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Some Thoughts on Metaphor in Cognitive Psychology and Zubiri's Sentient Intelligence

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Abstract

Cognitive psychologists have advanced a view calling for three fundamental premises: (1) mind is embodied; (2) there is a cognitive unconscious; and (3) thought is metaphorical. It is a physicalist account of cognition and as such asserts that there is a material basis for all entities taken as real within any scientific theory. Zubiri's philosophy of sentient intellection has elements in common with this view but exceed it in breadth and depth. Zubiri bases his philosophy upon a central reality: the intellective human psyche—a modernized version of the rational soul— yet accepts the sentient nature of human intellection. The importance of metaphor is an implicit dimension of sentient intellection. When we avail ourselves of metaphorical thinking, we are enabled to illumine Zubiri's metaphors of intellection: we are *thrust* by reality, must *pause* and think, and comprehend the in-depth reality of things. In this thrusting, we are *impelled* and *retained*—but only after *stepping back*—by the real thing in its field moment. What this real thing is, in reality itself, is a problem *thrown* into our path by field reality to actualize and eventually comprehend. These metaphors present intellection as a dynamic and forceful dimension of human apprehension of reality and are based upon physical and bodily actions.

Resumen

Los psicólogos cognoscitivos han adelantado una teoria que requiere tres premisas fundamentales: (1) la mente es encarnada; (2) hay un cognoscitivo inconsciente; y (3) el pensamiento es metafórico. Es una teoria fisicalista de cognición y como tal afirma que hay una base material para todas las entidades tomadas como real dentro de cualquier teoría científica. La filosofia de inteligencia sentiente tiene elementos en común con esta teoria pero lo excede en anchura y profundidad. Zubiri basa su filosofia en una realidad central: el psique intelectivo humano (versión modernizada del alma racional), pero acepta la naturaleza sentiente de la inteligencia humana. La importancia de metáfora es una dimensión implícita de inteligencia sentiente. Por usar el pensamiento metafórico, podemos illuminar las metáforas zubirianas de intellection: somos *lanzados* por la realidad, tenemos que *detenernos* y debemos pensar, para comprender la realidad profunda de las cosas. En esto lanzamiento, somos impeledos y retenidos—pero sólo después de un tomar distancia—por la cosa real en su momento del campo. Lo que esta cosa real es en realidad es un problema lanzado en nuestro camino a través de la realidad del campo para actualizar y en el futuro comprender. Estas metáforas presentan la intellection como una dimensión dinámica y poderosa de aprehension humana de realidad y se basan en acciones físicas y corporales.

I. Introduction

The field of cognitive psychology, like all domains of psychology, is not a unified approach to comprehending mental or psychological reality. One of the primary challenges facing this field is the diversity of systems of reference used by researchers;

another is how, based upon the twin theses of *scientific realism* and *physicalism* (or *naturalism*) we can account for cognition. Though most of the writers in this field discuss mind and consciousness, there is no consensus as to what these referents actually refer to other than processes that are essential for intellective understanding. If there is any agreement from a scientific approach to cognition, it would be in one area—a mind-brain parity. Brain states are mind states; brain gives rise to mental processes. The amount of literature written on, and depth of research that has gone into cognitive processes and cognitive development is vast and broad, diffuse and difficult to digest.

While I do not ascribe to many of the assumptions and conclusions of cognitive science, I do think this approach has provided insights into the processes of intellective understanding of reality. I do fundamentally agree with the neuroscientist Gerald Edelman who asserts that, while it is important to bring mind back into relation with the body, the cognitive approach of relying upon mental *representations* and computer analogies—structures, processes, syntaxes, computation, etc.—is insufficient because it overlooks the complexity of the brain as a biological organism. Edelman writes:

> But I must also add that the cognitivist enterprise rests on a set of unexamined assumptions. One of its most curious deficiencies is that it makes only marginal reference to the biological foundations that underlie the mechanisms it purports to explain. The result is a scientific deviation as great as that of the behaviorism it has attempted to supplant. The critical errors underlying this deviation are as unperceived by most cognitive scientists as relativity was before Einstein and heliocentrism was before Copernicus.[1]

While this work of Edelman's was published only 15 years ago, it was not accurate that all cognitive approaches ignored the findings of neuroscience. It may have been dominant, but was not total. It is still true, however, that it is obvious to thinkers in this field that mental processes can be discussed as if they were computations following algorithms. Edelman fundamentally agrees with Lakoff and Johnson's cognitive semantics and avails himself of it in his writings on consciousness.

One who is familiar with Zubiri's philosophy of intelligence may read this and say, "Oh, so it was *obvious* that the mind works like a computer—but it is *only obvious*!" Zubiri presents such a discussion regarding Newton's laws, and asserts that *obviousness* is a mode of intellective actualization, but it is so only of an *aspect* of the reality in question. [2] It is obvious that the human mind has aspects like a computer—after all it was the human mind that created it! It is plausible that it is so—"as long as the contrary is not evident." [3]

Zubiri's noergics presents us with a different approach to cognition, as noesis, which in his view "is only a dimension of apprehension."[4] Whereas in the field of cognitive science the emphasis is upon one dimension of apprehension, Zubiri's philosophy enables us to comprehend it more fully. In Lakoff & Johnson's approach to cognitive psychology, the term *cognition* is used:

> …in the richest possible sense, to describe any mental operations and structures that are involved in language, meaning, perception, conceptual systems, and reason. Because our conceptual systems and our reason arise from our bodies, we will also use the term *cognitive* for aspects of our sensorimotor system that contribute to our abilities to conceptualize and to reason. Since cognitive operations are largely unconscious, the term *cognitive unconscious* accurately describes all unconscious mental operations concerned with conceptual systems, meaning, inference, and language.[5]

This definition is not accepted by all thinkers in this field. Cognition, as a term, is thus very broad and scientifically it be-

comes problematic for just this reason. There is no agreement what it actually means—even among philosophers who speak of cognition.

While there are similarities between the findings and assumptions of cognitive psychology and Zubiri's noergics, his philosophy exceeds in scope and embraces more fully the biological dimension of intellection. It does so, more importantly, by not reducing it to the brain or body. The intellective human psyche, i.e. the rational soul, is the reality that apprehends. It must in its present corporeality use the body and its brain to do so, but this psyche is a *sui generis* reality that is not even considered in cognitive science. For Zubiri, one cannot speak of psyche without speaking of organism (body) since the human substantive reality "doesn't 'have' psyche and organism but 'is' psycho-organic, because neither organism nor psyche have by itself any substantivity; only the system has." [6] I am not herein discussing the data collected in the attempt to substantiate cognitive science, but considering the supporting philosophy.

In this article, I will discuss an approach to cognitive psychology and brain science that has been spurred by the works of cognitive linguists Lakoff and Johnson. Their work on metaphor has been used as a system of reference in many fields of psychology, linguistics, literature, neuroscience, economics, politics, and even sociology. Their assumptions are, I will demonstrate, resonant with Zubiri's philosophy of intellection in that they take seriously the embodied nature of human cognition, accept that sensory organs contribute to it, and embrace neurological findings. Their work on metaphor will be used to illumine the dynamic nature of Zubiri's philosophy of intelligence, and Zubiri's philosophy will be used to draw out elements of their approach to cognition that are inchoate. Zubiri's philosophy opens a path to explore the in-depth fundament[7] of what cognition *could be* that cognitive psychology does not.

II. Thinking with metaphors

In this section I will weave back and forth between considering how metaphors are used in Zubiri's philosophy and that of cognitive science and domains inspired by it. I will present some salient metaphors from these approaches without discussing them and I will discuss the approach to metaphor advanced by Lakoff and Johnson and apply it to Zubiri's noergics.

In Zubiri's philosophical works, he discusses metaphor only a little, though he uses metaphors abundantly. Intellective actualization, when there is a preponderance of evidence, has a weight, 'pondus'. This form of actualization comes with a preponderance of traits with respect to a simple apprehension. It comes after an ambiguous actualization which is realized as doubt—one is doubtful about what is being actualized (is it a dog or a shrub). When one gains more evidence of what the thing is, the actualization is weighted more one way than another (it is a shrub, not a dog) and one affirms it as an opinion. He tells us that this weight "is not just a metaphor introduced ad hoc." [8] Often he uses the metaphor of light, informing us that "metaphor is one type of reasoning about things, among others" [9] which can lead to a metaphorical measure of reality.

