

Can Science lead us to a Definition of Art?

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The whole science of aesthetics fails to do what we might expect from it, being a mental activity calling itself a science; namely it does not define the qualities and laws of art [...]

L. Tolstoy, *What is Art*, 1899

Introduction

If Plato's discussions count as a formal beginning of attempts to define art, more than 2000 years have gone by without reaching an agreement. Defining art has proved to be so difficult that Lorand ([2000]: 250) was inspired to write that every «proposed definition has been demolished, renounced, and its effectiveness denied», and Munro ([1949]: 5) to claim that the arts «are too intangible and changing to be defined or classified». Scientists, taught the importance of definitions, do not attempt to objectively define the term (see Bullot, Reber [2013]; Tooby, Cosmides [2001]; Wallin, Merker, Brown [2000]). Richard Alexander ([2005]: 5), a scientist and astute thinker, wrote that he wanted to be vague in using words like art because he did not want to limit what was discussed. The failure to define art is surely part of what led Tooby and Cosmides ([2001]: 7) to write that the arts are one of the realms of human behavior «that have resisted any easy or straightforward explanation in Darwinian terms».

Over 60 years ago, Hodin (1951) argued that science, at that point in time, did not permit the development of a theory of art. We assume that scientific theory, specifically modern Darwinian Theory, is now at a point at which, as Denis Dutton (2003) pointed out, it can begin to contribute to an understanding of the function of art and place a limit on philosophers' ability to speculate. As this understanding depends, however, on reaching an agreement about art's definition, I briefly review attempts to define art and then critically evaluate Dutton's (2006) 12-property cluster theory. Dutton's list of properties was selected as it holds promise for helping us identify art's fundamental

properties because, first, his list is built upon widely accepted thinking in aesthetics and the properties he proposes are compatible with those found in other cluster theories. Further, Dutton's list is one of the few that purports to be able to broadly account for works of art found around the world, a feature that is necessary if we are to come up with a definition that works universally. Finally, Dutton, who is known for his appreciation of evolutionary approaches, appreciates that before we can identify what art does – that is, its possible evolutionary function – we need to define what art is.

Background

Plato's definition specified that art replicates; that is, it imitates reality. Aristotle agreed, defining art as mimesis, but adding the criterion that art also had an effect – it was cathartic. Definitions proposed since have built on this thinking, focusing on art as representational (imitating reality); as formal (as was implied in Plato's discussion, art has such things as line, color, pattern, symmetry or a certain form); and/or as expressive (it expresses – and arouses – emotion). Disagreements over these characteristics and the relative importance that each property has, have split discussions of art's definition into two basic groups, one of which either ignores the need for a definition or argues that the term cannot be defined. The other camp attempts to devise a widely accepted definition of the term.

Into the first category falls the non-essentialist position, which postulates that there are no necessary and sufficient properties to art – all we can find are similarities and relationships, all we can do is describe, not define (Wittgenstein [1953]; Weitz [1956]). Dismissed by many as not scientifically useful, this approach has been said to be «too vacuous to carry the explanatory burden» (Davies [2004]: 297).

The second group argues that if we examine a word's various usages, we will find some element (or elements) that is common to all of them, but not to other things, and we will be able to isolate that element as the essence that defines the category of things (McEvilley [1992]: 166). Dickie ([1971]: 41), for example, explained that definitions should attempt to «specify the necessary and sufficient conditions needed for something to be a work of art. A necessary condition for being an X is a characteristic which any object must have in order to be an X. A sufficient condition of an X is a characteristic, which, if an object has that characteristic, it is an X».

Worded more skeptically, «either all works of art [...] have some common quality or when we speak of 'works of art' we gibber» (Bell [1958]: 79).

In trying to identify art's necessary and sufficient properties, one problem, pointed out by a number of scholars, including Dutton (2006), is that it is not always clear if we are trying to define objects (e.g., sculptures, paintings, decorated objects), performances (e.g., dance, storytelling), psychological underpinnings, evolved proximate or ultimate functions, the behavior of making and/or viewing art, or the emotional response aroused by art, or all or some of these.

Further, the term is often used metaphorically. Darwin (1871), as one example, who, according to his son, Francis, regarded himself «as an ignoramus in all matters of art» (Darwin [1887], 83), used the term art frequently in *The Descent of Man* (1871), writing, for example, about the «art of poetry» (*ivi*: 44) as well as the «art of making fire», the «art of grinding rough flint tools» (*ivi*: 176), the «art of enumeration» (*ivi*: 194), and the «art of writing» (*ivi*: 195). He also claimed that «language is an art, like brewing or baking» (*ivi*: 53) and that barking was a new art that distinguished domesticated dogs from ancestral wild species¹. Similar usage of the term art, led Ruchstuhl (1916) to write: «What do we mean by the word-Art? The word has been used to designate everything under the sun from “The Art of Poetry”, to the “Art of Goose Washing”; from “The Art of Living” to the “Art of Dying”, until every charlatan has his pet definition which he knows he cannot successfully defend».

This metaphorical usage of the term, however, may help provide important clues regarding art's definition. To illustrate this point we turn again to Darwin ([1871]: 59) who went on to explain that language is an art, «in the sense of its having been elaborately and methodically formed». Art, in other words, is an activity that requires, or can be improved by, skill and practice, a proposal that we will further examine in this paper.

