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“Dangerous Things”: A Symbolic Domain for Killer Bees

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Abstract

Viewing usage of words in culture as key symbols, Sherry B. Ortner's indicators were applied to an analysis of the lay-public's use of "killer bee", "Africanized Honey Bee", and "honey bee". While conducting social impact study in southern Nevada, the author noticed that informants were not associating "killer bee" with "honey bee" imagery. Interviews were conducted with residents in the community of Boulder City, Nevada focusing upon symbolic linkage between the expressions: honey bee, killer bee and Africanized Honey Bee. It was determined that people do not link these expressions together in the same symbolic domain. Ethnohistory of the human/bee relationship was presented to show how human cultures have conceptualized and prized honey bees over time. Further, this article is an examination of why separate symbolic domains are established for different categorical meanings applied to honey bees.

In North America, the Africanized Honey Bee (AHB) has not demonstrated a severe fatality risk thus far, yet regrettably, some human deaths have occurred since the bees entered Texas in 1990. A realization of situational risk and personal danger that does exist would be accidentally startling a killer bee colony and initiating their rapid defense behavior. An unpredictable encounter could assuredly end in tragedy if one could not escape their onslaught. This kind of defensive attack has elicited various cultural symbolic attributes: the killer bees, the ones that go berserk or run amok, biological time bombs, and the author's own: go nutso. In the Western Hemisphere one unofficial name used for the AHB to reflect adaptation in the New World is neotropical scutellata, although in its native land, South Africa, the East African Honey Bee, Apis mellifera scutellata.

The killer bees are symbols of their own namesake and may become living representations of their pernicious nature while in confrontation with very astonished people. Also, it appears that residents in predominantly Spanish speaking countries in the Western Hemisphere view this in a similar way with their symbol abeja asesina (assassin honey bee). "Killer" and "assassin" are applied in analogous vernacular suggesting either a "bee with human attributes" or a "bee with dangerous attributes", or both.

Language is the most predominant aspect of symbolizing in culture as a system of communication [1],[2]. While observing and establishing important symbols in culture, Sherry B. Ortner [3] described indicators of interest as a guideline for their study: people will attest that a symbolic aspect is important and will be either negatively or positively aroused by this feature; the symbolic aspect will be present in many contexts (conversational, action situations, and in symbolic domains of myth, ritual, art, written accounts); there will be greater elaboration of the symbolic aspect's nature and details and; there will be more cultural restrictions expressed in rules or sanctions involving regard for the symbolic aspect. Based upon these criteria, "killer bee" as a language symbol used informally by the lay-public in southern Nevada and "Africanized Honey Bee" used formally and officially, were studied to solve a research question: Are people associating the popular term "killer bee" with the long-established symbol "honey bee"?

This inquiry has come about from expressions of academic and agency criticism of popular culture for using the term "killer bee", where in this critical perspective of language use, "killer" has been viewed as an attribute meaning "one that kills" [4]. Relative to this, Mike Burgett [5], in his lecture series Pests, Plagues and Politics posted by Oregon State University, Department of Entomology, described "killer" as "an anthropomorphic term totally unsuited for this situation". He did, however, title his twentieth lecture in the series: The Invasion of the Killer Bees presumably due to the public's fascination with the subject and the popularity of this anthropomorphic term. In one brochure distributed by the Nevada Department of Agriculture and the Clark County Public Works Environmental Control and Neighborhood Services Vector Control Section, the title page reads, "Preparing for Africanized Honey Bees: Alias "Killer Bees" wherein, on the last page it reads, "Killer bee’ is a misnomer popularized by Hollywood and the media."[6] In what appeared to be a subsequent brochure issue titled, "Africanized Honey Bees", there is no commentary or mention of "killer bee". On the right inside overleaf it is stated, "Africanized honey bees
defend their colonies in an aggressive manner and can pose a threat to pets, livestock, and people who come too close to their hives." Additionally, it states, "Honey bees have been bred to benefit agriculture by aggressive pollination and honey production." Further, it has been assumed that constant use of this term will reinforce lay-public prejudice and fear toward honey bees and beekeeping which, in turn, may cause a decline in beekeeping and pollinating services which are crucial to agriculture and the survival of native flora. At the web site of the Department of Entomology, Clemson University, South Carolina (1998) a statement encapsulating this concern was conveyed:

Sensationalized movies, "The Savage Bees", "The Killer Bees", and "The Swarm" have created inaccurate perceptions of the AHB. The greatest challenge is to avoid public alarm and reaction to ban or limit beekeeping because of incidents associated with the AHB. [7]

Dan Garcia, a reporter for Treasure Coast Newspapers, interviewed an entomologist from the University of Florida about killer bees encroaching in the southern counties of Florida. In his article, Garcia quoted the entomologist who stated, “We don't use the “K” word". Although, in the article, Garcia, with due respect, equated Africanized bee with killer bee [8].