Yet, an undeveloped line of inquiry is how metaphor is more than one type of reasoning—it is a primary form of it and it does not just lead to a metaphorical measure of reality, but provides the scaffolding for our intellective quests into the in-depth foundation of reality. Every intellection, Zubiri expresses, has two moments: an individual moment and a field moment; each real thing is actualized as real (primordial apprehension), and as what it might be 'in reality' (sentient logos) respective to other real things. This is 'blue' respective to that which is 'green'. The third mode of intellective actualization is when we affirm what something is 'in reality itself'. A previous intellection of what something is as real and in reality, takes a new mode as being the intellective support of what something

is in-depth, what it is 'in reality itself.' It "is now the voice of the reality in depth":

> That which was previously intellectively known then has the modal function of being that in which this voice resounds. In what was intellectively known in the field resounds the voice of what the real is in depth. This resounding has two aspects. On one hand, it is the sound itself, i.e., the notes of what the field reality, as reality and in reality, is in depth. And this is not some vague metaphor, because to be resonant is in this sense to "notify" reality in depth. And notification is a mode of intellection. But on the other hand, the resonance has a second aspect. Things not only notify, but are also that in which what is notified resounds. They are not just resonances of the real in depth, but also the resonators themselves. And qua resonators, these real things take on that new modal function which is to be principle and canon. [10]

As an explanation of what color is in-depth, we have the photon and electromagnetic explanations. Since things give us pause to think, we intellectively search for what is beyond our primordial apprehension—as the photon and electromagnetism is—as well as every other scientific concept that is constructed as an explanation, and forms of literary fiction. We intellectively take concepts, precepts and fictions (all of these being simple apprehensions) and using these as supports, inquire into the in-depth reality of what we apprehend and affirm.

Metaphor, as currently presented and understood, is a structural feature of human discourse and thought. These metaphors derive from 'supradiscursive' and 'subdiscursive' domains: the former is from the 'top-down,' from ideology to various forms of knowledge critique—holism, paradigm shifts, ideas of chaos (in the scientific sense), etc.; the latter derives from 'bottom-up' from the body and our embodied mind. [11] Using Zubiri's language, we can assert that metaphors are one method of declaring what something is in reality, i.e. one mode of *logos*. Though he does not discuss logos as a method, as his focus is largely limited to method as a path of reason, he clearly affirms that logos is such. "Method is not limited to any special way of access to things: the senses quite as much as the logos are methods."[12] Therefore, I affirm that metaphor is a primary method of logos, of creating simple apprehensions.

As a primary mode of logos, metaphor fulfills a vital function in our sentient intellection—it allows our imagination to conceive what things 'might be' in reality. Conception is a pregnant notion, full of possibilities of what something might be:

> A concept is not something primarily logical but something primarily real; it is the "what-concept". A concept formally and physically involves reality; it is "the" physical reality itself as if it were this "what": we conceive what a thing might be in reality. Reality itself, I repeat, is not an intentional but a physical moment, the moment of reality apprehended in primordial apprehension. A concept is, then, reality terminated in a free "what". Hence it is not "concept of reality" but "reality in concept". Then the simple apprehension in respect to intellection at a distance is conception. The concept is what is conceived in the conception. This is not tautological: the concept is the "what" of a thing reduced to a mere terminus of conception. [13]

Without metaphor, scientific progress would be greatly impeded; without metaphor, humanity would not be able to conceive nor to listen to the voice of what things are in reality itself—poetically, religiously, economically, linguistically, anthropologically, theologically, etc. Without metaphor, Zubiri's philosophy of intellection would not help illumine us. It is as if each *forma mentis*, each type of mentality, avails itself of metaphorical intellection *in order to know the depths*. Metaphor in poetry and literature is well documented; theologically and religiously it is clearly

expressed; the fields of the sociology of knowledge and knowledge dynamics highlight this clearly in the sciences and social sciences; cognitive psychology as well as other forms of psychology affirms this as well. Metaphor is a pervasive and necessary mode of sentient intellection.

Metaphor takes some reality from one domain, the *source* domain, and applies it to the *target* domain. In doing so, one derives the metaphor from the field of reality, that is, from the field reality of a given thing. This derivation becomes the support, or foundation, for what the thing in reality could be 'in reality itself'. In its application, the metaphor carries with it inherent possibilities and limitations. When Newton applied the machine metaphor to the structure of the universe, it was obvious that it was an apt fit…but it was only obvious. It was approximate, but not sufficient, that is, it obscured other possibilities of our intellective understanding of what the universe could be until Einstein and quantum physicists used other metaphors.

Using Zubiri's terminology, we can say that when we apprehend something and search for its in-depth reality, we intellectively search based upon our simple apprehensions. In the dynamic movement which is logos, a gap exists between what the thing is as real and what it is in reality. This gap, Zubiri affirms, is a formal moment of sentient intellection which must be filled in by affirmative intention. "Affirmation fills in the distance between a real thing as real and what it is in reality."[14] When we intellectively progress from what something is in reality to what it could be in reality itself, our simple apprehensions become the support for the in-depth reality. This new mode of intellection, as foundation of what we apprehend, provides us a direction for our search. The direction is given in the concept, metaphor, or conceptual metaphor freely chosen or constructed. From these metaphors, models are constructed in order to endow in-depth reality with its content.

This is what Zubiri calls 'free experience'. "Free experience is a free modification of the content of what has been previously intellectively known, but a modification conducted in the ambit of physical reality itself." [15] In-depth reality takes on its content by three modes: modeling or image-making, hypothesizing, or postulating. He avers that we are forced to freely give content to in-depth reality, forced by the imposition of reality.

It is helpful here to briefly state that in Zubiri's noergics, sentient intellection is an impression, the sensing of reality. Sensing has three moments, *affection*: one is affected by what is sensed; *otherness*: what is sensed is other than the apprehending reality—animal or human. He calls this other a 'note'. Third is the *force of imposition*: what is sensed as other imposes itself upon us and arouses the process of sensing. Due to the force of imposition, we are possessed by reality and have an impression of reality, not just stimulation as an animal does. "Reality is imposed upon us with the force of having to endow it with some content." [16] We are forced to endow the content by the three modes listed above. It is not that we create reality, but we create the *content* of reality.

An example will help here: many works on biology or physiology provide a description of various ion channels. There are sodium, potassium, and calcium channels, each having 'gates' which can be 'opened' or 'closed' by heat, acid, or ligands, or by voltage, and allow the passage of the appropriate chemical ion. These channels allow passage of these ions from the outside of a membrane wall to the inside and vice-versa. These channels are composed of proteins. The metaphor of channel is also used to understand mechanoelectrical transduction:

> "Channel" was chosen as the metaphorical image to represent the putative passage through which transfer occurs. The originator of the metaphor might have chosen another word, such as "tunnel" or "corridor." Or a substantially different model of the passage might have been chosen, for example, that the ions are somehow

> wrapped in a suitable molecular packaging and transferred through like packets. The attributes of channels in our macroscopic, everyday world, particularly their association with water, apparently mapped best onto the bare facts of ion transport as first discovered. [17]

By using the channel metaphor, derived from hydrology and water transportation, a new direction was given to understand the in-depth reality of cellular processes and structures. This metaphor was freely chosen, modified as needed to fit cellular dynamics and theories of cells, and new scientific understandings and reasons were provided. Cellular structures have the *content* called ion channels. It is, to be sure, a conceptual metaphor. There are many more examples that one can find, and Brown's (2003) book is a good resource to consider for scientific metaphors.

Metaphor use is even widely affirmed for philosophy. Zubiri asserts that his teacher, Ortega y Gasset, wrote an essay, in which he commented that philosophy has been nourished on two metaphors:

> …the first is just this Greek metaphor that man is a fragment of the universe, a thing which is there. And on this his character of *being there* is his other character of knowing founded and based. Knowing is the footprint things leave in human consciousness; knowing is impression. [18]

We see in this metaphor the use of another poignant metaphor: knowing is a footprint. Metaphorically, our knowing is also an impression, as a footprint in the sand, a footprint left by the reality of things.

