

## A Leadership Opportunity

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Review

### **Holons, Heaps and Artifacts (And Their Corresponding Hierarchies)**

by By Fred Kofmann

In order to understand the meaning of whole/part in Wilber's model, it is fundamental to distinguish four kinds of entities: individual holons, social holons, artifacts and heaps. According to Wilber, for each one of these entities the part/whole relationship means something different; for each one of these entities, the hierarchy of progressive transcendence and inclusion means something different. Wilber has stated these ideas in several places (see, for example, his Integral Psychology), but he hasn't organized them in a single text. Wilber's fullest discussion of heaps, artifacts and holons occurred in the discussion leading to this essay. My goal in this note is to articulate his ideas and derive some of their implications for an Integral Perspective on life and business.

I also hope to correct some of the common errors that a casual reader of Wilber's theory can make. The distinctions between holons, artifacts and heaps are subtle yet fundamental. That is why overlooking them is easy and dangerous. The very Wilber is a bit loose in his original presentation. (But let's not forget that these concepts are only one of the hundreds of profound and radical innovations he introduced in *Sex, Ecology and Spirituality*). In p. 36 of that book, for example, Wilber states that sets are "mathematical holons that are arranged in a transfinite hierarchy, an infinite holarchy." He also uses elsewhere the hierarchy of letter, word, sentence, paragraph and text as a holonic example of transcend and include. These illustrations make a point about hierarchies, but they don't use the terms

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“holon” and “holarchy” rigorously. (By Wilber’s own definition, sets, letter, words, sentences, and other linguistic objects are not holons but artifacts.)

Furthermore, the first of Wilber’s twenty tenets tends to drive people to an unwarranted conclusion. The tenet states that “Reality as a whole is not composed of things or processes, but of holons.” The incorrect inference (the one I had made and many other reader still make) is that **every thing** that exists in Reality is a holon. This is **not** the case; or at least, **not** what Wilber is trying to convey. There are lots of things that exist in reality that are not holons such as heaps and artifacts. These things, however, can still be embedded in networks of whole/parts relationships; it’s just that the hierarchical inclusion means something totally different for heaps, for artifacts and for holons.

Even restricting analysis to holons, there is still widespread confusion amongst my Wilberite friends about the difference between individual and social holons. These are two fundamentally different aspects of holons and need to be kept separate to avoid confusion. When people write (pseudo-)holarchies such as “individual, family, community, nation, humanity”, they are incurring in a mistake with potentially serious consequences. My goal in this note is to clarify that confusion as well.

In SES Wilber did not make sharp distinctions between holons, artifacts and heaps; he simply focused on part/whole relationships and the transcend-and-include nature of hierarchies. Although he did make clear his definitions on holons and holarchies in other sections of the book, many people have misunderstood and misapplied these concepts. This is unfortunate since it can lead to great confusion, and dangerous ethical ideas—ideas that have rather frightening social and political implications.

For instance, without these distinctions it is easy to confuse different entities and create hierarchies that mix them, switching tracks in the middle of the reasoning process with some “unpleasant and confusing” consequences—as Wilber warns in page 89 of SES. For example, one can think of parts and wholes merely in terms of physical or relational inclusion,

or one can subtly fall into the reductionistic attitude of equating a holon with its exterior surfaces, denying its interior dimension. (For a more detailed discussion see SES p. 90.). Once consciousness falls out of the picture, the integral system collapses and becomes a reductionistic farce of its true self.

### **Four types of entities**

In the Cosmos, Wilber distinguishes four types of basic entities: heaps, artifacts, individual holons and social holons. (There is an additional type called “hybrid” which is a combination of any two basic ones). For each one of these entities the part/whole relationship means something entirely different, and the hierarchy of successive inclusion also means something entirely different.

A **holon** is a fourfold entity that encompasses an interior (intension, consciousness, subjectivity) and an exterior (extension, form-matter, objectivity) at an individual (localized) and a social (collective) level. A (whole or senior) holon transcends and includes its (component or junior) holons. For example, a molecule transcends and includes its atoms; a human being transcends and includes the reptilian being.

An **artifact** is an entity created by a holon; its agency is derived from the holon's. An artifact (whole, system) includes and organizes (in a physical, conceptual or spiritual way) its components (parts, elements). For example, a stereo system includes and organizes the CD player, the tape deck, the radio, the amplifier and the speakers; a geometry includes and organizes its axioms, postulates, theorems and corollaries; a mythology includes and organizes its myths, parables, visions, ethical imperatives, etc. These three categories of inclusion refer to the domains of the flesh, the mind and the spirit. There are physical artifact that can be seen with the eye of the flesh, conceptual artifacts that can be seen with the eye of the mind and spiritual artifacts that can be seen with the eye of spirit.

A **heap** (whole, pile) accumulates or gathers (again, in

physical, logical or spiritual ways) its “stuff” (parts, bits). For example, a pile of sand accumulates the grains of sand and a heap of clothes is simply a bunch of clothes without order or organization.

For each one of these entities being in a hierarchy means something different. It will be helpful to designate the different hierarchies with different names: “holarchy” for holons, “artifactarchy” for artifacts and “heaparchy” for heaps. Confusing holarchies with artifactarchies or with heaparchies creates some serious problems since “transcend-and-include” does mean very different things for each one of these hierarchies.

A danger of the confusion between these entities is that someone might start building “holarchies” going from brick to wall to room to apartment to building, simply because a brick is part of a wall, a wall is part of a room, a room is part of an apartment and an apartment is part of a building. There is certainly a relation of asymmetric inclusion between these elements (a brick is part of a wall but a wall is not part of a brick), but this is not a holarchy. The brick, the wall, the room, the apartment, the building and even the whole darned city are not holons—they are what Wilber calls “artifacts”. So this is a hierarchy of artifacts, an artifactarchy.

Another danger is that the integral embrace can be reduced to a physical engulfment. For example, an atom is “part” of a rock, but the rock is not a senior holon to the atom. The rock is a heap. When the distinction between holons and heaps is lost, size substitutes organization as the “direction of ascent”. The consequence is that the omega point becomes simply the biggest heap of them all, and the Divine Nature is reduced to a the god of flatland: “The System.” (Of course, these reduction only takes place in our confused minds, the real Divine Nature is totally untouched by the conceptual mistakes of its own products).

By the same token, creating a pseudo-holarchy such as (human + computer = workstation) blurs the distinction between a human (holon) and a computer (artifact). This has a subtle de-humanizing effect since the person becomes then “a cog in the machine”; being identified herself as an artifact,

a sub-system whose intentionality is imprinted from the outside by a supra-system. The organizational implications were recognized already early in the XX century when Charles Chaplin filmed “Modern Times” (the scene where he gets “swallowed” by the machine is one of the best allegories in film history). The political and social implications are reflected in the “Borg” race of Star Trek, new generation and in the Movie “The Matrix”.