All definitions that attempt to specify art's necessary and sufficient characteristics have been criticized and most have been dismissed. Tolstoy's definition has been criticized because he may have developed it to serve his own aim of social reform (Ruckstuhl [1916]: 75). Bias *per se*, however, is irrelevant to the accuracy of a definition because bias is only part of their *origin*. While bias can lead to an inaccurate definition, it also can lead to an accurate one; the accuracy or inaccuracy of a definition is determined not by showing a person was biased but by whether or not it fits the observable facts.

Other definitions have been dismissed because they are said to be limited; as Dutton ([2006]: 375) pointed out, many of these theorists «began with a particular paradigm, meaning they want to explain a particular form of art (Greek tragedy, say or abstract

music)», and thus their definition cannot be more widely applied to account for other forms of art. The institutional theory position, which specified that X is an art object if it is displayed in an art space (Danto [1964]), was criticized because, clearly, not everything displayed in an art space is art (e.g., the fire alarm on a wall) and public art is displayed outside art institutions. The proposal that the significant form in art (Bell [1958]) arouses an aesthetic emotion has been criticized for its apparent circularity and because it is not clear there is a particular emotion associated only with viewing art. For these and other reasons, «the history of the philosophy of art», to quote Dean ([2003]: 29) «is littered with failed attempts to provide definitions of art».

As there has been no widespread agreement on what art's necessary and sufficient properties might be, recent attempts to define art have resurrected the non-essentialist position and proposed what is called a cluster theory. A cluster theory provides a list of properties none of which may be a necessary condition for something's being art, meaning that «there is no property that all objects falling under the concept must possess» (see Dutton [2006]; Gaut [2005]: 274; also Anderson [1979]; Blocker [1994]; Moravcsik [1992]). However, all or some combination of the properties would together be sufficient to refer to something as art; X is art by virtue of satisfying an often unspecified number of criteria.

Dutton's (2006) cluster theory has twelve properties – *Direct Pleasure, Skill or Virtuosity, Style, Novelty and Creativity, Criticism, Representation, Special Focus, Expressive Individuality, Emotional Saturation, Intellectual Challenge, Art Traditions and Institutions, and Imaginative Experience*. While he does not refer to these properties as design features, or as universals, he sees them as such as he claims they are useful for studying art across cultures. Dutton ([2006] 369) begins his discussion by pointing out the limitations of these properties and acknowledging that some of the properties are more central to a definition than others; Skill or Virtuosity, for example, is a more important property than is Criticism. Keeping these caveats in mind, now turn to an evaluation of Dutton's properties using the definition criteria outlined below.

Dutton's 12 properties of art

Assumptions. – Given the complexity of art – art takes various forms (e.g., music, storytelling, dance, plastic arts) – it is important, borrowing from Hartwig (2008), to avoid an implicit definition, as resulting studies will «usually be highly be confused, precisely because it [the term] has not been thought through comprehensively (ix). Art forms, like any other observable phenomena, can be defined (see Boyer [2004]) and a

scientifically rigorous definition will specify necessary and/or sufficient properties. Because art, according to the evidence available, is both ancient and widespread, it may be an adaptation. Before we can begin to identify the effect of art that promoted its persistence – why art is adaptive – a definition is needed.

Criteria for evaluation

Identifiable: Are the properties identifiable by the senses? This topic, admittedly, has been the focus of much philosophical debate, criticized, among other things, for being too reductionistic. Even though art may prove to be much more than its visible characteristics, a definition that focuses solely on characteristics that are clearly identifiable provides a strong position for coming up with a testable definition.

Clarity: Are the terms clearly defined or have clear referents? Writing in a simpler time, Jones ([1946: 2-3) explained that the primary aim of science writing is to inform and it does this by stating facts accurately, using words with identifiable referents and avoiding devices that appeal to the emotions, such as exaggeration or the use of a metaphor that can be open to many interpretations.

Non-functional: Does the property refer to what art is rather than what art does, its function? Establishing the function of something still leaves open to debate the question of what that something is. Spiro, in his argument against functional definitions of religion, wrote: «*unless religion is defined substantively, it would be impossible to delineate its boundaries*» ([1966]: 90; emphasis in original).

Cross-cultural: Are the properties found in objects made across cultures that we refer to as or that closely resemble art objects? This criteria, as Munro (1951) pointed out is important because once it is based on the cross-cultural record, «the history of aesthetics will have to be completely rewritten from a much more cosmopolitan point of view» (*ivi*: 164); «All aesthetic theory before the late nineteenth century was cramped and distorted by ignorance of exotic and primitive styles of art» (*ivi*: 166).

Description: Are the properties identifiable by the senses?

As art, during the past few centuries, has been associated with the term aesthetic, which, etymologically, is concerned about feelings or emotions (Fagg [1973]), definitions of art often focus on emotions art is said to arouse. A number of Dutton's properties refer to and/or are described in terms of emotion.

In regard to the property *Direct Pleasure*, Dutton writes ([2006]: 369), «The art object – narrative, story, crafted artifact, or visual and aural performance – is valued as a source of immediate experiential pleasure in itself, and not primarily for its utility in producing something else that is either useful or pleasurable». He goes on to write, «grasping the detailed coherence of a tightly potted study can give pleasure [...] the composition of a landscape painting can induce pleasure; surprising harmonic modulations and rhythmic acceleration can give pleasure in music, and so forth». The «enjoyment of artistic beauty often derives from multilayered yet distinguishable pleasures that are experienced either simultaneously or in close proximity to each other. These layered experiences can be most effective when separable pleasure are coherently related to each other, or interact with each other – or roughly put in the structural form, color, and subject matter of a painting, or the music, drama, singing, directed acting, and sets of an opera».