After the philosophy of Descartes "the second metaphor appears, in which man is not a fragment of the universe, but something in whose knowledge there is contained everything that the universe is." But there was a third metaphor that reappeared, he says, after the philosophy of Hegel and Heidegger. This one

> …likewise ancient, is imposing its felicitous tyranny, though for how long no one knows. This metaphor does not mean considering human existence either as a fragment of the universe or even as a virtual enveloping of it. Rather, human existence has no other intellectual mission than that of illuminating the being of the universe; man will not consist in being a fragment of the universe, nor its envelopment, but simply in being the authentic, true light of things. Therefore what *things are* they are only by dint of the light of this human existence. [19]

This metaphor—that things have being only in the light of human perception—overlooks, he says, that every light needs a luminous source which is, after all, "the presence of the luminous source in the thing illuminated." [20] This is the light of reality. And this of idea light, along with that of color, we are told, "are more than simple metaphors. Since the time of Plato they have served as sensible intuition for ontology." [21] They are indeed not simple metaphors, but complex and profound ones.

In *Dynamic Structure of Reality* he expresses it this way, "first we have the light-source, reality, afterward we have the light, being, and we have the light insofar as it is flowing back over the very light-source from which it emerges, as being flowing back over reality. This back-flow is precisely what constitutes the being of the substantive thing." [22] For Zubiri, reality is primary, being is secondary.

We are able to apprehend 'reality' directly while 'being' is apprehended obliquely.

Under the influence of this third metaphor—that things have being only in the light of human perception—even quantum physics gives its ascent. If something is not observable it is not part of nature. If it can be measured—then to this extent it is real. Even if a reality is posited, if it cannot eventually be verified it is set aside as an interesting hypothesis.

In the human sciences, however, the issue is not so clear. There are many postulated realities, hypothetical constructs, and metaphors that can never be observed and verification is often conceptual and statistical. There is even a fundamental reality that has become obscured because it cannot be measured or observed—the human psyche. In cognitive science, metaphor use is pervasive and what is measured are the frequency of metaphorical occurrences. There is no mention of psyche since it cannot be observed, so discussion is of mind and mental processes. Though these cannot be observed, it is assumed that mental processes can be measured. However, measurement is of metaphorical concepts. Let me explain.

With the metaphor of the mind as a computer, it is assumed we can measure: analogical reasoning skills: A is to B as C is to…; how long it takes to encode new information; information-processing capacity; memory storage capacity; information retrieval time; input, output and throughput; semantic nodes and relations, etc. None of these have explicit content but are metaphorical; they are postulated realities. Not that this is new to psychology—in fact one need only look at the metaphors used by Mill, Locke, William James, Freud, Jung, or most other approaches except behaviorism. After the advent of the "Decade of the Brain," initiated by US President George Bush, Sr. and begun on Jan. 1, 1990, the metaphors began to change: neural weight; pattern-recognition systems; neural networks; topological maps; selective input and output processors; neurochemical *information*; etc. Studies in these areas have been plethora, but they remain largely academic exercises. In order to understand mental processes it is assumed one need only consider these metaphorical processes and neurological correlates.

The brain is seen as not merely an organ that, like other parts of the body, followed physiological constraints and carried out physiological processes—it is taken as the physical basis of the mind that could be measured and that thinks—the *brain* thinks. The mind became embodied. It is not considered that mental processes are constrained by embodiment, but that embodiment determines the structure of cognition. I will discuss this notion later.

As mentioned previously, Lakoff and Johnson have done substantial work in demonstrating the metaphorical nature of human thought. This work has been built upon by many scientists in various fields and it has inspired others to undertake fMRI studies to investigate the neurological correlates of metaphorical language and thought. These studies indicate that nuclei in the right hemisphere of the brain area more active in the processing of metaphorical thought and sentences and support findings from other neurological studies of persons with right hemisphere damage who have difficulty understanding metaphorical language but no problem with literal language. It may be helpful, for readers who know little about hemispheric differences to note that the right hemisphere has been demonstrated to be more active in non-linear, non-mathematical, and non-logical operations, more active in various forms of imagination, creativity, and music. [23] I mention this to indicate the path taken to demonstrate the reality and influence of metaphor upon human cognition, not to develop it.

From Lakoff and Johnson's (1999) work, I will draw attention to the metaphors for thinking that are relevant to this article. They have delineated multiple metaphors used to describe and discuss mental processes, some harmonious and others inconsistent. Building on the work of Sweetser, and her findings that "mind is a body" metaphor is pervasive, they present four metaphors based on physical functioning: moving, perceiving, manipulating objects, and eating.

As a development of the 'thinking is moving' metaphor, we find these:

- The Mind Is A Body
- Thinking Is Moving
- Ideas Are Locations
- Reason Is A Force

- Rational Thought Is Motion That Is Direct, Deliberate, Step-By-Step, and In Accord With The Force Of Reason
- Being Unable To Think Is Being Unable To Move
- A Line Of Thought Is A Path
- Communicating Is Guiding Thinking About *X* Is Moving In The Area Around *X*
- Understanding Is Following
- Rethinking Is Going Over The Path Again [24]

They provide examples such as: "His mind was *racing*." "My mind *wandered* for a moment." "How did she *reach that conclusion*?" "I can't *follow your line* of argument." If we cannot think, we may get stuck, as in, "Don't get *hung up* on this point or you will get *stuck*." Reasoning is like being *forced* to a conclusion which someone is *leading* us to. If we follow the line of reasoning along which we are led, we may need to take it *step-by-step* so that we are not *lead astray* or *wandering off on a tangent*. Reason also has its own force. When reasoning, we may at times need to *return to the argument,* as we are *approaching* a new theme in the topic.

On the metaphor of 'thinking is perceiving' they present these:

- The Mind Is A Body
- Thinking Is Perceiving
- Ideas Are Things Perceived
- Knowing Is Seeing
- Communicating Is Showing
- Attempting To Gain Knowledge Is Searching
- Becoming Aware Is Noticing
- An Aid To Knowing Is A Light Source
- Being Able To Know Is Being Able To See
- Being Ignorant Is Being Unable To See
- Impediments To Knowledge Are Impediments To Vision
- Deception Is Purposefully Impeding Vision
- Knowing From A "Perspective" Is Seeing From A Point Of View
- Directing Attention Is Pointing
- Paying Attention Is Looking At
- Being Receptive Is Hearing
- Taking Seriously Is Listening
- Sensing Is Smelling
- Emotional Reaction Is Feeling

There are other metaphorical applications that can be drawn out and applied, but instead of merely giving examples, which most of us are familiar with from daily language, I want to use Zubiri's philosophy to demonstrate the pervasiveness of such metaphors in it. To one who is familiar with his thought and presentation, it will be apparent what metaphors he uses and that these metaphors offer linguistic evidence for sentient intellection.

III. Zubiri's use of metaphor

I will focus upon *Sentient Intelligence* for this analysis. In the beginning of his discussion of the *field of reality*, in part two on *sentient logos*, he uses the comparison of a thing as a light which is *luminous* and in turn *illuminates* itself and all things around it. By conceiving any given thing as a source of light, we can focus upon it or upon the light it emanates which spreads over all other things. When we observe any individual thing, he avers, we do so within a field of reality; every real thing is respective to every other real thing. When we apprehend any thing we "do so not just in its moment of individual formality, but also in the moment of its formality within a field. This is true both with respect to its aspect of being a note of the illuminator, as in its aspect of being an illuminating source of reality. It is the compact unity of these two aspects" [25] If this is granted, we realize that we intellectively apprehend things in two ways: as being an individual thing in the field, or as being a function of the field. The latter is proper to logos.

Though he uses the term *comparison* in the initial section, we find that light becomes a metaphor that enables him to

further the comprehension of the primordial apprehension of a thing and what the thing is "in reality" as a function of other things. When we apprehend a tree in a meadow, e.g., we do so primordially and as a function of what the other things are respective to it. We apprehend the real thing and apprehend that it is a tree; we can only do so because we recur to previous apprehensions we have had of trees. The real thing is in reality a tree. It is a tree because it is a *simple apprehension*—in this case a concept—that we have learned. Simple apprehensions are not just concepts, but also precepts and fictions. This field apprehension is a form of what Zubiri terms *dual apprehension*, dual because we apprehend the real thing and what it is in reality:

> The dual apprehension consists in something like apprehending the reality of a thing in light of the reality of something else priorly apprehended. The prior apprehension is present in the thing which we wish to intellectively know like a light by which this thing is apprehended as it is "in reality". The "based upon" is the light generated by the apprehension of the thing priorly known. And this is the essential point. But it is necessary to fix more precisely just what this light is. [26]

This dual apprehension is not just comparison, he informs us, because the real thing appears in the light of what was apprehended previously. Because of this, what we apprehend comes "saddled with the weight of the old" making it hard to see what may be new in reality. How could he discuss these matters without using metaphors that we either readily grasp or must contemplate to determine his meaning? If we have never seen an animal saddled, or know what a saddle is, we might not know how much it weighs or how such a metaphor is apt.