Even if one does not mix holons with heaps or artifacts, dehumanizing consequences ensue from combining individual and social holons in the same hierarchy. Consider, for example, the relationship between an individual and a team. An individual (as a physical-administrative entity) can be a member of the team (a physical-administrative artifact). It would be right to say that there’s a hierarchy that goes from the individual to the team to the organization. But this is would be an artifactarchy (the individual “belongs” to the team only in this physical-administrative sense) not be a holarchy. The individual is not a junior holon of the team.

To understand this, remember that a holon is defined as having a certain type of interiority or consciousness. It is possible to construct scenarios where due to his level of consciousness (the upper left quadrant), the individual might not be able to participate (in a holonic sense) in the **higher levels** of the team’s culture and social organization (the lower quadrants). Using the language of spiral dynamics, we could say that an individual operating within the red-meme or level of consciousness can only associate in relational exchanges with organizations (social holons) up to the red level. If he is assigned to a green team, he will not “belong” beyond the red level (which is a junior holon, included and transcended by the green level which is its senior). In a strict “holonic” sense, he will not be a “member” of the green socio-cultural holon, manifested in the exterior collective dimension as the “team” to which he belongs in the administrative sense.

The consequences of this confusion are serious. Imagine a “pseudo-holarchy” of the type: individual, state. According to its implied relationship of “transcend-and-include”, the individual is a junior holon of the state. The senior holon,

being implicitly more “conscious” has the power to impose its organization on the junior one—just like a person has the power to impose her will on its arm. The political consequences are dramatic: every type of repressive regime finds justification.

On the other hand, a perspective that asserts that different persons are transcended and included by the group is implying that all people are equal holons, they all belong to the same level. That is another serious mistake. Identifying a living body with a holon is forgetting three of the four quadrants—only the individual exterior or upper right quadrant is considered. Holons of different levels can have apparently similar exteriors (we’ll elaborate on this point further). For example a person operating at the conop level of consciousness and a person operating at a vision level are not at the same “holonic” level or stage of development; they are not equal in this respect. Similarly, a person operating at the pre-conventional or self-centric level of morality is not equal to one operating at a post-conventional or world-centric level. This poses severe questions on the democratic system.

If the majority of a society is at a pre-con level, they would never vote against slavery (“Why end it? It’s quite convenient!”) or oppose a fascist government (“They are not bothering me, let them take the Jews to the camps. I don’t want to get in trouble.”), or respect other people’s right to live according to their free will (the war on drugs, just like alcohol prohibition was in the 20’s, is really a war on the people who choose to use drugs). This majority would support imperialistic expansion and colonization of “lesser” races, intervention in other nations affairs and all the other despicable practices (despicable, of course, for someone conscious of their consequences) that the founding fathers of this nation were opposed to. That’s why the U.S. was not established as a democracy but a republic; not based on the will of the majority but on the “unalienable God-given rights” to life, liberty and property protected by the Bill of Rights.

### **Extended Definitions**

**Individual holons** are entities that have agency and localized interiority or consciousness—in addition to unified

exteriority. (If the interiority was not localized or the exteriority not unified we would be talking about collective or macro, as opposed to individual or micro holons).

Examples of individual holons are the ones in the top two quadrants of SES's AQAL (all quadrant all level) diagram: prehension/atoms, irritability/molecules, etc. (Wilber's model is really all quadrant all levels all lines all states and all types, I'm focusing here only on the quadrant-level pair.) It is important to note that each holon has both an interior and an exterior dimension: prehension is the interior view and atom is the exterior view of the "same" holon. Other examples are the memes from Spiral Dynamics (with their corresponding neuronal patterns). The orange meme is a senior holon that transcends and includes the blue meme. Another example is the holarchical nature of time. Each holon, at a particular instant, is a junior holon of itself at the next instant: that is to say that over time, a holon evolves integrating and transcending itself continuously. The whole "this moment" is the part of the whole "next moment". Each moment prehends its predecessors, as Whitehead would say.

Every holarchy is composed of holons, each one simultaneously a part and a whole. As a part, I would call the junior holon a "primitive" or "root" and as a whole I would call the senior holon an "evolution". For example, the atom is a "primitive" of the molecule and the molecule is an "evolution" of the atoms. This holonic inclusion refers to the creative emergence of organic components, as opposed to the natural or artificial composition of atoms into bigger but still inorganic structures (heaps or artifacts). As Whitehead would say, when creativity approaches zero there is strict causality. Creativity shifts the balance, making the "transcend" part more important than the "preserve" part. Thus, the novel holon emerges. To explain the universe, Whitehead says that one needs three foundational concepts: one, many, creativity. Wilber's Cosmos can be explained with only two: holon, creativity.

### **From individual to social holons**

One needs to be careful about not mixing individual and social holons in the same developmental line. For example, it

is very sloppy to write a holarchy that goes from the individual (an ill defined individual holon) to the group (an ill defined collective holon) to the company, to the industry, etc. But, unfortunately, that is the absolutely obvious way in which most people (including me, until Wilber straightened me out) thinks about the issue. Let's see why this is so sloppy.

The first problem is that "an individual" is not a well-defined holon. In order to define the holon, it is necessary to establish its "level" or "depth" of consciousness. For example, an individual operating within the green meme is not the same as an individual operating within the yellow meme. The mistaken notion of equating a physical person with a holon is prevalent because the "external" surfaces of the two entities are indistinguishable. That is to say a casual objective observer cannot detect differences in the upper right quadrant. However, if one could look with absolute precision at the "internal" surfaces of the brain (which are still parts of the exterior dimension of the holon) such as its neuronal paths and firing patterns, its electrochemical states and hormonal releases, one would perhaps see they are different in significant ways (this is what Wilber calls fs1, fs2, fs3 in the upper right quadrant of SES's AQAL diagram). So the (individual) "holon" is not just the exterior entity we call "the individual", but also the interior level of consciousness embodied in that individual's exterior level of structure/function.

The second problem is that "a group" is not a well-defined holon either. One needs to define the general level (or center of gravity) of intersubjective consciousness of the group to more accurately identify it. That is because the (apparently) same external surface (i.e., the group of human beings) can correspond to a multiplicity of interiorities of a social holon.

As I said above, a human brain (upper right quadrant face of the holon) can be the exterior of a pre-conventional level of morality, a conventional one, a post-conventional one or a post-post-conventional one. Different interiors imply different holons, but these different holons may well have the same external exterior surface. I think that the internal exterior surfaces are different because I believe that there are some

subtle differences in the patterned neuronal firings that occur in the brain of a human being at each level along the moral development line, but these differences are below the observational threshold of current scientific methods—and certainly of the ones of normal interaction and language. So for practical purposes, we can say that “the same” (observable) exterior structure (body, brain) corresponds to “different” interiors (consciousness, memes, levels, lines, states, etc.).