The property *Emotional Saturation*, Dutton ([2006], 369) writes, refers to the fact that in «varying degrees, the experience of works of art is shot through with emotion. Emotion in art divides broadly into two kinds». While these two kinds of emotion are «fused» we first find «emotions provided or incited by the represented content of art – the pathos of the scene portrayed in a painting, a comic sequence in a play, a vision of death in a poem. These are the normal emotions of life, and as such are the subject of cross-cultural psychological research outside aesthetics [...]. There is a second, alternative sense, however, in which emotions are uncoupled in art: works of art can be pervaded by a distinct emotional flavor or tone [...] the work's emotional contour, its emotional perspective, to cite to common metaphors».

In regard to the property, *Intellectual Challenge*, Dutton (2006) writes that «works of art tend to be designed to utilize a combined variety of human perceptual and intellectual capacities to a full extent; indeed, the best works stretch them beyond ordinary limits. The full exercise of mental capacities is itself a source of aesthetic pleasure [...]. The pleasure of meeting intellectual challenges is most obvious in vastly complicated art, [but] even in works that are simple, on one level, such as Duchamp's readymades, may deny easy explanation and give pleasure in tracing out their complex historic or interpretative dimensions»

Imaginative Experience, Dutton ([2006]: 373) claims, is perhaps the most important characteristic of art because it «decouples imagination from practical concerns, freeing it, as Kant instructed, from the constraints of logic and rational understanding». «Works of art», he continues, also borrowing from Kant, «are imaginative objects subject to

disinterested contemplation». Logic and rational thinking, he argues, are constraints limited by their association with the objective and the practical. He sees imagination as a distinct mental activity, one that draws on emotion.

When describing the property *Representation*, Dutton ([2006]: 371) writes that «art objects, including sculptures, paintings, and oral and written narratives, and sometimes even music, represent or imitate real and imaginary experiences of the world». While representation would seem to be identifiable, he then turns his description of representation to a discussion of emotion, referring to Aristotle who observed that «human beings take an irreducible pleasure in representation» (*ibid.*). We not only experience pleasure, Dutton explains, in a realistic painting, «we can take pleasure in how well a representation is accomplished and [...] in the object or scene represented» (*ibid.*). While representation is potentially identifiable, contemporary forms of art – color field, for example – do not clearly represent anything.

Dutton also describes the property *Skill and Virtuosity*, which would seem to be easily identifiable, in terms of emotion it arouses. He writes, «skill exercised by writers, carvers, dancers, potters, composers, painters, pianists, and so forth can cause jaws to drop, hair to stand up on the back of the neck, and eyes to flood with tears. The demonstration of skill is one of the most deeply pleasurable aspects of art» (*ivi*: 369). As skill is, he admits, appreciated not just in art, but in many aspects of life, what is unique about skill in art is the unique, aesthetic emotion that only occurs in response to seeing that skill is exhibited in the production of the art.

When describing *Skill or Virtuosity* Dutton writes that the making of an «object or performance requires and demonstrates the exercise of specialized skills» (*ivi*: 369). He goes on to make several claims that are potentially testable using the cross-cultural record. First, he writes that «these skills are learned in an apprentice tradition in some societies or in others may be picked up by anyone who finds that she or he “has a knack” for them» (*ibid.*). Second, he claims that skill is universally noticed and admired. A final claim is that «Almost every regularized human activity can be turned competitive in order to emphasize the development and admiration of its technical, skill aspect» (*ibid.*). In other words, he recognizes that skill involves competition and admits that the admiration of skill is not limited to art. We discuss these below.

Discussion: Are these properties identifiable by the senses?

The problem with emotion. The emotion most often said to be associated with making and viewing art is pleasure, and while this is not the most important problem we face in

using this property to define art, art also can be said to arouse grave feelings or leave the viewer bewildered, confused, non-plussed, unsure of any emotional reaction (Anderson [1979]). Indeed, art can be said to arouse no emotions as it draws «no aesthetic interest» (Brothwell [1976]).

An additional problem is whether or not we can actually demonstrate that there is an «aesthetic» emotion, associated solely with art. Dutton admits that the emotions experienced with viewing art are not unlike those said to be aroused by other things. When describing the property *Direct Pleasure*, for example, he admits that the emotion derived from art [...]» is familiar in many other areas of life, such as the pleasure of sport and play, of quaffing a cold drink on a hot day, or of watching larks soar or storm clouds thicken» (Dutton [2006]: 369). When describing the property *Skill and Virtuosity*, he writes, «High skill is a source of pleasure and admiration in every area of human activity beyond art» (*ibid.*). In regard to *Emotional Saturation*, he writes, «Many ordinary, non-art life experiences – falling in love, watching a child take its first steps, attending a funeral, seeing an athlete break a world record, a row with a close friend (*ivi*: 372).

One of the two most important problems related to using emotion as a defining property of art, is the fact that emotions are not readily identifiable. While we seem to be approaching methods that will allow us to identify emotions – the release of hormones associated with emotion or places in the brain where they occur – current discussions of emotion rely on self-report, which is a notoriously weak research method. It is important to understand, however, that while subjective emotions should be ignored in defining art scientifically, this does not indicate that emotion is irrelevant to the study of art. I assume that art attracts us because it interests us, presumably by provoking some physiological response in our brains, including responses commonly referred to as emotion. However, even if we could demonstrate that an emotion, and point out which emotion, is associated with art, we still would still have to show that those emotions are universal and distinct from emotions aroused by other events. Further, we still would have to identify precisely what arouses the aesthetic emotion – is it aroused by the color, pattern, form, or technique, style, or by certain sounds or movements, or by the combination of certain sounds and certain movements?