When we affirm what a thing is 'in reality', we do so going "toward" the thing "from" the light emanating from it. In order to intellectively know what the thing is, we "*stop*" to determine what it might be in the light of what we have intellected previously. This stopping he terms *retraction, distance, or stepping back*. We *stop,* or *step back* (i.e. *distance*, *retraction*) from what the real thing primordially apprehended is, and in the light of a previous intellection, affirm what this thing might be in reality. This is an intellective distancing. We are *retained* by the real thing that we have intellectively stepped back from and return to the real thing, based upon our simple apprehensions, to affirm what the thing is in reality. Because we are retained by the real thing and return to it, we have *sentient logos*. We declare what it is in reality based upon what we have apprehended primordially with our sentient intellect.

These are clear examples of what has been called 'orientation metaphors', metaphors derived from our bodies being oriented in some space. Zubiri avers that 'next to', 'in the direction toward' and 'at a distance from' are basic structures of space, each determined by the fact of having a body. [27] Reality as 'toward' is a fundamental mode of reality in Zubiri's noergics of sentient intelligence. These are also good examples of 'container metaphors', in that we are contained *in* reality, never go *out of* it since we are *retained by* it; we even *step back* in intellective reality, i.e. in actualized reality. Moreover, intellection, as is reality, is fundamentally *open*.

We can see here a dynamic intellective process that is based upon physical actions we have seen and experienced since infancy, as long as we have the gift of sight; we can sense here a dynamic intellective process based upon the kinesthetic movements of our body in space as well; we can discern here our experience with various objects which function as containers. Intellection is dynamic because it is *movement*. It is movement that occurs because of a *gap* that opens whenever we try to intellectively know what something is in reality. This gap is in our intellective actualization of what some real thing might be. Because of this gap we are impelled to step back from the real thing toward what it might be in reality. This

gap is *filled in* by the affirmation of what it might be. Lest we think that this gap is merely a cognitive process, Zubiri affirms that all human apprehension is intellective, and cognition is merely a modalization. In fact, the gap is, he states, opened by the real thing in its intellective actuality. [28] Since it is the real thing that opens this gap, we must return to the thing and declare what it 'could be' as determined by what the thing 'is'. By declaring what it might be, we fill the gap. But this gap will never disappear for human intellection. "The clearest intellection on earth will never succeed in eradicating the gap. A 'filled in' gap is still a 'gap', albeit filled in." [29] Metaphorically, we may assert this, as we surely have apprehended many containers which have been filled in with various things, filling in the gaps, the space which was vacant.

This intellective movement, based upon our sentient apprehension of reality is indeed determined by our body. Without a body we would not have a *sentient* intelligence; without a body, our senses would not be *intellective* means of apprehending reality. But does this mean that intelligence originates from the body? Does it mean that the body is intelligent? I will give my understanding later.

Let me continue to highlight the metaphors Zubiri uses to describe our sentient intellection by considering his analysis of *sentient reason*. It is helpful to keep in mind the list of metaphors as given by Lakoff and Johnson.

Inasmuch as human apprehension is not animal apprehension, though we have sensory organs like animals do, it is a dynamic intellective process of apprehending reality. Sentient logos is dynamic as is sentient reason, though there are differences. The latter is because it is a *marching progression* of an intellective *search* for what some real thing which we have affirmed what it could be in reality; once it is affirmed it then may become an intellective foundation of what the in-depth reality of the thing could be 'in reality itself'. An example is helpful here and Zubiri provides one. We apprehend a piece of white paper. 'Paper' is a concept used to describe a real thing; and 'white' is a concept used to describe a characteristic of this particular piece of paper, it is a *note* of this paper. We apprehend these real things—paper and whiteness—though both are 'unreal'. They are 'unreal' in that they are concepts given to realities apprehended; unreal because they are freely described by any concept such as defined by us. In reality itself there is no paper or color, though there surely are real things we call paper and color. These are concepts we give to real things that have become actualized in our apprehension.

When we apprehend the real thing called *white*, we intellectively distance ourselves from it and while stepping back from it we recur to other colored things we have apprehended to declare what this present thing might be. It might be *white*. We then return to the real thing, and affirm that it is white. Using this white, this simple apprehension, but in a different capacity, we want to know what this white color could be in reality itself, that is, what is the in-depth reality of *whiteness*. We begin our search using a system of reference that provides us a *direction*—we use chromatic frequencies, color schemas, or photons—and along the *lines* of inquiry suggested by the system, or one that was merely inchoate in it, we seek to comprehend what white could be in reality itself. Science informs us that reality is not colored, but there are photons of light we apprehend, and light waves have particular frequencies.

Some take this to mean that this implies we create reality, i.e., that we construct it relative to our sensory organs—thus reality is relative to our apprehension. Zubiri takes issue with this and affirms that the photon is real and the photon *in our apprehension* is colored. We do not construct our apprehension, but actualize the photonic reality in our apprehension of it. Intellection is actualization, he repeats incessantly. We actualize reality, we do not construct it. What we construct, and freely construct, are the simple apprehensions we use to declare what some

reality is in reality. We realize these simple apprehensions in the reality we actualize. What is actualized is real; we *endow* reality with its content, as mentioned earlier. Thus we can have mathematical reality as well as physical realities (used in a limited sense here to mean material) that are both formally real though the content differs.

We must endow reality with its content because, in Zubiri's re-thinking of 'reality', he affirms that it is just *formality*, that is, how the real thing is presented to us and its content. Reality is not a zone of objects existing either outside or inside the mind, nor it is an idea that we must intuit, but is how real things that exist *de suyo*, 'in its own right', are actualized by us. There are indeed real things existing outside of us, but to an animal these are not *real*, they are sources of stimulation; to humans they are real 'in their own right'.

Animals lack the moment of reality, Zubiri asserts, while for humans we are *forced* to live thinking because reality *thrusts* itself upon us. What humans apprehend with our animal sensory organs are real things, the same things animals apprehend. But, since physicalists believe that there is only a qualitative difference between humans and animals, and not an *essential* difference, Lakoff & Johnson declare "that human reason is a form of animal reason, a reason inextricably tied to our bodies and the peculiarities of our brains." [30] Animal reason, like animal intelligence, is accepted among scientists and the definitions of intelligence used…though there are many definitions that vie for acceptance. In Zubiri's philosophy, animals do not have intelligence inasmuch as they do not apprehend things as *reality*.

In sentient logos, in our declaration, we are thrust to the field of reality from this real thing towards what it is in reality. In sentient reason we are thrust to the in-depth reality of the real thing as it is apprehended in the field. Reality *thrusts* us from this field thing to what it is beyond it…beyond the field but within the depths of the real thing. Reason is thus not primarily judgment, nor scientific knowledge, but is the actualization of the in-depth reality of things. It is a *progression* that thrusts us from field reality to worldly reality.

We can discern the dynamic metaphors he uses in presenting this analysis:

> The field throws the intelligence in front of a real, but outside-the-field, reality. And this thrusting before itself, actualizing that toward which we are thrust, is just what the word *problem* (from the Greek, *pro-ballo*, to throw something "in front of") means in its etymological sense. In a problem there is already an actualization, i.e., there is an intellection of reality; but this actualization is at the same time still not fully actual. This being-now-actual in a certain way without being so, or rather without being so fully, is the nature of the problematic. The problematic is not primarily the character of my progression, but is primarily the character of the actualization of the real. The real gives one pause to think. And this giving is precisely the problematic, something given by the real. Reality in the "toward" hurls me to a peculiar actuality of the real, to a problematic actuality. [31]

Reason is explanation; *razón* (Spanish), like the Latin *ratio*, is broader that merely a reasoning process. There are many explanations given to reality other than through a process of reasoning: we also have poetic explanations, religious explanations, philosophical explanations, metaphorical explanations, psychological ones, etc. Because we are hurled in reality, constitutively immersed in it, we explain it in order to better comprehend it. Currently, in large part due to the influence of the Enlightenment, logic, and scientism, reason has been skewed in favor of rationality. For Zubiri, this is merely one form of giving reason to reality. In order to explicate a sentient intellection, Zubiri proceeded *step-by-step*. Implicitly following a metaphor "An argument is a journey", Zubiri takes his readers, those that are

able to stay with him and follow his lines of thought, to various conclusions. Along the way, one must pause to think deeply about what he presented, follow his starting and end points as well as his progression in explicating his ideas, and determine if the conclusion of the journey was worth the effort. [32]

Let this suffice to demonstrate my contention of the dynamic nature of Zubiri's philosophy of intelligence based upon metaphors constructed from bodily, i.e. sentient apprehension. The metaphors he uses are drawn from our apprehension of movement of bodies through space, from a source along a path towards a goal, of a journey, from our experience with containers, as well as that of vision which requires light. These are also metaphors which have a long history in philosophical thought. It is because of these metaphors that Zubiri was able to explicate an analysis of sentient intellection. He does not just provide metaphorical reason, but uses metaphor to analyze the structure of intellective knowing. Without these *embodied metaphors*, we could not comprehend our sentient intelligence.