Analogously, a group “made of” “the same” six individuals can evolve through different levels of depth—each one of these levels being a different social holon which has as members different individual holons (although their names and ID cards are always the same). From a “right-hand” perspective, these six individuals remain who they always were, and continue to “belong” to the “same” group over time; but that is not the case. To see how this works, let’s trace the evolution of certain individual and social holons through time.

Our six subjects meet for the first time in kindergarten, when they are three years old. They play and interact according to a concrete sensory-motor cognitive level, a pre-con moral stance and a body/impulse self-concept. Their group is the collective or macro expression of a certain mode of consciousness. They grow together and reach high school. Now, each one of them has evolved to a form-op cognitive level, a conventional moral level and a rational-mental self-concept. Each individual is now a senior holon that transcends and includes the (relatively) junior holon they were in kindergarten. Equally, their group is now structured around different cultural practices and intersubjective meanings; probably they also have different regulation systems for their interactions. So the group has evolved too into becoming a senior holon that transcends and includes the junior holon that the group was in the kindergarten years. It is critical to understand that terms such as “the same” individuals and “the same” group are just too loose to define accurately what’s going on.

We can illustrate the problem by continuing with our example of the six life-long friends who have now created a music

group: “Sgt. Pepper’s Friendly Hearts Club Band”. Suppose that one of them, Joe, is ailed by a mental illness that arrests his cognitive, moral and self-sense development at the age of six, at the early stages of the blue meme (mythic membership). However, his musical sensibility and refined sensory-motor skills enable him to play the flute with great art. His five friends love him dearly, (and they also value his musical prowess) so they continue their association as a six-some. Joe is an “official member” of Sgt. Pepper’s Friendly Hearts Club Band. When they get to be 21 years old it is common to see them together practicing, performing, and just having fun. We could say that the six individuals “belong” to the group, or that they are all “members”. At some level, this is true, but at some other level this is false.

Suppose that the five normally developed individuals are operating at the orange level. For these five, the blue level is a primitive meme that remains as an enfolded potential. If the situation calls for it, they will revert to that mode of consciousness. So, an orange group (collective holon) has in its fold the blue mode of relationship—and all the “lower” ones such as beige, purple and red. It also has all the pre-human features such as prehension, irritability, sensation, perception, impulse, emotion and symbols. This derives directly from the holarchical nature of the intersubjective mode of consciousness. And this is congruent with the holarchical nature of the other three quadrants: material structures, social structures and individual intentionality. So, we can say that a social holon at the orange level transcends and includes atoms (which participate in exterior relational exchanges at galactic levels and interior relational exchanges at physical levels), molecules (which participate in exterior relational exchanges at planetary levels and interior relational exchanges at the plerometric level), prokaryotes (which participate in relational exchanges at the level of Gaia and internal exchanges at protoplasmic levels), and so on until reaching the structure-function 2 of the nervous system (which participates in exterior relational exchanges within orange social systems and internal exchanges within a rational culture).

If one looks at the external conditions (right hand quadrants), one could logically say that the blue individual is

a member of the group. And this would be Ok, as long as one keeps very careful track of the **type** of membership that one is referring to. Joe is a member of the band in a physical way, but he is not a full member in a holonic way. The reason is that Joe cannot fully participate in the orange level (in the four quadrants). Metaphorically we could say that Joe is a radio with long-wave only while the band broadcasts in a broad band that includes encompasses long as well as short waves. The other members possess the necessary “equipment” to resonate with the whole frequency of transmissions, but Joe doesn’t. He can only vibrate in harmony with lower frequencies, the ones up to the blue level.

One can see this point more clearly by picking an extreme example. One could say that the instruments of the band are also “members” since they “belong” to the band. But that is a confusing statement. The instruments are artifacts, not holons, so they cannot be members. They are “components” of the artifact (the band) that includes them. So, writing a progression that claims, “instruments are part of the band” opens the door for some dramatic misinterpretations. The band as a holon is a completely different entity than the band as an artifact. Confusing these two meanings can end up in proposals that aim to “defend the rights of the instruments not to be fired (discarded) without due cause” or “empowering the instruments to speak up in the discussions of the band”. Instruments are artifacts, they have no consciousness. Therefore, they have no rights or voice of their own. Elevating them to the human level by a linguistic sleight of hand is a mistake as bad as reducing humans to the level of artifacts.

For the same reason, it is a mistake to elevate lower holons to the higher echelons of the holarchy. “If the instruments are artifacts and cannot “belong” because they are artifacts,” one could ask, “what about the atoms (holons) that materially form the instruments? Are they “members” of the band?” The answer is yes and no. They are members of the lowest level of relational exchange (the atomic one) that acts as a primitive for the band. But they are not members of all the other levels. Since “the band” is a higher-level holon, in a strict sense one would say that the atoms are not members.

The necessary implication (albeit offensive to the green meme's equalitarian and democratic perspective) is that Joe cannot be a full member of the band (understood as the orange social holon).

**Social Holons** (or the social dimension of a holon) are groups of individual holons that have a patterned mode of interaction. Social holons do not have localized interiority or consciousness; they have inter-subjectivity or non-localized consciousness. Neither do they have unified exteriors. They are composed of individual holons and artifacts. For example, an ant colony (as a social holon) is composed of the ants (individuals) and the physical structure of the anthill (an artifact). A company (as a social holon) is composed of the individuals (at the appropriate level of consciousness) that belong to it plus the production, management, information and all other systems that support the individuals' relational exchanges (artifacts).

One can attribute intentionality to groups, but it is important to distinguish the collective mode of intentionality from the individual. For example, a football team "wants" to win, "plans" and "executes" a play, and "is torn apart" by a series of losses. There's a sense in which this is different than and cannot be reduced to what is meant by saying that a person "wants", "plans", "executes" or "is torn apart". The critical feature of the intentionality of the group is that it is not localized in a single unit. The team "executes" the play when each individual "executes" the appropriate move that constitutes the play, but there is no such "thing" as a team that has a will of its own. It is a derived entity. All perception, emotion, thought and action occur in the interior of the individual members of the team, the ultimate locus of intentionality. There is no higher "container" for evolution than the individual human being. As Wilber said in our conversation: "as far as we know, the individual body is the highest possible external surface of any manifest holon."

In order to understand the relationship between the micro and the macro it is important to investigate the nature of social holons. The key point is that a group, a collective holon, is not a senior "evolution" that transcends and includes an individual holon. A group does not transcend and

include its members (it transcends and includes its junior holons, the group's predecessors or primitives). From the right-hand perspective, a group is a "container" of sorts for the individual entities, from the left-hand perspective, a group is an inter-subjective space of common meanings, but the group is not (from any perspective) a progressive step in a holarchy of individuals. What the group is, depending on the intersubjective level of consciousness at which it "affiliates" its members, is a holarchical senior of the junior level of intersubjective rules and meanings that govern the behaviors and interactions of its members. For example, a yellow society is "above" (in the holarchy) a green society.