The most important problem that we face when with defining art in terms of the emotion it arouses, is that we are focusing on what art does – its effect or function of art – not on what art is. As mentioned earlier in this paper, if we really wish to know what art does, we first must know what art is.

Turning now to the cross-cultural record and the universality of these properties, key words such as art and emotion and aesthetic emotion were used to search the 258 culture categories included in the *Human Relations Area Files (HRAF)*. Aesthetic appreciation is mentioned in only a few ethnographic studies and in those studies that emotion was said to be aroused not by art, but by rituals. Among the modern Greeks, for example, aesthetic appreciation was said to be associated with rites of passage, including funerals and marriages (Herzfeld [1993]). As the term aesthetic is one that may not commonly be used by ethnographers, the terms «emotion and art» were also used in a search. Again, these terms also pulled up descriptions of rituals; Speck writes ([1935]: 193), for example, that the function of the quasi-ritualistic games played by the Naskapi hunters of the Labrador Peninsula is «comparable to that of decorative art, since the emotional pleasures of the arts stand forth as nourishment to the soul». Speck admits that he might be accused of telling the reader what Naskapi thinks (*ivi*: 193). While he denies the possibility, he provides no solid evidence to back up his claim. This discussion, however, points out an interesting feature of much of the ethnographic data. The thoughts, beliefs, and emotions of the people being studied are based solely on the anthropologist's interpretation. Any subjective emotions underlying these behaviors is merely hypothetical, the opinion of the ethnographer (Rappaport [1999]; Steadman, Palmer [2008]).

Before we leave this discussion, the reader should note that the descriptions focusing on non-verifiable properties – emotion & intellect – are likely to lack clarity are those, such as emotion and intellect. Even though artists and art critics are comfortable with such terminology, it generally falls into the humanities or, the quasi-art-quasi-science category (Zald [1991]). A small poll of twenty studio artists and art historians regarding Dutton's discussion of *Emotional Saturation* indicated that they felt that they understood the meaning. When asked to explain what he meant, however, the majority was at a loss for words. One participant (personal communication, September 27, 2011), who bravely attempted to explain it, wrote: «"Science" relies on left-hemisphere analytic type of thinking. There's a whole other hemisphere that perceives the world, but it is mute and its perceptions are disregarded by the rational, analytic left hemisphere. A poem does not "mean" what it says if one were to reword it in "plain language". It is the "tone" that the whole generates, apart from the semantic "meaning", that Denis is talking about here, I think».

This description concluded: «I don't think that Denis is a scientist nor does he try to be». While the implication here is that he should not be held to standards of clarity, as

Dutton himself recognized (1995), social scientists should «defy and eschew the jargon and willful obscurity which so often replaces hard thinking in theoretical writing» (*ivi*: 43). What both Dutton and this participant may be trying to communicate is that *Emotional Saturation* involves elements of what we might call absorption, meaning, perhaps, that our entire attention is captured and held, perhaps involuntarily (see Rader [1974]: 131; Rowe [1991]: 274). This could be a testable proposition. Although we value literary eloquence, we agree with Bruner ([2002]: 5) that «too good a story is somehow not to be trusted». As Einstein explained, we «must look at substance rather than at the form» (Einstein [1956]: 23) and "If you are out to describe the truth, leave elegance to the tailor" (Einstein, cited in Harriger [2009]: ix).

The problem with Skill: I wish to take a moment to resurrect the property skill, as it can be defined in ways that make it identifiable. In regard to Dutton's claim that skills are acquired in apprentice programs or picked up by anyone who «has a knack», the evidence supports that in small-scale kinship-based societies, older adults were responsible for teaching art techniques and motifs to their young kin. Craft apprentice programs in Africa were initiated after the art began to be sold in a market place, not made for family use (see Lave, Wenger [1991]). An important difference between these two types of learning is that in an apprenticeship program, the apprentice often goes on to compete with his mentor/teacher, whereas in traditional kinship societies, children not only continue to practice the skills and motifs they learn, but they go on to teach the same skills to their own children (who then teach them to theirs), and the teacher and the student do not compete (Coe [2003]).

In regard to Dutton's claim that skill is universally admired, skill also can be resented. This resentment, and the social problems it can cause, were pointed out in an anonymous article published in *The Musical Times* in 1895, which described how, in Greek mythology, Marsyas challenged Apollo to a trial of skill as a musician. Apollo won the trial, although his «victory long hung in the balance» (653). Apollo, however, was not satisfied with this success; he quickly seized his unfortunate antagonist, tied him to a tree and flayed him alive. Giorgio Vasari, an artist as well as a biographer, was startled by a climate of intense rivalry among Renaissance artists (Goffen [2004]). Rivalry between the architects Bernini and Borromini, Morrissey (2005) writes, was very acrimonious, involving struggles, heartaches, backroom dealings, betrayals, assaults, murder and suicide. Coe (2003) argues that in traditional social environments, constraints were placed on the demonstration of skill, to the point it became

competitive, as such competition causes resentment, which damages critically important social relationships.