Finally, in Zubiri's dynamic presentation of the person, society, tradition, history and time, two metaphors jump out: reality *flows* and the human *absorbs* these structures in the making of a substantive life. Without bodies we could neither apprehend flowing, nor experience absorption.

There are more examples that I will not draw out at this time.

IV. Embodied minds

As expressed earlier, one contention of cognitive science is that mind is embodied. This carries different meanings to different thinkers, in part depending upon their systems of reference but mostly determined by their metaphysical assumptions. Those who embrace a *scientific realism* share common views in spite of their differences, though Lakoff and Johnson espouse an *embodied scientific realism*. In this section I will present a definition of these forms of realism, consider how it is they view mind as embodied and then counter it by presenting Zubiri's view as I understand it as well as a substantially different view of an 'embodied mind'.

On the issue of color, embodied realism finds harmony with Zubiri's view. Color, we are told, is experienced by the brain and body interacting with the environment.

> Our experience of color is created by a combination of four factors: wavelengths of reflected light, lighting conditions, and two aspects of our bodies: (1) the three kinds of color cones in our retinas, which absorb light of long, medium, and short wavelengths, and (2) the complex neural circuitry connected to those cones. [33]

Color is real, *in our apprehension*. The wavelengths really exist as do rods and cones in our eyes—and color is real in our apprehension of this reality. It is not that we create color, but our experience of color is created by these factors. Color is not objective or just subjective but comes about due to our interaction with the world. This begins to address an issue that Zubiri wrote was a scandal of science, the ignoring of what sensible qualities are "*qua* real received quality." [34]

I find partial agreement between the cognitive view and Zubiri's presentation of another issue related to this. Both assert that the classical *correspondence theory of truth* is inaccurate, yet both hold to a form of correspondence between our concepts and reality. Lakoff & Johnson state clearly that this classical theory is false in that it does not account for the embodied nature of our mind, ignores the metaphorical nature of concepts, does not differentiate between phenomenological explanation and scientific explanation regarding neural processes, does not consider the role of sensorimotor constraints, and thus does not take the facts of the body seriously. They opt for an *embodied* correspondence theory which embraces these facts and the different levels of explanation and levels of

reality. This is not a scientific account of truth, but philosophical.

Zubiri likewise disagreed with the classical theory and affirms that there is indeed a correspondence between our concepts, i.e. our simple apprehensions, and what is apprehended. There is, because intellection is merely actualization of reality and our simple apprehensions correspond to the reality as apprehended by our senses. But more than this, there is a *coincidence* between our simple apprehensions and reality as apprehended. It is this *coinciding actuality* that corresponds. This means two realities coincide, the real as apprehended in our senses and the real as actualized intellectively as among other realities. "The primordial apprehension coincides with the mere intellection of a real thing" [35] This is simple (or real) truth and never in error. When we declare what it is, we have what Zubiri calls dual truth, and error is possible. Our simple apprehensions *coincide* with what we apprehend as real, but do so to differing degrees of firmness.

Scientific realism is a particular form of realism determined by naturalistic scientific thought. In the classical sense it has the following characteristics, delineated by Norris (1994): 1) there exists an objective reality that is not dependent upon our theories or views concerning it; 2) these theories descriptions represent the truth vis-à-vis real things and not from paradigms or systems of belief or concepts; 3) some truths of this objective world we know and some we will discover, while there are those we may be beyond our capacity to discern; 4) these truths are true on any scale—microscopic, astrophysical, causal, laws of nature, history, etc.; 5) any truth we can claim with relative certainty is acquired scientifically—observation, experimentation, hypothesis formation, induction, and causal explanation and must be repeatable and verifiable. [36] Moreover, such knowledge is stable. In the classical sense, the concepts originated from the mind, which was taken to be uninfluenced by the body and its sensory organs.

An embodied scientific realism accepts some of these premises but

At the heart of embodied realism is our physical engagement with an environment in an ongoing series of interactions. There is a level of physical interaction in the world at which we have evolved to function very successfully, and an important part of our conceptual system is attuned to such functioning. The existence of such "basic-level concepts"—characterized in terms of gestalt perception, mental imagery, and motor interaction—is one of the central discoveries of embodied cognitive science.[37]

While these writers borrow the notion of basic-level concepts, there is not agreement among cognitive scientists or cognitive neuroscientists what this basic-level might be, or how to determine them. [38] But, this notion of basic-level is "the cornerstone", i.e. the fundament (ground) of embodied realism. It is, to use Zubiri's term, the ground which supports cognitive scientist's intellective search for the in-depth foundation to cognition. It is a fundament that comes from the intellective field of cognitive scientific concepts. It is moreover, a realism that they affirm is closer to the direct realism advanced by the Greeks than that of Descartes.

Gerald Edelman, working in the field of neuroscience, accepts Lakoff & Johnson's approach to cognitive grammar and wrote four works to give it a firm biological foundation. He did this because he feels that this view of linguistics and cognitive development "is in closer accord with the biological bases of brain and bodily function and with the psychological data on categorization." [39] Edelman advocates a *qualified realism*, a form of realism that is qualified by our neurological structure, evolutionary processes, and how metaphorical concepts arise from interaction with the world.

The notion of the embodied mind as advanced by these thinkers declare that

> the very structure of reason itself comes from the details of our embodiment…create our conceptual sys-

> tems and modes of reason. Thus, to understand reason we must understand the details of our visual system, our motor system, and the general mechanisms of neural binding. [40]

One who is familiar with Zubiri's philosophy must be cautious here because the definition of reason is different, as well as what is meant by 'the structure of reason.'

Lakoff & Johnson provide a definition of reason that includes our logical capacity as well as abilities for inquiry, problem solving, evaluation, criticism, deliberative action, understanding others as well as ourselves and the world. While this is a broad definition, it falls well within the definitions of intelligence as advanced in the sciences. Thus it seems as if they are equating reason with intelligence as generally understood. Reason has a structure in that it is it is structured by the body and neural processes—the same neural processes that allow for movement and perception enable conception. It is also structured by what they term the *cognitive unconscious*, which they declare to be 95% of all thought, which is vast and intricately structured. [41] The *physical structures* of the body are what structure reason.

It must be this way, so one is led to believe, because there is no psyche and the mind arises from body. All mental processes, i.e. cognitive processes, must be accounted for by scientific naturalism and physicalism. Physicalism, like all other scientific and philosophical doctrines, does not represent a unified perspective. There are strong versions, weak versions, eliminative and non-eliminative versions, token versions, and type versions; they all share the one common root of materialism as a metaphysical supposition and philosophy. [42]

Lakoff & Johnson espouse a non-eliminative sort of physicalism and assume that any entity taken as real within a scientific theory has a material basis. It is non-eliminative because it does not assert that all levels above the material can be reduced to the material level, thereby eliminating the need to refer to other levels of reality. However, any nonphysical entities taken as real are hypothesized ones, or posited ones that, on the basis of a convergence of evidence or hypotheses from other scientific disciplines, are needed for explanation. Thus, there are metaphors and concepts that are cognitively real, verbs and phonemes that are also real and yet are determined by the body's interaction with the world that structures the mind and language. Inasmuch as it is a form of materialism, the notion of physical, though it is non-reductive, does not equate with the term as used by Zubiri.

For Zubiri, *physical* is taken in its ancient meaning and stands opposed to artificial, not the metaphysical.

> The physical, consequently, is not limited to what we today call "physical", but embraces the biological and the psychic as well. The emotions, all modes of understanding, the passions, the acts of the will, habits, perceptions, etc., are something "physical" in this strict sense. Such is not necessarily the case with what is understood or what is desired, for these may be merely intentional terms. [43]

It would seem, then, that there is a tacit agreement between Lakoff & Johnson's theory and that of Zubiri with an essential distinction—the human mind, while constrained by the body, does not arise from the body. It cannot be accounted for by materialism or physicalism. Thus it *only seems* that there is agreement.