In page 81 of SES, Wilber criticizes the typical holarchy that goes from nervous system to person to family to community to society to biosphere: "We notice immediately that there is a confusion and conflation of individual and social holons. That is micro- and macro worlds are confused. The social holon is assumed to be of the same type and same nature as the compound individual holon, so that they can be arranged 'above' or 'below' each other. ... This is quite incorrect." Although there are some serious problems with the ordering of the hierarchy ("the biosphere is a lower and shallower level"), the crucial problem is worse than that. "Eco-system (or 'total population') isn't a particular level among other levels of individual holarchy, but the social environment of each and every level of individuality in the biosphere. And [the above hierarchy] does not distinguish between micro and macro (or individual and social) at any level; both treat them as separate levels on the same scale. ... In other words, the individual and the social are not two different coins, one being of a higher currency than the other, but rather the heads and tails of the same coin at every currency. They are two aspects of the same thing, not two fundamentally different things (or levels). What is necessary, then, is to construct a series of true holarchies of compound individuals and then indicate, at the same level of organization, the type of environment (or social holon) in which the individual holon is a participant [member] (and on whose existence the individual holon depends). And this needs to be done in all three of the great realms of evolution—physiosphere, biosphere and noosphere." (SES 83-84)

An individual (whole, senior, superior or higher) holon transcends and includes (holonically) its primitive or root individual holon (which could also be called part, junior, inferior or lower). A collective (whole, senior, superior, or higher) holon affiliates (“memberizes”) (e.g., offers a space for relational exchange to) its member individual holons, while at the same time transcends and includes its primitive or root collective holon (which could also be called part, junior, inferior or lower). For example, a group operating in a certain level of consciousness (say, orange) affiliates its (orange) members, while at the same time it transcends and includes the blue relational mode that would affiliate members at a blue level of consciousness. At the same time, every member (individual holon) at the orange level transcends and includes the blue level of consciousness out of which he or she evolved.

Speaking more precisely, however, there are no such distinct “things” as individual and social holons. There are only holons that have “four faces” corresponding to the four quadrants. The individual interior (Upper Left) illuminates the localized subjective, conscious or intentional aspect of the holon. The individual exterior (Upper Right) illuminates the localized objective, material, behavioral and extensional aspect of the holon. The collective interior (Lower Left) illuminates the non-localized, intersubjective, cultural aspect of the holon. And the collective exterior (Lower Right) illuminates the non-localized, social, systemic and organizational aspect of the holon. The “nature” of the holon is four-fold, that’s why every mode of consciousness manifests in the four dimensions or aspects.

In page 91, Wilber gives a nice example of a three-dimensional checkers game that we can adapt to understand the Sgt. Pepper’s Friendly Hearts Club Band example. With Wilber’s permission, I have adjusted the text liberally without keeping careful tabs on what is a quote and what is not.

Imagine a checkerboard with forty beige checkers placed on it. Let each one of these checkers represent a human being operating in the beige meme (or level of consciousness). The depth of this level is one, the span is forty. Place another checkerboard over it, but leave it empty for the moment. The

depth of this new level is two, the span is zero.

In evolution, the only way to get to level 2 is through a development of level 1, and in fact all the (purple) checkers on level 2 are composed in part of the (beige) checkers from level 1—they are all holons or compound individuals. (In the terminology that I've been using, the purple checkers are developments of the beige checkers and the beige checkers are primitives of the purple checkers.) Represent this by taking a beige checker from level 1, placing it on level 2, then adding a purple checker on top of it. The new and "total holon" on level 2 thus incorporates (transcends and includes) its predecessor (the beige checker) and adds its own distinctive properties (the purple checker). If we did this, say, three times, the holons on level 2 would have a depth of 2 and a span of 3.

Now, the individual holons or checkers on level 1 (the beige meme) depend for their existence on intricate networks of interrelationships with all the other beige checkers in their environment—depend, that is, on networks of their own social holons (the co evolution of micro and macro). They exist in intricate networks of relational exchange with holons at the same level of structural organization.

But the situation on level 2 (the purple meme) is much more complicated, because the new total holon (the beige-and-purple compound holon) depends of its existence on intricate relationships on **both** levels. The beige-and-purple checkers on level 2 depend in part on their relationships with other beige-and-purple checkers—depend, that is, on ecological or macro relationships with other holons operating at their level of consciousness. In other words, the purple component depends on interrelations with the purple component of other beige-and-purple holons—depends on relational exchanges such as magical ceremonies or communal rites of ancestor worship (which are not found on the beige level and cannot be sustained by that level).

However, because the beige-and-purple checkers also have a beige component, they **also** depend on the intricate relationships that sustain beige holons themselves—depend, that is, on all the mutually sustaining relationships and

processes that constitute level 1 holons. So level 2 holons depend not only on the new and purple relationships or social holons found only on level 2, they also depend upon the prior beige relationships and sustainable patterns established on level 1 (but not vice versa: destroy level 1 and level 2 is destroyed; destroyed level 2 and level 1 beige checkers will still exist).

“So any holon, or compound individual, depends on a whole series of intricate relational exchanges with social environments of the **same level** of structural organization for each level in the individual holon. And that means that a holon of depth three, for example, has to exist in an environment that also possesses holons of at least the same depth. So any holon is fundamentally a compound individual and its same-level relational exchanges at **all** of its levels—a compound individual in a compound environment, exchanging [beige with beige, purple with purple] and so forth.” This is the meaning of “communion”: every holon is in constant relational exchange with every other holon at its level.

It is important to point out that the beige-and-purple checkers are not in the beige level. The only things in the beige level are beige checkers. The beige-and-purple checkers are beyond the beige level; they cannot be reduced to or found in the beige level. Their emergence is an example of the creative transcendence, of the thrust of evolution. It is also important to point out that the case is just the opposite: the beige-and-purple checkers contain “beigeness” as well as “purpleness”. That is why a beige checker can be “in” the beige-and-purple level. **However**, the critical point that I want to make here is that the beige checker **does not belong** to the beige-and-purple level. It is embraced by it, but it does not **fully participate** in it.

This is why a blue individual can be embraced by an orange group, but he cannot fully participate in it. He will engage in relational exchanges up to his level of depth (since every other compound individual at the orange level has blue as a “lower” checker in his or her “stack” of memes), but there is a relational space that is beyond his access. Interactions at the orange level will “pass above him” just like ultra-sound

frequencies “pass above” the resonance capabilities of the human auditory system and are, thus, inaudible—inaudible to us, but not necessarily to dogs or bats.