The remaining properties

While none of Dutton's properties are truly discrete categories, the remaining ones are particularly so. The property *Criticism*, for example, is closely tied to, and used to explain *Skill*. *Expressive Individuality* is linked with *Creativity and Novelty* and *Skill*. Further, the property *Style* is closely linked to *Art Traditions and Institutions*. Because these properties are overlapping, and some are often assumed to be opposites – traditions and creativity, for example – they will be discussed together. This discussion begins by focusing on the property *Special Focus*, as it may link, in an important sense, all the properties, and makes it clear that these properties – and art – only can be evaluated and their importance identified if we first understand the distinction between traditional and non-traditional.

Dutton ([2006]: 371) distinguishes two ways that *Special Focus* manifests itself. First, he writes that «works of art and artistic performances tend to be bracketed off from ordinary life, made a separate and dramatic focus of experience». «In every known culture», he continues, art involves what Ellen Dissanayake calls «making special», which can include: «A gold-curtained stage, a plinth, spotlights, ornate picture frames, illuminated showcases, book jackets and typography, ceremonial aspects of public concerns and plays, an audience's expensive clothes, the performer's black tie, the present of the Czar in his royal box, even the high price of tickets: these and countless other factors can contribute to a sense the work of art, or artistic event, is an object of singular attention, to be appreciated as something out of the mundane stream of experience end activity».

He then maintains that it is «the nature of art itself to demand particular attention. Although some works of artistic value – for instance, wallpaper or mood-inducing music – can be used as background, all cultures know and appreciate special, «foregrounded art» (*ivi*: 371). He concludes by admitting that any «isolate-able episode, artistic or not, that can be said to possess a recognizable “theatrical” element shares something in common with [...] almost all art. As examples, he mentions rollercoaster rides and presidential inaugurations.

Dutton's discussion is difficult to follow. He does not explain what «foregrounded art» is; he does not make it clear if or how making special in art might be different from adding, for example, developing a special new gizmo for a vacuum cleaner; and he

moves back and forth between art and ritual – while art may be incorporated into a ritual, a ritual is a separate behavior, or set of behaviors, involving more than just art.

While Dissanayake acknowledges the problems with «making special» – she describes it as «shaping and embellishing everyday ordinary reality so it becomes extraordinary» (Dissanayake [1988]: 148). As Flannery ([1993]: 498) explains, it involves «treating something different as from everyday». We treat many things differently – dogs and criminals – for example. It seems difficult to isolate what «making special» actually may involve, other than making something more noticeable. While it is doubtful that artists will say that they want to make something special, they generally are not averse to attracting attention. The issue, thus, is how «making special» is different from making something attractive? «Attract» comes from the Latin word *attractus*, meaning to draw, or to cause to approach or adhere to. Attract does not imply that the object or event draws positive attention. The *sine qua non* of visual art is that it is noticeable (Coe [2003]). Once we focus on the property attract, we can ask what natural things in our world attract and hold our attention (e.g., rainbows, soaring birds, certain sequences of sound), how does art incorporate those properties, and does it necessarily follow that when these properties are used in art, they somehow assume a uniqueness, arousing a unique emotion?

An additional problem is that the basis of making special is said to be creativity – which, Dissanayake argues, is a biological need (1998). While many would agree, creativity is associated with change, which is not evident in the ethnographic and much of the historical record. As Bernard Berenson wrote ([1948]: 155), a «lust for newness», is neither ancient nor universal. We will return to this topic; however, as persistence is the characteristic seen in early forms of art, and as art objects and traditions can last for hundreds and even thousands of years – and are, in the span of a person’s life, seen daily until they become a commonplace part of the environment – do we assume that they no longer are art?

The remaining properties also involve making a distinction between traditional and non-traditional. *Novelty and Creativity* and *Expressive Individuality* both focus on creativity, which according to Dutton, is «the locus of individuality or genius of art» (Dutton [2006]: 370). *Art Traditions and Institutions* and *Style*, on the other hand, focus on what seems contradictory, or perhaps the other side of the coin, replication and predictability. In the next section, we begin the next section by, first, discussing the remaining properties, as described by Dutton, and then review the difference between traditional and creative or non-traditional.

Description: The issue of traditional and non-traditional

While Dutton does not spend much time discussing *Art Traditions and Institutions*, he does write that «Art objects and performances, as much in small-scale oral cultures as in literate civilizations, are created and to a degree given significance by their place in the history and traditions of their art» (Dutton [2006]: 372). This characteristic, Dutton, explains, can be applied to virtually all organized social activities – from medicine, to politics, to science – as they are built on a backdrop of customs and demands, historical and institutional traditions.

Dutton, when discussing *Criticism* (which, curiously, is not a characteristic of art, but, a hypothetical response to art), argues that wherever artistic forms are found they exist alongside some kind of critical language of judgment and appreciation (Dutton [2006]: 370). While there is, he argues, «wide variation across and within cultures with regard to the complexity of criticism», he recognizes that anthropologists have repeatedly commented «on its rudimentary development or what appears to be near non-existence in small, nonliterate societies [...]»

Expressive Individuality, Dutton ([2006]: 371) writes, seems to inevitably arise. Even in cultures that produce what Dutton calls «less personalized art» (*ibid.*), which seems to mean that they maintain art traditions with significant fidelity, «individuality, as opposed to competent execution» still can «be the focus of attention and evaluation» (Dutton [2006]: 317). «The claim that artistic individuality is a Western construct not found in non-Western and tribal cultures», he argues», has been widely accepted and *is certainly false*» [our emphasis]. In support of this claim, he points out that in New Guinea, traditional carvings did not need to be signed because everyone already knew which carver produced which work. He interprets this to mean that «expressive personality is respected in New Guinea as elsewhere» (Dutton [2006]:371).