If I am correct in reading how Lakoff & Johnson and those who follow their system of reference use the terms *reason*, *mind*, and *intelligence*, it is as a fused concept—they can be used interchangeably. More significantly is that these terms are not rigorously defined. Edelman does not discuss *how* we think or reason, but discusses the biological basis for it and how human reason is dependent upon a "specific kind of morphology." [44] He does, however, provide a modicum of a definition of mind: it is a process which depends upon matter organized in a special manner.

This morphological fact finds concurrence with Zubiri's view as advanced in his 1967 article, "The origin of man." Yet, in this article we clearly see why it *only seems* to be agreement with a cognitive approach as advanced. This cognitive view does not even consider psyche, but if it were to do so, by its own accepted constraints, it would have to be accounted for on material basis. In Zubiri's thought, this is insufficient inasmuch as this intellective human psyche—while it must be considered as being constrained by the body and its brain, determined in part by the sensory organs, affected by evolution of hominid ancestors, and develops in its apprehension by interaction with the material world—is an exigent and emergent feature and an *effective causation* of the first cause, God. In a later work he expresses that the emergence of intelligence is a radical innovation "through a *new dynamism of the* [cosmic] *All*." [45] In the earlier article he is very explicit in asserting that such a perspective is an extramundane consideration and in the later work declares that he is doing an intramundane metaphysics and does not rigorously define what this "All" is. If, however, one searches the corpus of his works it becomes sufficiently clear what his view is on it.

Thus, intellection does not arise *from* the body even though it is sentient. It is a constitutive note of the human psyche which is actualized in the corporeal body. Without this intellective psyche the human species would not, Zubiri affirmed, be viable as a species. "For in the genetic development of that [germinal] cell there comes a postnatal moment at which *those same* biochemical structures, now many-celled and functionally organized, will demand *for their own viability* the use of intelligence, that is, the actuation of the intellective psyche." [46] It is an actuation of a reality that has actualized corporeally. Even though Zubiri does not affirm human reason to be a form of animal reason—since animals do not have reason—it is accurate to assert that he embraced the biological dimension of intelligence and thus Edelman's biological approach is of value in understanding its embodiment. "Intelligence, as a consequence, has a biological function before all and above all. Precisely, it stabilizes the species. A species of idiots would not be viable." [47] Human intelligence is a faculty in the sense that *intelligence* is sentient and the *senses* are intellective; these two are potentialities, two potencies (Greek *dynamis,* δύναμιν) of a unified structure.

With a narrowing of the concept of nature, William James was correct to assert that for a scientific psychology psyche could be ignored. It was assumed to be a wholly metaphysical reality—extramundane. We must ask here, *is* psyche wholly extramundane? The answer rests upon how one views psyche, the line of understanding one follows in the historical presentation of it in Western, Semitic thought—along the lines of Greek, Jewish, Zoroastrian, Christian, Islamic or even Bahá'í suggestions. One could, of course, pursue it along those paths laid down in Eastern philosophies. Can it legitimately be construed to be part of the reality of nature and the nature of reality? Let me briefly answer this.

Zubiri presented a philosophical view of psyche and body that I find insightful for many reasons, but will not develop here—I will save it for another time. What I will express is that in Zubiri's thought, the human body is the *concrete actuality* of the human reality in the universe. He does not assert that it is matter inasmuch as this usually stands opposed to spirit, but describes it as corporeal. This subtle difference reveals his insight that matter, as a form of energy, is not solid on the atomic level. Modern physics avers that what we apprehend as solid bodies are waveforms that have collapsed. Matter is energy. But on the common phenomenological level of reality, the body has solidarity. In fact, Zubiri affirms that the body, as an organism, is *a principle of solidarity*. Because of this, the body is the *actuality* of the human reality. "This is the somatic function: it is the body as principle of actuality in reality, the principle of being present in

the cosmos and in the world. The intrinsic unity of these three moments organism, solidarity and actuality is what constitutes *body*." [48] He says that it is *more concrete* than matter: it is not abstract, it is physical, and it is particular. It is not matter, but the concrete actuality of the human reality.

In the same way as Zubiri affirms that the body is a subsystem of the human reality, he also affirms this for psyche. As indicated above, psyche is an emergent property prefigured in the DNA of the individual. Zubiri took psyche to be a partial sub-system of the human substantivity and as such, "Man then, does not 'have' a psyche and an organism, but rather 'is' psycho-organic, because neither organism nor psyche has by itself any substantivity. Only the 'system', the organism, has it." [49] Organism, as used here, refers not just to body, but to the substantive concretion of the individual. The psyche is "psyche-of" a particular organism; the organism is "organism-of" a particular psyche. As organic, both the corporeal body and psyche emerge from the reality of nature; it is intrinsic to the nature of reality that such a reality emerges. Zubiri does not assert this is *spirit*, nor does he use the term *soul* (though he does in other instances in his work), but psyche. As such, from a psychological perspective, his analysis of body as a corporeal actualization of the human reality, as well as his analysis of psyche as a subsystem of this corporeal concretion, has profound significance. It is an intellective psyche, let us not forget this. [50] It is natural and demanded by the human reality to be viable *as a species*.

So, is it, then, valid to consider that in Zubiri's philosophy of intelligence mind is embodied?

In order to answer this it is important to clarify how Zubiri thought of mind. He did not provide a scientific description but a philosophical one. I mention this because one may be inclined to think that there is a scientific definition offered by scientists. But this is not the case; there are many definitions and no rigorous conceptualization of it. Zubiri, on the other hand specifies clearly how he understood mind. He discussed it by recessing to the Greek term *mens*, or *nous*. In the work *Nature, History, God*, one finds an historical explication of mind, of *mens* or *nous*. Though there are elements in this presentation that Zubiri develops into his own view, I will consider his later presentation as given in *Sentient Intelligence*. It is here, in Part III, *Intelligence and Reason*, that he gives his mature view.

He begins by informing us that mind is not the same as intelligence, but is a type of intellective *movement* by virtue of it bearing "as its weight some type of intellection of the trajectory and the terminus of that movement. That is, the movement which *mens* signifies is always movement inasmuch as it has an intrinsic intellective weight." [51] This movement is the force of intellection itself as understood. It is intellection as *throwing* and is the concrete character of reason. Reason is *concrete* in that it is, as explanation, supported by some previously apprehended reality, grounded by this same reality. It is reality as apprehended and affirmed, which serves to give *suggestions* to human intellective searching. The systems of reference one uses provide such suggestions for further inquiry. More than this, *mens* in its concretion, is a habitual mode of intellective behavior in being thrust. The scientist, philosopher, poet, metaphysician, politician, theoretician, etc., are the concrete behaviors of intellective movement that is thrust in the search for the in-depth reality of what something is in reality. These concrete forms of mind are intrinsic to intellection itself, he says, while a Semitic or feudal mentality, or European or Chinese mind are extrinsic to intellection *qua mens*.

The scientist, psychologist, philosopher, poet, etc. are all habitually involved with intellectively knowing reality according to their particular mental disposition, *forma mentis*. It is important to note that these are not intellective practices of a scientist, psychologist, philosopher, etc. but a "mode of intellection of the real, a mode intrinsic to reason." [52] Primordial

apprehension of reality is intellective and as a modalization of this, there is a scientific explanation (reason), psychological explanation, philosophical explanation, metaphorical explanation, etc. However, it must be acknowledged that there are metaphors used by all types of mentality. This habitual mentality, Zubiri states, is reason in its concretion. Here we have a clear explication of mind and mentality that would serve science well.