**Artifacts** are entities with no interior dimension. They are things that have been (instinctively or purposefully) produced by holons. Artifacts have an identifiable pattern stamped or impressed on them and they are designed to **serve a purpose**. This purpose can be active, like in the case of a “furnace that produces heat”, or passive, like in the case of a “painting that is there to be seen”. However, what gives the artifact its identity is the organizational pattern imprinted on it by its creator and by the holon that made it. Regardless of the designed objective, the artifact could be used for other purposes and still be what it was. For example, what gives a cooking pot its identity is its pattern. Even if my daughter uses it as a headdress (certainly **not** the intended purpose of the manufacturer), it is still a cooking pot.

Heaps are different than artifacts since they have no imprinted organizing pattern. But it is interesting to note that through conscious purpose, a heap can be turned into an artifact. Stanley Kubrick’s film, *2001*, starts with a battle between two groups of Neanderthals. At one point, one of fighters grabs a bone lying on the ground and uses it **as a weapon** to smash his opponent’s head. In celebration of victory, this proto-human throws the bone up in the air. In a poetic metamorphosis, Kubrick tracks the upward trajectory of the bone until it gets to a starry sky... and becomes the spaceship in which the rest of the film takes place. The meaning is clear: the birth of human consciousness is the birth of the capacity to make artifacts. From a bone that becomes a weapon to the raw materials that become a spaceship there are millennia of evolution, but weapon and spaceship share a common feature: they are artifacts born out of human’s ingenuity.

Humans are not the only holons that can create artifacts. A coral reef (the reef itself, not the eco-system), an anthill (the physical tunnels and mounds, not the ant-colony’s social organization), a bird’s nest and a beaver’s dam are as much artifacts as a building, an airplane, a computer, a sculpture, a

painting, an umbrella or an operating table. In fact there are physical, chemical, mechanical, electronic and even biological systems that are artifacts (as long as they are designed and created by an intelligence): lawn-mowers, coffee-makers, radios, TV's, batteries, nuclear bombs, laser pointers, water purifiers, vitamin complexes, vaccines, bio-weapons, drugs, etc.

There are also conceptual (logical or mental) artifacts. For example, poems, songs, novels, paintings, dances and other artistic expressions are artifacts. So are sports (football) and games (poker). Also, scientific experiments and theories are conceptual artifacts: super-string theory is an example, set theory is another, Plato's philosophy yet another. We can also say that language itself is an artifact that becomes, over time, a fundamental part of the agency of the human holons.

Artifacts can include living things. For example, a genetically engineered virus or a genetically modified crop are "hybrids": part holons, part artifacts. The creation of hybrids is a fascinating development, because for the first time consciousness is becoming sufficiently self-aware in the human holon that it can replicate its agency through the creation of other holons. Just like one can say that holons are artifacts of God consciousness, one can say that hybrids such as oil-eating bacteria are artifacts of human consciousness—or God consciousness acting through its human holon-artifact.

Every material system (e.g., a building), logical system (computer program), or spiritual system (mythology or theology) is not a holon but an artifact, a product of a particular holon. This exposes the reductionistic trick of "systems thinking" that embeds holons in networks of heaps and artifacts (the great web of reality) and consider all of them equal. But they are not: a person is fundamentally different than a group, which is fundamentally different than a computer, which is fundamentally different than the pile of rocks. It also exposes the problems of traditional systems thinking that builds such systems combining holons and artifacts and assuming that the whole (system) emerges in a way that transcends and includes the parts within its "system consciousness". But that "emergence" happens only in the

case of individual holons, not artifacts, not heaps, not hybrids and not even social holons.

For example, ants have subjective consciousness (individualized interiority), ant-hills don't, and neither do ant-colonies (they have inter-subjective interiority or culture); birds have consciousness, nests don't, and neither do flocks; humans have consciousness, buildings don't, and neither do societies. This is important because it prevents (or at least demands extreme care before) saying, for example, that a truck and a truck-driver are "parts" of a transportation system that includes and transcends them. It also prevents someone from saying that a fish is "part" (holonically) of a school, that an individual is "part" of a team or that a company is "part" of a market.

Of course, there are hierarchical relationships between artifacts. A scalpel is part of an instrument set which is part of an operating room that is part of a hospital. Or a chip is part of a wafer that is part of a CPU that is part of a computer that is part of a network. Each one of these elements can be seen simultaneously as a whole or artifact in itself (having components) and a part or component of a larger whole or artifact. But this does not make it a holon since holons, by definition, have an interior dimension that the artifact lacks. Since the artifacts are made of **organized** components, we could also call them "systems".

It is possible to say that the components of a system are also whole systems in themselves. Therefore, one can speak of hierarchies of artifacts. For the same reason, one can speak of a derivative form of agency and a derivative form of communion: every component has a derivative drive to preserve its differentiation (individuality), every component has a derivative drive to preserve its integration, to operate in relational exchange with others to make the system work as a whole. The important thing to remember is that these are putative forms of agency and communion, they don't stem from some conscious tendency of the components but from the intentions of the holon that created the system. This is why systems theory, in so far as it treats artifacts and individual holons as parts of a social system, misses the point and denigrates the importance of a holon. These leveling

process becomes the procustian bed in which all hierarchical distinctions are sawed away. The consequences of this are devastating.

First, the “stewards of the system” feel justified in doing anything “for the good of the whole”. Every totalitarian tyrant invokes this privilege to violate the most fundamental rights of the individual. Every form of coercion is based upon the equalization of all entities in a flat web-of-life. Without (holonic) depth, without hierarchy there is no way to evaluate tradeoffs between a fly and a whale (who would you save?), between a republic and a dictatorship. Thus, anything goes in the holistic flatland of subtle reductionism. Although this has been a permanent concern of his (see the latter parts of SES and A Brief History of Everything), Wilber has focused his attention on these dangers in his latest books “A Theory of Everything” and “Boomeritis”.

It is possible to gain a richer perspective on artifacts by studying them in a six-dimensional space: horizontally, one can look at their exterior, their exterior connection with the creator or user holon, and their (derived) interior; vertically, one can look at their wholeness and their partness. One needs to proceed with caution, however, understanding that these six dimensions are **different** than the four quadrants of the holonic space. Treading carefully, then, one can look at the artifact as (1) an individual whole (made of its components), analyzing its material, form and function, (2) as a component or part of a larger whole, analyzing its fit, connections and role, (3) as an objective tool, analyzing the way in which individual holons interface with it in the physical dimension, (4) as a social object, analyzing its fit and influence of the social arrangement(s) in which it arises and exists, (5) as a product (and influencer) of a holon’s intelligence, analyzing the mode(s) of consciousness that can create, use or be affected by the artifact, (6) as a cultural object, analyzing how the artifact influences the culture(s) and patterns of interaction among its members.

Artifacts have an intricate relationship with individual and social holons. For example, an artificial implant (teeth, limbs, breasts) can become a “part” of the body (individual exterior dimension) of a human being (holon). As such, they also

affect the other three dimensions (interior experience, social interactions and cultural practices regarding these people). At the extreme we could imagine what would happen if consciousness could be transferred from a carbon base to a silicon base. How would the human holon change?