When writing about *Novelty and Creativity*, Dutton ([2006]: 370) claims that «novelty, creativity, originality and capacity to surprise its audience» are highly valued in art and that the «persistent pursuit of creativity» characterizes humans across cultures not just in art, but in a great many areas of human endeavor». Dutton (2006) recognizes that creativity, objectively, refers to newness, to an identifiable change in materials, technique, motif, and theme. Their importance, he argues, lies in the *attention-grabbing function of art*, which he feels is a major component of its entertainment value.

The following testable claims follow from his discussion: «[...] novelty, creativity, originality and capacity to surprise its audience» are highly valued in art and that the

«persistent pursuit of creativity» characterizes humans across cultures not just in art, but in a great many areas of human endeavor» (Dutton [2006]: 370). «The claim that artistic individuality is a Western construct not found in non-Western and tribal cultures, has been widely accepted and *is certainly false*» (Dutton [2006]: 371; *our emphasis*). He goes on to claim that «rigidity or fluid adaptability of styles can vary as much in non-Western and tribal cultures as in the histories of literate civilizations; for example, some sacred objects and performances are tightly circumscribed by tradition (as in older styles of Pueblo pottery), with others open to free, creative, individualistic interpretive variation» (Dutton [2006]: 370).

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Discussion: The Issue of Traditional and Non-Traditional

Creativity and Individualism. Many, perhaps most, current art scholars would agree that creativity is a necessary element of art (Joyce [1975]) and is a human need that is valued across cultures (Dissanayake [1992]: 82). A problem here is that creativity implies change and early anthropologists were in agreement that the societies they studied were characterized by persistence, not change. In both art history and anthropology there is clear evidence supporting that in traditional societies, creativity while not stifled, was significantly limited. M. G. Houston ([1920]: 2) described traditional art, writing, «we are confronted with an extraordinary conservation or persistence of style, not only through the centuries, but through millenniums [*sic*]». A focus of studies done by Boas ([1955]: 144, 169) was what he referred to as «fixed type» or «fixity» of design and form. Gombrich ([1972]: 119), an art historian, argued that «our modern notion that an artist must be “original”, was by no means shared by most people in the past. An Egyptian, a Chinese, or a Byzantine master would have been greatly puzzled by such a demand. Nor would a medieval artist of Western Europe have understood why he should invent new ways of planning a church, a designing a chalice, or of representing the sacred story when the old ones served the purpose so well».

In his book *Aesthetics and History*, Bernard Berenson ([1948]: 155) wrote that «The lust for otherness, for newness, *may* seem to be the most natural and matter-of-course thing in the world; however, «prehistoric races are credited with having had so little of it

that a change in artifacts is assumed to be a change in populations, one following another. The same holds for the peoples of relatively recent or quite recent date like the Peruvians and the Mayas and Aztecs as well as the African and Oceanic tribes. Even people so civilized as the Egyptians changed so little in three thousand years that it takes training to distinguish a Saitic sculpture from one of the early dynasties. In Mesopotamia also change was slow. But for Alexander's conquest, there might have been almost no newness in India, and but for the Buddhist missionaries as little in China. Why was there so little craving for novelty everywhere on earth?».

The persistence of techniques, motifs, etc. is holistically related to the role that art played in everyday life, in rituals, in religion and in social rules. Art, stories in particular, was used to teach the social rules that specified such things as who could use what designs; who could perform what dances and when; who could tell stories, and to whom; who could sing song, what songs, and when; and who should teach and who should learn.

Change and creativity began to appear when there was contact between different people with different ancestors. Bunzel, who studied potters and basket weavers in Pueblo villages, whose work was now being purchased by tourists and collectors, found that the potters and basket weavers began to place only a small degree of emphasis on originality and individualism ([1928]: 62-68) and that major or radical innovation was rare. In Africa, Bascom (1969) observed that radical innovations were unusual. In the Sepik, changes in art began to occur when education was introduced and the carver's art began to be taught in school because, Guiart ([1969]: 89) explained, «interested parties [began] flying into Anggoram every week and with every crocodile-skin buyer having become a deal in primitive art». Creativity reached its zenith during the 20th century, when avant-garde and modern art began to be built on the destruction of the techniques and themes of traditional visual art. Men like Edward Stiegliz and Clement Greenberg dismissed traditional art, even paintings that previously had been regarded as great works. Soon, the younger generations of 20th century artists, Seligman ([1952]: 57) explained, rejected all the work of the prior generations.

Criticism. Although criticism is not a property of art, the cross-cultural record provides some support for Dutton's claim. While the Kalabari, as one example, do not place a strong emphasis on criticism, among the Fang, Fernandez (1966) writes, there is a «lively spirit of criticism» in evaluating the work of carvers. A carver who wanted to avoid this criticism, would «retreat «to the solitude of the banana plantation behind the village [...]