> Mentality should be understood in the light of this vast range, which encompasses not only the content, but also the very lines of intellection. Different are the mentalities of the scientist, the poet, the politician, the theologian, the philosopher, etc. And this, I repeat, is true not just by virtue of the "content" of their reason but above all by the "line", by the habitual mode of behavior in which reason progresses, thrust out in its search. Mentality is just the formal concrete habitual mode of behavior of rational search; it is the concreteness of the "toward" as such. [53]

Above I mentioned that for cognitive science, premised upon a physicalism, what structures reason is the body: the neurological and anatomical structures in interaction with the environment. While Zubiri asserts that the intellect stabilizes the body, "the first function of the intelligence is to ensure the biochemical stability" [54] what structures reason is the mentality, the mind. This is the human habitude of intellective search. Habitude is the habitual or primary manner of facing things; rationally it would be the primary manner of being thrust in reality from the field toward the in-depth explanation of something. Psychologically we would call it an *attitude*. [55]

If we affirm that mind is embodied, and if we use this definition of mind, the embodiment of mind would not be because mind arises from the body through evolution considered scientifically. Philosophically, the mechanism of evolution and the fact of evolution are different matters. [56] It would not be that human reason is a form of animal reason. It would not be that mind states are merely brain states. It would not be because many concepts are metaphors. It would be because the intellective human psyche, i.e. the rational soul, as an emergent reality of the human species, must give explanation to reality as apprehended and do so in very concrete ways. It must do so sentiently, along specific lines of intellective inquiry, using the suggestions provided in the systems of reference one avails oneself of, which derive from the field of reality—intellective and physical. It could be that one uses a scientific system of reference, a philosophical one, a poetic one, etc. Many explanations are metaphorical; much of language is metaphorical. Each explanation is given by embodied humans who have an intellective psyche and a human body with intellective senses. In this way we can affirm that mind is embodied. It is constrained by the body; it is *partly* determined by it. This is an intramundane consideration of *mens*.

It must be mentioned before moving on that for Zubiri, the *brain* is not cognitive, though without the brain one can not have cognition. The function of the brain and its cortex is one of *formalization*. [57] "Formalization is the modulation of formality", [58] the modulation of the content and the relative autonomy (otherness) of what is apprehended. It does not come about because of a process of reasoning, of cognition, but is given to us in our primary apprehension; we apprehend *reality* while animals apprehend *stimuli*. Formalization concerns the autonomy of the content of apprehension. For humans, things are *de suyo*, they are realities "in their own right". This is what allows us to declare and affirm that there is metaphorical reality, poetic reality, scientific reality, emotional reality, postulated reality, cognitive reality, mathematical reality, etc. Some of these realities are posited and are our *postulations* without which there would be no science or mathematics. Zubiri thought that the brain and cortical structures are for formalization, of which cognition is a modality of human intellective apprehen-

sion of reality.

V. The nature of Nature and the nature of consciousness

In this section I do not intend to give a disquisition on the idea of nature or consciousness. Zubiri has completed such an historical explication of nature in his essays published in *Nature, History, God*. In his work, *On Essence* he discusses consciousness in depth. [59] I will merely consider these ideas briefly as they impinge upon cognitive and neuroscience as scientific and psychological understandings of the intellective human psyche. The scientific view is premised by a view of *naturalism* that is a subset of materialism; the psychological fields largely followed suit.

As I have sought for reasons to understand this development in psychology, it seems that it must rest in large measure with William James, Wilhelm Wundt, and Franz Brentano. Though it is clear that there are other thinkers who used the term mind and excluded psyche, James provided a convincing argument as to why it could be ignored in a scientific pursuit of psychology as a naturalistic science. I mention this here because it is relevant as to why psychology does not avail itself, as a discipline, of sentient intelligence. To ignore psyche may be scientifically feasible if it is assumed to be out of the order of nature, but I submit that Zubiri's presentation of it centers it in the domain of nature without limiting it to material nature. It is natural that humans have intellective psyches; it is from nature, as a *natura naturans*, a nature that actualizes the inherent possibilities of creation, that this psyche emerges. Thus, while it may be scientifically feasible, it is not feasible philosophically or according to the reality of nature and the nature of reality to ignore psyche. In most approaches to psychology, psyche was never conceived to be part of the embodied human, but the disembodied part that was later subsumed under mind.

Naturalism, though widely accepted in the sciences—even many human sciences—is, like the other –ism's, never clearly defined unless the writer is giving a philosophical presentation of it. I will give a definition that is expressive of many writers that I think captures the essential elements:

> It is a faith in the existence of some sort of universal natural order extending beyond human experience, and somehow reflected in that experience and made accessible by means of it. It includes a belief that humans and other sentient animals are, at one and the same time, the products and experiencers of nature, and, as such, can never know it in any "holistic" or absolute sense. [60]

Hutcheon traces the roots of naturalism to the Greek thinkers Thales of Miletus, Anaximander, Democritus, Epicurus, the Roman Lucretius, and revived in the Enlightenment by Erasmus. It arose as a reaction to the supernaturalism, religious dogmatism, and philosophical idealisms that were dominant in Europe. It was a philosophical means of breaking the stranglehold these systems had on human life and thought and as a means of justifying the free scientific investigation of the natural world.

More contemporaneously it has re-emerged in American philosophical thought and been equated with physicalism. Ambiguous concepts such as "experience" or "psycho-physical" are no longer considered and "As a result, for a contemporary naturalist the only conceptual system in terms of which the world-process can be reliably characterized is held to be that of the physical sciences of nature. On such a view, the world and nature are one and the same and everything in them is of the same ontological type." [61] There are many different versions of naturalism in use.

The concept of nature has, as Zubiri demonstrates clearly, been severely limited. This limitation and narrowing has afforded scientists and philosophers to ignore many dimensions of reality that do not fit or that are not material. Psyche was one.

James, in his monumental work *The Principles of Psychology*, begins by declaring that he is keeping to the view of natural science. The *data of* this scientific approach to minds are three: "(1) *thoughts and feelings*, and (2) *a physical world* in time and space with which they coexist and which (3) *they know*." [62] He then proceeds to state that these data are discussable, but to discuss them is *called metaphysics*. As a natural science, psychology can go no farther than discovering the physical correlates of these mental states *of consciousness*. This much we can be sure of, for one who believes in soul or a positivist who does not—that there is consciousness which is a *flow* of the *stream* of thought. What a pleasant metaphor that is! In his pragmatic manner, James acknowledged that eventually this situation for psychology must be changed and that it will be re-thought, but to do so will be metaphysical. It must be a metaphysical approach that is fully aware of its task and may, he says, "be centuries hence." Though these are the *data of* psychology, they are *data for* thinking.

As we see here, psychology fell under the influence of *consciousness* as did philosophy and science. Surely consciousness comes from nature and even animals have some form of consciousness. Humans are conscious of reality; animals also carry out conscious acts, but animal consciousness is that of stimuli. [63] But, as Zubiri affirms, *consciousness* does not exist, though there are conscious acts. "Consciousness is nothing but a character or property which some, but not all, the acts which man carries out, possess; there are conscious acts, but there is no 'consciousness'." [64] He tersely restates it in his preface to *Nature, History, God* where he writes that consciousness became substantivated, i.e. conceived as a substantive reality. For Zubiri, a substantive reality is a system itself, and consciousness is not such a system. It is a moment of the intellective human essence; a character of the human reality that has a body and psyche:

> This substantivation was introduced in much of the psychology of the end of the 19th century, for which psychic activity was synonymous with activity of consciousness, and it conceived all things as "contents of consciousness". I believe this also includes the concept of "the" subconscious. This is inadmissible because things are not the content of consciousness but only the objects or boundaries of consciousness; consciousness is not the receptacle of things. Psychoanalysis has conceived of man and his activity by referring them always to consciousness. Thus it speaks to us of "the" conscious, "the" unconscious, etc. Man would ultimately be a stratification of zones qualified with respect to the conscious. This substantivation is inadmissible. "The" activity of the conscious does not exist; "the" conscious does not exist, nor "the" unconscious, nor "the" subconscious. There are only conscious, unconscious, and subconscious acts. [65]

As a psychologist who has studied the psychology of Carl Jung deeply—who adheres to the reality of psyche—as well as other fields of psychology, I concur with Zubiri here. When psychology 'took leave' of psyche and adopted for itself an empirical and naturalistic approach that was suitable for material science, consciousness was introduced and became the dominant referent. In dynamic psychologies—Freudian, Adlerian, Jungian and those which have branched off from this—as well as cognitive psychology, consciousness is balanced by unconsciousness. Though Jung held to the reality of the personal and collective psyche, he discussed it as a duality of conscious and unconscious. We read of the cognitive unconscious as well as the personal and collective unconscious. These are posited and hypothesized realities that are felt to be needed to give reason to, i.e. to explain psychological experience.