Another interesting aspect of artifacts is that their user does not need to be at the level of consciousness of the designer. Just like my three-year old daughter (operating at a very low cognitive level) can play with the Franklin the Turtle Game in the computer (designed by an engineer operating at a very high cognitive level), Saddam Hussein (operating according to the red meme) can launch cruise missiles (designed by people operating according to the yellow meme). The cognitive level necessary to create a computer or a cruise missile occurs in a higher holon than the one that is necessary to use it. This creates a serious danger, an extreme version of the one created by the existence of different developmental lines within an individual consciousness.

Studies have found that scientists have a much higher cognitive level (post-conventional) than moral development (say pre-conventional or conventional). This is a problem because they may use their abilities to pursue their individual gain (precon) or group gain (con) at the (abusive) expense of other individuals or groups. For example, creating imperialistic weapons or other manipulative devices. But even if the scientist has a highly refined moral sense, nothing prevents another individual (perhaps operating within the red meme) from using the yellow-level artifacts for red purposes. For example, a gang-member can use a sophisticated gun to fight a turf war.

In a business situation, the dichotomy between the level of consciousness necessary to produce the artifact and the one necessary to use it poses important challenges for quality assurance in service delivery. Beyond the need to have a quality product and an individual capable of using or delivering its services (upper right), it is also necessary to insure that the individual operates at the “right” level of consciousness (upper left). For example, it is not enough for the teacher to know the material and the pedagogical

methods; she also has to have access to the developmental level from which the material and the pedagogy are supposed to be shared. That's why right-hand tests are not enough to ensure quality. An all quadrant, all level approach is necessary.

Some people claim that artifacts (tools) can affect the user's consciousness impelling his development to a higher level. For example, the use of certain meditation practices can lead to an evolutionary leap. But this is not guaranteed. Someone experiencing a transpersonal meditative experience through access to the psychic realm may interpret that experience within his current meme, appropriating it to reinforce it. For example, a purple person might believe that a spirit talked to him, a red might believe that he has been anointed to rule others, a blue might think that an angel came to prove the truth of his beliefs, an orange might rationalize it as a hallucinatory consequence of hyperventilation, and so on. On the other hand, under careful guidance, it is possible to use artifacts to nudge people to a higher level of consciousness. For example, certain linguistic tools such as inquiry, dialogue and interest-based negotiation can give orange characters a taste of green acceptance. Some other techniques such as honorable complaints, clean elevation and property-rights resolution of conflict can give green characters a taste of yellow.

Artifacts become embedded in social holons. They become media of relational exchange that influence the development of the holon. For example, a certain mode of consciousness creates money as an economic medium of exchange, but money then profoundly affects the character of the society that created it in ways that nobody could have foreseen. The arising of a monetary economy has profound implications for the society in which it appears. The same phenomenon occurred with the computer and the Internet. The inventors of this artifact could not have foreseen how it would become the medium in which new interactions take place and reshape the consciousness, culture and organizational forms of a holon. Perhaps the ultimate artifact with transformative power is language itself. Language becomes the articulator of a mode of consciousness, and through its filters members of the culture learn to experience reality in particular subjective

and inter-subjective ways.

Wilber believes that social holons are a mixture of individual holons and artifacts. One of the foundations of all social interaction is language. All signifiers of communication (words, signs, etc.) are artifacts. Linguistic communication can be seen as a process through which individual holons share artifacts that enable the relational exchange and the arising of intersubjectivity. An important part of human collective intentionality comes into play through the agency of individual holons mediated by linguistic artifacts. Two computers cannot develop intersubjectivity since they cannot exchange meanings, only signifiers without signifieds (computers don't have associative intentionality). A company, on the other hand, is made of holons that share a social intentional space (semantics), in part through artifacts (syntax). (There is also the pure unmediated co-presence of subjects grounded in the full presence of Spirit, or to say it in other way, the ever-present presence of Presence.)

But the shared syntax does not define the holon (or the level of operating consciousness). The same grammar system can operate within different memes. The only way one can see the signified is if one is at the particular level of development that can experience the referent (in his consciousness). Otherwise the signifier has no referent. For example, my one-year-old daughter (who operates at the sensory-motor level) can see the dog, but she can't understand the dog's name "Laila" and even less the class name "dog". She just doesn't have the equipment to do that—even though she can "hear" the sounds "Laila" and "dog" at the sensory-motor level. My six-year-old son can "grok" what a "dog" is, but he cannot fathom what the hell I'm talking about when I explain to him that there are "imaginary numbers like the square root of minus one and irrational numbers like pi or e". Perhaps in seven or eight years, when he acquires the necessary mathematical skills, he will be able to grasp what these mathematical terms refer to. By the same argument, trying to discuss "samadhi" with somebody that does not have the referent in his consciousness is impossible—like trying to describe the experience of sexual intercourse to a five-year old or the taste of chocolate ice cream to a Kalahari bushman.

In SES (p. 272) Wilber elaborates on these ideas. These crucial paragraphs, which demonstrate the intimate connections between artifacts such as language and holons such as human beings and their groupings, are worth quoting at length: “...(A)ll signs exist in a continuum of **developmental referents** and **developmental signifieds**. The **referent** of a sign is not just lying around in “the” world waiting for any and all to simply look at it; the referent exists **only** in a **world space** that is itself **only** disclosed in the process of development, and the **signified** exists only in the **interior perception** of those who have developed to that world space (which structures the background interpretive meaning that allows the signified to emerge). **No amount of experience** by the conop child will ever show her the meaning of an “as-if” dog, because the as-if dog does not exist **anywhere** in the conop world space; it **exists** only in the formop world space, and this it is a referent that demands a developmental signified to even be perceived in the first place.”

“To take it a point at a time: the **signifiers** of signs are always and only physical [they are artifacts], they are always material components [parts of the artifactarchy of language] in which no meaning resides at all (Saussure’s point); and because the signifiers are always physical, even my dog can see them (and, of course, sees no meaning in them; or rather, sees them from a sensorimotor level, as something to eat, perhaps). That is because the actual **referent** of a sign exists only in a **world space** (sensorimotor, magical, mythical, mental, etc.) that is itself disclosed only at a particular level of depth (preop, conop, formop, etc.). And in the same way, the corresponding **signified** of the sign exists only in the **interior perception** of those who have developed the **requisite depth** (in a context of cultural and social practices, or an intersubjective community of the same-depted).” (Emphasis in the original.) (See also note endnote 14 in p.599 and note 12 in the chapter of Integral Art and Semiotics on page 313 of *The Eye of Spirit*.)