[although he] cannot expect to escape his critics when the statue is completed» (Fernandez [1966]: 54). The fact that a carving is criticized, however, does not seem to affect the value of the carving; «it is a curious fact», he wrote, that I never found a case in which a statue was refused. The view seems to prevail that any statue can serve its function atop the reliquary whether it is aesthetically satisfying or not» (p. 55). Despite this presumed «enthusiasm» for art criticism, the Fang never criticized sacred objects, which were not subject to criticism or «aesthetic judgment» (p. 55-56). Similarly, among the Lega, all sacred objects, were consistently evaluated as good. As Biebuyck ([1969]: 17) explained: «*all* pieces commissioned by the members of the *bwami* association – who have the exclusive control over the art work – are *good*. That means they fulfill their purposes and functions. Criticism of the physical appearances of such objects is not tolerated; or rather, such criticism is inconceivable from their point of view».

This supports Layton ([1991]: 11) claim that «aesthetic values are not universally expressed [...] but are rather specific to certain aspects of culture».

In regard to the format and language style of art criticism, Congdon (1989) points out that each culture group may have different criticism formats and language styles. Bunzel ([1928]: 570) notes that in evaluating pottery vessels, Hopi potters always spoke of the importance of line, the Zuni potters of the number and distribution of designs, and the San Ildefonso potters of the surface texture and the luster. In Polynesia the value of a drum was determined by its shape and the quality of the wood (Guiart [1963]: 112). Biebuyck ([1969]: 14) claimed that among the Lega of the Congo, critical attention was focused, «first on the size, material, and gloss of a piece, and only then on its general form and design». He concluded that «it is very likely that for these features of the artwork on which the main aesthetic and function status rests, the rules are more stringent than for other, secondary qualities. Allowances are made for the position of the artist – is the artist just an apprentice, is this a first completed work of art?».

Further indicating that skill is not always evaluated, or that the criticism was tempered, a crudely made object could be referred to as art. Lack of criticism and tempered evaluation are characteristic of traditional people. The important point here, as discussed before, is that humans are a highly social species; social relationships are of critical importance and, throughout evolutionary history contributed to our ancestors' ability to survive; thrive; and produce, nurture and protect families. Despite their importance, conflict is difficult for us to avoid (McCullough, Tabak [2010]). Yet, given the complex nature of human social ties in ethnic groups, even simple conflicts could have serious, far-reaching, and multigenerational effects. As criticism is often a cause of

conflict, social rules limited the opportunities and tempered the degree of criticism that was socially acceptable (Coe [2003]).

The Issue of Traditional and Creative/Non-Traditional. The use of the terms «traditional» and «traditional society» implies that in the midst of the seeming chaos of cultural diversity in the world, there exists a recognizable dichotomy between traditional and nontraditional societies. Although this dichotomy is actually a continuum, traditional societies are those in which cultural behaviors have been copied from ancestors for many generations; traditional behaviors, to quote Osaghae ([2010]: 204), are «the legacy of the past». These copied behaviors included not only the art, which shows astonishing persistence, but rituals that are recognized as being stereotyped and repeated from one generation to the next, as well as the everyday behaviors related to subsistence, and most importantly, social interaction. These traditions provided a blueprint that gave individuals a model for how to live life and who should teach and who should learn song, dance, art movements, sounds, motifs and techniques; how and when to make or perform specific kinds of art, and the tempering of art's competitive elements. Traditions encouraged the replication of ancestral songs, dances, and plastic art.

In tribes and subcategories of tribes – clans, subsections, phratries, moieties – rights to particular techniques and design motifs are inherited, passed from one generation to the next in a line descending from a particular ancestor. Morphy ([1991]: 60-63) describes how subgroup affiliation is the way a man «obtains rights to produce his clan's paintings». Among the Gadjari, Meggitt ([1965]: 228) writes that «The usual patrimoiety rules determine the manufacture of Gadjari headdresses and temporary ritual objects». Style, in the case of traditional societies, refers to designs and techniques inherited from a common ancestor and shared by individuals who are co-descendants. Whether done intentionally or not, individuals are using visual art to communicate their ancestry and their relationship to others with whom they share that ancestor.

Ancestral images – whether depicting ancestors or copying their art – guided what was produced. Stuart (1988) explains that in Central America, «ancestor imagery», Stuart argues, was the force «behind the vast majority of ancient Maya public art» ([1988]: 221). In the Northwest Coast, every object of ritual importance (e.g., canoes, boxes, bowls, houses, poles, chairs, clothing, spoons, bracelets), Walens writes, «are decorated with images of the clans mythic ancestors, with depictions of incidents in the

clan's history [...]. In some tribes, even people's bodies were tattooed with images of the clan's ancestral spirit being» ([1993]: 89).

The words conservative, traditional, ethnographic, and fixed style, when used to refer to art, do not imply that the dance, song, stories, or plastic arts will be simple or plain. The visual arts of China and Egypt, along with those produced in many parts of the world, were traditional; most would agree that they are attractive (some might prefer the words aesthetically pleasing). This arts, however, were not creative in the sense of constantly changing or being highly innovative. According to Hauser ([1959]: 29), «some of the most magnificent works of art originated [...] in the Ancient Orient under the most dire pressure imaginable [this proves] that there is no direct relationship between personal freedom of the artists and the aesthetic quality of his works».

When reviewing the art produced by a traditional people, Hauser ([1959]: 74) writes that one cannot find «an individual style or personal ideals or ambitions – at any rate, there is no sign whatsoever that the artist cherished any feelings of this sort. Soliloquies such as the poems of Archilochus or Sappho [...] the claim to be distinguished from all other artists which is advanced by Aristonothos, attempts to say something already said in a different, though not necessarily better fashion – all this is quite new and heralds a development which now proceeds without a setback (apart from the early Middle Ages) to the present day».

