2003) who suggested the Phenomenal Self-Model concept of the Self-Model Theory of Subjectivity. Metziner (2009) claims that "[t]he phenomenal Ego is not some mysterious thing or little man inside the head but the content of an inner image- namely, the conscious self-model, or PSM. By placing the self-model within the world-model, a center is created. That center is what we experience as ourselves, the Ego" (p. 7). In other words, humans are not in direct contact with either the external nor the internal words, but they do have a representational model that feels unique and real which is much more socially-oriented and socially-derived than expected.

The point to make about the ego, or self, is that it is more of a feeling than a fixed reality. The human brain adapts its reaction in different settings and switches off and on behaviors based on genes, past experiences and social triggers. Although it feels as a continuous and consistent process, the self is an illusion and people's behaviors depend more on adjusting social brain processes than our sense of a solid self. In order to apply this approach to the relational leadership process, cognitive styles need to be discussed.

Different brains show attention and process incoming information in working memory in different ways. The speed and overall efficiency of these constitute what is called cognitive style (Happe and Firth, 2006). In organizational sciences, the concept of cognitive styles was popularized by the Cognitive Styles Index by Allinson and Heyes (1996) which proposed a questionnaire for

measuring managers and employees in two variables, analysis vs. intuition, viewed as being distinct cognitive styles. Few years earlier, the Cognitive Flexibility Theory (Spiro, 1988) emerged in pedagogy, to describe efficient learning under challenging condition. Cognitive flexibility is contrasted to cognitive rigidity when attention and perception models hinder than allow for learning and behavioral change (Tchanturia et al., 2004). The concept of cognitive flexibility and rigidity were popularized in the business world by the work of Developmental Psychologist Carol Dweck (2008) and her publications on growth vs fixed mindset (Dimitriadis et al, 2018). Creative styles have been also been linked to create thinking, problem-solving and innovation with the distinction of divergent creative cognitive style vs. divergent creative cognitive style (Chen et al. 2015). In leadership-related literature, the majority of work on cognitive styles has been focusing on creative organizational output and leadership (Zhang, 2011) rather on leadership in general, as shown by the wider use of Kirton's adaption-innovation theory (Stum, 2009), which made the distinction between the adaptor cognitive style vs. the innovator cognitive style (Jain and Jeppe Jeppesen, 2013).

Based on the analysis of consciousness as a social tool, and the social brain and self-illusion theories, we recommend a new cognitive style distinction between the person as a leader vs. the same person as a follower (self-dyadic), with both styles being active within the same time. This means that there is a need in leadership studies to adopt a neuroscientific perspective, where the self of a person within an organization changes to fit into a leadership role, the leadership cognitive style vs. a follower role, the follower cognitive style, based on the situation. Since the presence of an authentic, one-dimensional, continuous and rigid core self has been deemed as a subjective feeling rather than a scientific reality, the change between leadership and followership cognitive styles, each with its own attentional and perceptual distinct processes applied even within the same

day, but with different people and overall setting. Although still a hypothesis, such a distinction would help leadership theory progress beyond the standard view of a person as either a leader or a follower (both of them leadership actors), unlocking complex processes that might explain better the dynamic reality of multilayered relations within current organizational realities.

From an academic perspective, delving into consciousness theories, social brain and self-related theories, will help us look into the specific mechanisms of awareness, reality and meaning creation within the context of leadership actors (leader-follower) relations and the leader/follower duality, and thus, develop further the Relational Leadership Theory (Uhl-Bien, 2006). From a practice perspective, leadership actors will understand better how their own view of reality and the things they focus on influence their relations with other actors as well as how leadership actors' attention models can do the same. At the same time, leadership actors s will have a better view of how their leader/follower automatic cognitive styles, influence their relations and decisions.

Without any doubt, more conceptual and, of course, empirical studies are needed within the leadership discipline to establish the exact processes of consciousness in leader-follower relations, or as we called them in this paper the leadership actors' relations. Future leadership research should be open to new ways of studding leadership not abandoning the traditional socio-psychological approaches, but introducing new innovative combined methodologies. Leadership studies based on neuroscientific approaches as well could show the way ahead. For example, a series of leadership studies that will also focus on main biological aspects can be one category. Another category of future studies could be associated with a series of experimental research, not only from the behavioral science point of view, but also from the brain science one. Current neuro-technologies can provide huge opportunities to develop experiments and observing the actual human brain that in turn can enhance dramatically our ability to understand human relations. In

other words, the connection of leadership with neuroscience provides endless opportunities to unlock the hidden forces that affect the way that we relate to each other and of course the way that we are involved in the leadership process. Ultimately, both leaders and followers can use new insights to improve their relations and achieve more together, in a true collaborative and mutually understanding fashion. They should do this by being more confident for their socially-driven consciousness and self!

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