For Wilber, referents exist in a cultural world space. In order to develop the competences necessary to understand—to experience the referent at its appropriate level of

significance—one needs to participate in an appropriate culture. And participation in a culture is much more than simply being physically located in the midst of people who live in that culture. To “be in” the culture (holistically) one needs to operate consciously and objectively at the appropriate level of relational exchange. This is fundamental to use the linguistic artifacts since their references exist in the cultural world space (lower left) that one can only inhabit when one has the appropriate level of inner and outer individual development.

So two conditions must be fulfilled for meaningful communication: the individual must “belong” to the culture, and the culture must have the referents. For example, no matter how far his mind developed, my son could never learn about imaginary numbers if he had been born in 2000 BC. That culture could not afford its members access to the referential space where imaginary numbers arise. Translating this insight into a business example, one can see a company’s culture as a medium in which certain experiences can and others cannot occur. This culture will be heavily influenced by the artifacts, which it makes and which make it. For example, the buildings, the administrative processes, the accounting systems, the machinery and production systems, the information technology, etc.

**Heaps** are piles (that can be made of other heaps, holons or artifacts) that have no interior dimension and no conscious design, purpose or recognizable pattern. For example a dune (pile of sand) is a heap, a rock is a heap, a mountain of trash is a heap, a bunch of dead leaves is a heap, a puddle of water is a heap, etc. Each grain of sand may be a holon (atoms, molecules, crystals), but the accumulation of them is not. Each crystal is a holon, but the set of them that constitutes the rock is not. By the same token, a pile of rocks is a heap, not a holon. Each piece of trash could be an artifact, but throwing them all together does not make a “larger” artifact, it makes a heap. Each dead leaf is a heap (composed by dead cells made of molecules). And one could look at the set of societies living on earth in 10,000 B.C. and conclude that they make a heap since the societies as such had no relational exchange with each other. Putting them in the same category doesn’t make that category a holon

(although, in a sense, the category “contains” all its members). However, one needs to understand that when these societies come in contact with each other and their modes of consciousness interpenetrate (through trade or war), a new holon develops; a holon with its four-fold nature: cultural practices, social systems, modes of individual consciousness and surface behaviors (and artifacts).

Since heaps can be made of holons it is easy to make the mistake of attributing consciousness (or interiority) to them. This is because holons have interiority. For example, atoms have prehension, so it is possible to say, “the atoms in the rock have consciousness (or prehension)”. But it would be incorrect to jump to the conclusion that “the rock has consciousness”—Wilber calls this the fallacy of “popular panpsychism”. The key to understand a heap is to see that there is no relational exchange between its components (above the base physical level of being piled against each other): a bunch of logs (dead trees) is a heap, but a group of live trees is a social holon (forest). The difference is that there is a level of interaction between the live trees that transcends the mere interaction of their atoms (which definitely interact too in the heap). Since the atoms are holons, there is a social exterior dimension to them: the material world; but this is not enough to say that the heap is a collective holon.

One can find a relationship of successive inclusion in heaps. For example crystals can be seen as wholes by themselves and, at the same time, as parts of rocks. Rocks can be seen as whole in themselves and, at the same time, as parts of mountains, and so on. This inclusion is not “holonic” but “heaptic”, and what gets created is a hierarchy of heaps, or “heaparchy”—which is quite different than a “hip” hierarchy. A heap could become a part of an artifact but then it would stop being a heap and would become a component. Imagine a sand-clock, where the heap of sand is a component of the artifact. That turns the heap into an (component) artifact. Similarly, a pile of lettuce is a heap, but could become a component in a carefully prepared “Caesar Salad”—a culinary artifact.

The defining feature of a heap is that it neither has interiority (or it would be a holon) nor a pattern consciously imprinted

upon it by a holon (or it would be an artifact). It can, however, contain holons that have interiors. But the heap itself, as heap, has no interior. That does not mean, however, that the heap cannot become an “element”, “facet” or “aspect” of a holon. A mountain of trash, for example, is part of a social holon, just like a building. Although the mountain of trash has not been “consciously and purposefully” created, it is really the product of a certain mode of consciousness—as archeologists well know. For example a green meme with formal operational cognition will produce different quantity and quality of trash than a red meme at the concrete operational level of cognition.

A six-fold approach to heaps, similar to the one presented above for artifacts, can yield fruitful insights. But it is crucial to understand that these aspects are totally different than the four quadrants of holons.

### **Organizational Application**

Suppose, as illustrated in figure 1 that there is an individual operating according to the red meme, which is a member of a group that operates in an orange mode within a company that has yellow leadership. One can say that the individual is “embedded” in a team that is “embedded” in a company. But that is a small part of the story. It would be extremely reductionistic to focus only in that aspect of embeddedness (physical or administrative). If we look at the aspect of “conscious grasping”, of “meaningful participation” and of “holonic organization”, the picture that emerges is very different.

Like in the checkers example, the individual holons are interacting at each and every level of their capability, and they do so according to rules and meanings that shape the corresponding social holons. For example, all individuals are interacting amongst themselves at the beige level (in fact, all the atoms, molecules, cells, organs, etc. are interacting, but let’s leave that out of the story). Their interactions occur in accordance to some mode of relational exchange that we call a (beige) social holon. Thus, every individual in the company is a member of the beige social holon (and so is Fido, the company’s mascot. As we go up to red, Fido drops out of the

picture. He is not a “member” of this set of relational exchanges, because he can’t consciously grasp this level. But all individuals are participants up to red (we’re assuming there are no purples). When we go one level up, we see that there are **some** individuals that can relate with each other at the blue level, so that all of them will participate in the blue social holons that are enfolded in the holarchical development of team and company social holons. However, those in red **will not** belong (in the holonic sense) to the blue social holons, although they will still belong (in the physical and administrative sense) to the team and the company.

As we continue the evolutionary path, we see that more and more individuals drop out of the relational exchange—as Wilber says, “more depth, less span.” In fact, the team in question (which operates at the orange level) can only be a partial member of the social holon that the company is. The team can “participate” in the culture of the company only up to the orange level (just like the dog can “participate” only up to the beige level). That means that the leadership of the company will not be able to relate to the team above the orange level simply because there is no commonly developed world space for such meaningful exchanges. The team is simply not equipped with the hardware and software necessary to send and receive in the green and yellow frequencies. It could be possible that there exists a yellow individual in an orange team (in this case the individual could grasp the yellow messages of the corporate leaders), but he will do so as an individual, not as a “member” of the orange team.

Understanding these situations is fundamental to the study of leadership; particularly the integral leadership that attempts to create a “healthy” company. Part of the definition of this integral health is the evolution (Eros) towards higher levels for **every** individual, in **every** group, at **every** level of the spiral. In order to do this, the leader needs to have this “surplus” or “extra” consciousness and the drive of agape (reach down and embrace) that can fuel the drive of Eros (reach up and transcend) that lies within each holon. But the leader needs to understand that the lower holons **cannot** yet be members of the upper echelons of the social holon in

which he or she relates to others who share his mode of consciousness.