Firth ([1925]: 283), an anthropologist writing about Maori artists, claimed that «innovations were not permitted; innovations were seen as mistakes, which were *aitua* (evil omens)».

I am not arguing here that there was never any change or variation in art. The rainbow serpent design was used in Australia for 6,000 years; however, not every serpent looked exactly the same. Traditional art, while maintaining strong historical links, is not stagnant. When new elements are introduced, it often is claimed that the new way of doing art was given to them by the ancestors in a dream. The changes were not idiosyncratic. As Biebuyck ([1969]: 12) recognized, when changes occur, the new items are explained by drawing from «their patrimony of traditional interpretive proverbs».

When creativity came to be equated with intelligence and freedom and highly valued in Western societies, anthropologists began to regard traditions – this persistence, or lack of change – as a negative and started to use words like prelogical, primitive, simple to describe the non-creative people they studied and terms like simple and primitive to describe their art. The value that they placed on creativity influenced what they saw and

how they interpreted it (see discussion in Biebuyck [1969]). Later anthropologists, who practiced during a more politically correct era, did not wish to be seen as critical of other cultural practices. They began to search feverishly for evidence of creativity, despite the fact that amazing persistence they were observing was begging for explanation.

Summary and Discussion

When Dutton’s properties are reviewed, many of them, unfortunately, are not useful.

Table 1:

Property	Not clearly stated	Not identifiable	Refers to function	Useful scientifically?
Direct Pleasure	X	X	X	Non-testable
Emotional Saturation	X	X	X	Non-testable
Intellectual Challenge	X	X	X	Non-testable
Imaginative Experience	X	X	X	Poorly conceptualized; non testable
Expressive Individuality	X	X, difficult at times to identify		Limited explanatory ability – relevant to more contemporary forms of art
Skill or virtuosity	X			May have a limited explanatory ability, to the extent it implies competition
Criticism	X		Refers to the response	Not a property of art, but an hypothetical response pattern.
Representation		X, referent not always identifiable		Not always true of art, as some forms seem to represent nothing. This focus gets us into murky area of symbolism.
Special Focus	X	X		Vague, «special» is not defined

Art Traditions & Institutions	X, incomplete			May be relevant in that most forms of art draw, to some degree, on traditions; however, not all art is associated with institutions or art spaces.
Style				Same as above
Novelty and Creativity	X	Identifiable as change		Limited explanatory ability – relevant to more contemporary forms of art

In 2010, Heywood, Garcia and Wilson argued that if we wish to understand something like the arts, we need to do more than merely apply the scientific method, we need to pay attention to what role culture as a «vital, shaping force» might play in influencing behavior. In this paper, I have attempted to integrate science and culture in order to identify scientifically testable properties of art. I have argued that if we wish to understand art, we cannot focus solely on its contemporary forms, we need to understand art as it was produced throughout most of human history and prehistory. If the reader wishes to dismiss the art produced during that period, it is his/her responsibility to explain, without reference to nontestable emotions and/or intellect, why that art is distinct. This does not mean that contemporary forms of art are not art. It merely means that the patterns of production and usage differ significantly.

Further, if we accept that only humans make art, then we must ask why humans regularly seem to find natural objects (e.g., animal «art», sunsets, colored stones) and events, bird song and dance, for example, to be attractive, in that they attract and hold our attention. What is it about animal «art», sunsets, and colored stones, song, and performance that makes it seem appropriate to refer to them, as is widely done, using the term «art?» If we assume that there is some logic to this metaphorical extension, perhaps understanding these attractions can help identify the literal meaning of art.

To address the question of what art’s identifiable properties might be, I turn to Darwin ([1871]: 59) who explained that language is an art, «in the sense of its having been elaborately and methodically formed». Art, in other words, is an activity that requires, or can be improved by practice. Rather than focusing on skill as a competitive factor, a focus on control of technique places the emphasis on such things as what the technique is, how control is identified, how it is learned, from whom it is learned, who

uses it, how and if it persists, the social response to mastery of control, and whether or not the control or the technique change or persist over time. Control of technique also offers us a place to begin to identify stages of control, moving from poor control to greater control and how long it might take to reach master and the steps that are involved.

Another important art property is pattern, which Bateson ([1972]: 131) described as "any aggregate of events or objects [that] can be divided in any way by a slash mark, such that an observer perceiving only what is on one side of the slash mark can guess with better than random success, what is on the other side of the slash mark". We refer to aggregates as patterns when that aggregate's extension can be predicted with greater than chance success. Pattern's importance may be lie outside of art, found in the many advantages it offers humans in identifying and re-identifying objects, and thus in making choices (Hilbert [1987]).

Patterns of sound, movement, color, line, pattern, and/or form have no function other than attracting attention, perhaps, as we might ascertain someday, by provoking emotions. They do not, for example, keep bodies healthy (that may be a side effect of dance), make people «happy» (listening to stories, singing songs), add structural support to a wall or pottery vessel, act as a preservative, such as in tanning pelts, or prevent dental caries (in the case of tooth straining).

Humans have evolved the ability to respond to patterns of movement, sound, and color, line, pattern, and/or form. For thousands of years, and often at the encouragement of others, artists have exploited this tendency in order to influence social behavior. While art may be much more than pattern and control of technique that are used to attract attention, these two properties provide a start for future discussion (Coe [2003]).

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