If, on the other hand, we avail ourselves of an intramundane metaphysics,

psyche is as much a part of the nature world as is mind. This does not mean that it is only part of the natural *material* world, for reality is not so limited. There are many realities which are real but are not material. If psychology were to embrace a view of the intellective human psyche as a subsystem of the embodied living human, the physical *data of* science would not change, though the interpretations of this *data for* thinking would. It would not be physicalism, materialism, or naturalism in its present guise that would be sufficient to interpret this data. It would be a form of realism, however; perhaps it would be a *radical realism* of dynamic functionality that embraces the functionality of the real in the *giving of itself as apprehended in sentient intellection.* [66]

V. Conclusion

In this article I have argued that the analysis of Lakoff & Johnson and their approach to cognitive psychology is insightful. With an emphasis upon metaphor, these thinkers have built upon systems of reference and proffered another system of reference that has wide application. It is a form of *embodied realism* that takes seriously the facts of embodiment upon cognition. I have drawn out some elements of their work to highlight the importance of metaphor to Zubiri's analysis of sentient intelligence. Cognitive psychology does not consider psyche and subsumes intellect under the umbrella of reason and mind, but do not follow the 'first generation' cognitive approach by using computer metaphors. Instead it uses other metaphors drawn from neuroscience.

Though there are areas of similarity between this approach to psychology and Zubiri's noergics, we must be circumspect in that it only seems to be the case with regard to how mind is embodied, what mind might be, and the view of nature. Moreover, since cognitive psychology and neuroscience have impaled their views on the arrow of consciousness Zubiri's philosophy cannot support it. There are myriad conscious acts, but consciousness is not a substantive reality, but consciousness of some substantive or postulated reality. Reality cannot be limited to physical in the sense of material, but in the sense of real is far more than materialism can account for. Scientific realism or embodied realism are not the radical realism that Zubiri presented and for Zubiri "all the moments of intellective knowing are radically and formally immersed in the real, and determined by the real itself as real impressively apprehended." [67] This is a form of realism *more real* than that offered by the cognitive view. It is *more* real because it is wholly immersed in reality—material and nonmaterial reality, it is not limited to materialism but exceeds it.

Notes

[1] Edelman, G. (1992). Bright Air, Brilliant Fire: On the Matter of the Mind. NY: Basic Books. P. 14.

[2] Xavier Zubiri, *Sentient Intelligence*, Trans. by T. Fowler, Washington, DC: Xavier Zubiri Foundation of North America, 1999. The work used for this article was downloaded from the Zubiri Foundation.

website, http://www.zubiri.org/. Pagination used follows the Spanish edition. References shall follow this format: Part One: *Intelligence and Reality* (*IRE)*; Part Two: *Intelligence and Logos* (*IL*); Part Three: *Intelligence and Reason* (*IR*). See, IL, p. 199.

[3] *IL*. P. 202.

[4] Ibid, p. 221.

[5] Lakoff, G. & Johnson, M. (1999). Philosophy in the Flesh: The embodied mind and its challenge to Western thought. NY: Basic Books (emphasis in original).

[6] 1974, "The Man and His Body". *Salesianum*, XXXVI, N0. 3, pp. 479-486.

[7] [*fundament* in English is a rendering used for the Spanish *fundamentar*, which may be taken to mean *ground*.—ed.]

[8] *IL,* p. 195.

[9] *IR*, p. 45.

[10] *Ibid.* p. 101.

[11] See, e.g., Maasen & Weingart, *Metaphors and the Dynamics of Knowledge*, (2000), UK: Routledge.

[12] Zubiri, X. (1981). *Nature, History, God.* Trans. by T. Fowler. Washington DC: University of America Press. Hereinafter cited as *NHG*, p. {43} [40].

[13] *IL*, p. 102.

[14] *Ibid.*, p. 213.

[15] *IRE*, p. 122.

[16] *Ibid.* p. 108.

[17] Brown, T. (2003). *Making Truth: Metaphor in Science*. Ill.: University of Illinois. No page. Text downloaded 8-10-2006 from www.press.uillinois.edu/epub/books/brown/ch3.html.

[18] *NHG, p.* {239} [213].

[19] *Ibid.*, p. [213] {239}—[214] {240}, "Hegel and the Metaphysical Problem", written in 1933.

[20] *Ibid.*, p. [214] {240}.

[21] *Ibid.*, p. [407] {464}.

[22] Abbreviated as *DSR* (2003), Trans. N. Orringer. Chicago: University of Illinois Press.

[23] This is *very* brief. Anyone interested can find a book on neuropsychology, neuroscience or behavioral neurology to learn more.

[24] *Op. cit.* p. 236.

[25] *IL*, p. 21.

[26] *IL*, p. 60.

[27] *DSR*, p. 75.

[28] *IL*, p. 214.

[29] *IL*, p. 248.

[30] *Op. cit.*, p. 19.

[31] *IR*, p. 65.

[32] For a fuller consideration of this metaphor, see Brown, *op. cit.*

[33] *Op. cit.*, p. 23.

[34] See Appendix 5 of IRE.

[35] *IRE,* p. 257.

[36] Norris, C. (2004). *Philosophy of Language and the Challenge to Scientific Realism*. UK: Routledge.

[37] Lakoff & Johnson, op. cit., p. 90.

[38] For a succinct discussion on this, see Chapter Six of Mandler, J. (2004). *The Foundations of Mind: Origins of Conceptual Thought*. UK: Oxford University Press.

[39] Edelman, G. (1992). *Brilliant Air, Bright Fire*: *On the Matter of the Mind*. NY: Basic Books. Another view that vies for scientific acceptance is the generative grammar of Noam Chomsky premised upon innate language structures.

[40] Lakoff & Johnson, *op. cit.*, p. 4.

[41] *Ibid.*, p. 13.

[42] As my purpose here is not to defend physicalism but to contrast it with Zubiri's philosophy, I will not develop it. For an in-depth consideration of it, one may turn to P. Moser & J. Trout (eds.) (1995), *Contemporary Materialism: A Reader*. UK: Routledge.

[43] Zubiri, X. (1980). *On Essence*, Trans. A. R. Caponigri Washington D.C.: Catholic university of America Press. p. 12. Hereinafter cited as *OE.*

[44] *Op. cit*, p. 34.

[45] *DSR*, p. 141.

[46] "On the origin of man" (1964). Trans. A. R. Caponigri. (1967). Retrieved from www.zubiri.org.

[47] *DSR*, p. 140.

[48] Zubiri, X. 200-12004). *Man and God*. Trans. J. A. Redondo. Retrieved from http://www.catholicphilosophy.com/systmpl/door/, p. 41.

[49] Ibid, p. 41.

[50] His explication of this in the above listed work as well as *On Essence* provide, I submit, a rigorous philosophical basis for a psychological investigation of the human reality *qua* concrete actuality of the individual.

[51] *IR*, p. 150. Notice the embodied metaphors used here: weight, movement, trajectory, terminus (implying a path along which someone moves) and that which someone carries.

[52] *IR*, p. 154.

[53] *Ibid.*, 156.

[54] *OE*, p. [365] {336}.

[55] As a point of tangential interest here, I note that Zubiri, as a lay Catholic priest and philosopher had a mentality structured by a trinitarian schema. He develops his thought most often in three steps based upon three questions; gives three reasons; analyzes three moments of impression; three strata of a living being; three formalities; three habitudes; three structural moments of intellection; three dimensions of real truth, of understanding things, of suchness, of reality, of actualization of the real, of power, and of religation; etc., etc. Jung, on the other hand had a psychological mentality structured by four: four psychological functions; added a fourth to the Christian notion of Trinity; draws out four, fourfold elements from many systems of thought he studied.

[56] See *DSR*, p. 140.

[57] See e.g. *DSR*, p. 120; "Man, the personal reality". In *Occidental Review*, 1 (1963), pp. 5-29. Available in Spanish, "El hombre, realidad personal" at www.zubiri.org.

[58] *IRE*, p. 37.

[59] See *OE*, Part II, Chapter 3, pp. [57] {23}—[67] {33}.

[60] Hutcheon, P. (1966). *Leaving the Cave—Evolutionary Naturalism in Social-Scientific Thought.* Ontario Canada: Wilfrid Laurier University Press. p. 466.

[61] Olafson, F. (2001). Naturalism and the Human Condition: Against Scientism. UK: Routledge. p. 6.

[62] James, 1890, Part 1

[63] *IRE*, p. 165

[64] *OE*, p. 29

[65] *NHG*, p. xii-xiv

[66] This realism is merely speculative and used linguistically to express elements of Zubiri's philosophy. Dynamism "is reality in its constitutive giving of itself." *DSR*, p. 40.

[67] *IR*, p. 396

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