In certain situations, being “democratic” or “equalitarian” is anti-developmental. In a hierarchy there is a clear sense of what is up (more developed) and what is down (less developed). As we mentioned above, the majority of US citizens in the 1770’s would have not affirmed that “all men (including blacks) are created equal and are endowed by their Creator of inalienable rights such as life, liberty and the pursuit of happiness”. That world-centric statement went far beyond the conventional ethno-centric level of consciousness prevalent in the population. Majority vote is never guarantee of wisdom, that’s why the founding fathers framed our representative democracy within the constraints of a republic where collective decisions are constrained by individual rights.

### **Organizations as Artifacts**

An organization is not just a physical artifact; it is also a conceptual one (legal, financial, etc.). From this perspective it makes sense to understand a hierarchical evolution of these artifacts congruent with the hierarchical evolution of the holons that design them. Commons and Richards trace the cognitive development of the individual from the capacity to grasp entities, to the capacity to grasp systems of interrelated entities, to the capacity to grasp systems of interrelated systems (of interrelated entities), to the capacity to grasp systems of interrelated systems of interrelated systems (of interrelated entities). Along this line, we can trace the development of organizational forms.

In the beginning, there is a single individual trying to accomplish a task; it could be hunt a zebra or establish an e-store of rare stamps. As the individual evolves (in his consciousness and in his vision for his endeavor) he may seek the help of others and create a group of people associated in the pursuit of a common goal. This is the transition from the individual to the team. Furthermore, this team may be organized according to a division of labor. Each member specializes in one aspect of the business, while the team has some mechanisms to integrate and align the

individual efforts towards the common purpose. For example, Harry can take care of logistics, Mary of accounting, Georgina of customer relations, and so on.

If the business continues to grow, the individuals performing the functions may not be able to cope with their (sub-)tasks all by themselves. They would need then to hire other people to work with them in the function. So now Harry would create a team that takes care of logistics, Mary would have a team of accountants; Georgina would have a team of customer reps, etc. Each one of these teams is a further differentiation, which requires further integration. The obvious way in which this happens is through a hierarchy. Harry is the manager of logistics and his team reports to him, Mary is the manager of accounting, and so on. At the same time, the integration mechanism between the managers needs to stay up to speed to cope with the centrifugal forces that will pull each one of them to focus excessively in their individual tasks—perhaps subordinating the goal of the company.

The next steps occur along the same sequence of differentiation and integration. Harry's team would distinguish between warehousing and transportation, perhaps creating two supervisors to take care of the different functions, each one of them with a team of workers as direct reports. Mary's team would distinguish between financial statement preparation and tax accounting, perhaps creating supervisors... Again it is critical at every juncture to balance the new differentiations with new integrations. Otherwise, the company will tear itself apart. The need for hierarchical integration is derived directly from one of the most basic principles of systems: In order to optimize a system one needs to sub-optimize the sub-systems; if one attempts to optimize any sub-system (or all of them), one will end up sub-optimizing the system.

Consider a car, one desirable feature is a high gas-mileage ratio, so the car companies have engineering departments whose mission in life is to extend the gas-mileage of the car. Another desirable feature is low noise and vibration, so the car companies have engineering departments whose mission in life is to reduce the noise and vibration of the car. The problem is that a heavy car (lots of steel) is a quiet car with

a smooth ride, but a heavy car is a low gas-mileage car. On the other hand a light car is a high gas-mileage car, but it is likely to be noisier and not as smooth. There are millions of tradeoffs like this in any situation. When there are no integration mechanisms, the sub-systems will end up making decisions that sub-optimize the system. That is why it is so important to maintain clarity at all times of the common goal, the vision that makes the company one company. (And of course, to align the performance measurement and incentive systems to this goal).

This focus on the common vision demands a high level of cognitive development. In the pre-conventional and early conventional stages of consciousness, there is a narcissistic attachment and grasping to that which is close: **my** goals and interests, **my** activity, **my** team, **my** identity. Without developing beyond these levels it will be impossible for the company to operate at its best. The parts will optimize themselves, and the whole will fall “in the hole”. This is a fundamental requirement of an integral organization, but its investigation exceeds the scope of this note. Here, I’m only trying to present an example and suggest some provocative ideas, so I’ll defer further discussion of this topic to another paper. (See “Integral Business”, forthcoming)

The point that I want to make is that one could write an “artifactarchy” going from the team to the function to the company to the conglomerate to the industry to the world. It is only necessary to remember that these are not holons but artifacts. And that the inclusion is not holonic but artifactic.

## **Integral Health**

If the integral model is a map of the territory, the notion of health is the “north” in that map. Integral health is the goal to which the integral leader will strive. We can define this health at three levels: (1) Horizontal, (2) Vertical, (3) Essential. Horizontal health is the balance and harmony of the four quadrants at each level. For example, a blue holon can be balanced in the I, We, It and Its dimensions; and so can an orange, a green, or any other one.

Vertical health is the capacity of every holon to dis-identify from its current attachment (loosen the identificatory structures), differentiate, transcend (develop to the next level) and integrate in a unifying embrace the old structures. That means that every individual, every group and the company itself are engaged in a evolutionary path. (And at a certain post-post-conventional level, coral perhaps, the company becomes concerned with the integral health of its customers, suppliers, communities, etc. This would give rise to a bodhisatvic corporation.) This is the balance of Eros and agape, the constant differentiation and integration that both negates and preserves each and every level of the spiral in its evolution.


Essential health (or non-dual health) is the balance of the evolutionary impulse to improve and the knowledge that it's all right as it is. As Nisagaratta Maharaj said, everything is perfect just as it is... and there's plenty of room for improvement. Essential health is the ability to grasp simultaneously the presence of the Divine as the immanent wood that exists as every rung of the ladder and the Divine that is the ultimate (transcendent) level above the last rung of the ladder.

### **In Summary**

If the pattern of organization is generated from within, it is a holon, if it is generated from outside (by a holon), is an artifact, if there is no pattern, is a heap. If it is a (compound) individual, it is a micro or individual holon. If it is a network of interactions organized by cultural practices and social systems it is a macro or social holon. Holons emerge, transcending and including their primitives in a process of evolution. Artifacts are created by holons, which organize their components (other junior artifacts or holons) in purposeful ways. Heaps appear by accumulations of stuff (possibly generated by artifacts or holons).

When one confuses these entities all sorts of problems arise. These are "unsolvable" problems because they are not real; they exist only in the mental confusion of the speaker. These problems are only "dissolvable" by a more correct interpretation. The Integral Institute is trying to forge such

new notions of integral health in areas such as psychology, education, ecology, criminal justice, politics, business, art, etc. based on a more adequate framework that avoids these problems all together.

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Even everyday people succeed  
with **everyday**  
**wealth**