During observations while conducting field research to ascertain social impacts of AHB colonization, I began to notice that residents in my area of study did not symbolically associate "killer bees" with "honey bees". From the collective comment of many people who have offered their inquiries and opinions over a period of two years in field research, one of the most frequently asked questions has been, "Do killer bees make honey?" This often asked, suggested to me that people are symbolically seeing killer bees as very different from honey bees while not realizing that killer bees are in fact, a subspecies of honey bee. While speaking with residents in communities of southern Nevada, this type of question would lead to more questions about the killer bees with the conversation ending in a focused statement from the resident, "Okay, so the killer bees are going to be with us forever and provide pollination, but when do I need to be afraid of them?" In reply, I would tell residents, ‘They will only be dangerous if their hives are threatened, and should that happen and they go nutso, then run for your lives.'

Research Strategy: From Africa to the Americas

The original focus of inquiry has been the social impact of Africanized Honey Bee colonization upon the human population of southern Nevada [9]. There are many contributors to this project ranging from researchers in South Africa to those residing in countries of the Western Hemisphere. That being so, I chose to model the strategy on the following research methodologies. In Carmen A. Ferradas' From Vegetable Gardens to Flower Gardens: The Symbolic Construction of Social Mobility in a Development Project, a 14 year study of a development project in northeastern Argentina was focused on "development actors" [10]. The role played by social scientists in development projects was studied, and she further stated, "I want to look at the participation of anthropologists and other development practitioners as active components of the development process." In similar perspective, the participation of agency and academic professionals has been observed in the developing issues created by AHB colonization. Thomas Gregor utilized this observation technique while studying the Mehinaku where, "In practice the dramaturgical approach turns our gaze in new directions, focusing our attention on the expressive aspects of social relationships as well as on their economic or political significance." [12]

Ethnographic research utilizing the “dramaturgical approach” has been ongoing since May of 1998, primarily in the community of Boulder City. Interview with the lay-public of southern Nevada set aside for the moment, conferencing has been in progress with academic and agency officials in the State of Nevada, western regional States, the State of Virginia, and the countries of Mexico and South Africa. Additional groups that were studied include emergency response agencies, administrative agencies, news reporters, and beekeepers who often represent the interests of apiculture as related to agribusiness. Other methods included the study of official published literature, printed literature for public distribution (including newspaper articles), television news reports, telephone and e-mail communication. This provided a basis for the study of academic and agency perspectives in regard to the biological aspects of the bees that lead to human/bee conflict and policy formulation to deal with social issues. Therefore, all of the “actors” could be divided into two main groups: official agency, and lay-public.

Participant observation in Boulder City and southern Nevada allowed me to gather commentary from numerous residents over time using the strategy of informal interview. As a member of the community, a "bee specialist", and a "pest-management specialist", volunteer information would come easily from residents.
who also in turn, may have asked questions of the author about the bees. With the author being perceived more so as a community member, this social connection yielded more candid replies and offerings of opinion and information which is the strength of informal interview [12].

The residents of Boulder City (population 15,000) are comparable to residents of other communities in southern Nevada in that they are primarily middle-class. The City provides a suburban community where people can choose to live in a retirement life-style, or a family life-style while children are being raised. Many of the residents are employed in other areas of southern Nevada and commute to their place of employment.

One research objective in Boulder City was to observe as many of the residents as possible, address their spontaneous questions, and listen to their commentary. In the beginning stages of colonization, resident questions and concerns were repetitive. The same questions were asked by many individuals and information about the bees and human safety began to follow somewhat, in a pattern. Foremost expressed were concerns for personal, family, pet, and livestock safety. From the informal interviews, apprehensiveness about the arrival of the bees was observed which could be expressed in a range of “concerned” to “very fearful”. During my visits to homes and offices, the residents would immediately ask typical questions like, "Tell me about the bees, have you had any emergency calls?", or "Are they increasing now, have you seen any lately?"

From direct experience, I found it counterproductive to interrupt a conversation and remind the resident that the following interaction would become a structured interview. This was tried early on and it didn't work very well. I then decided to accept spontaneous conversation as informal interview and describe this as a method of obtaining information. From hundreds of in-person conversations in more than seven years, I have noted individual expressions that reflect divergence from the usual comments and questions about safety and bee colonization. One divergence is that people are not associating “honey bee” with “killer bee”.

Symbols and Semantic Domains: Humans and Honey Bees

Taking Ortner's criteria into account, the following discussion will relate honey bee imagery with human symbolic domains. At the same time, there is a social action attribute created by the potential hazards of the new honey bee, Ortner further commented:

Symbols can be seen as having elaborating power in two modes. They may have primarily conceptual elaborating power, that is, they are valued as a source of categories for conceptualizing the order of the world. Or they may have primarily action elaborating power; that is, they are valued as implying mechanisms for successful social action. These two modes reflect what I see as the two basic and of course interrelated functions of culture in general: to provide for its members "orientations" i.e. cognitive and affective categories; and "strategies" i.e., programs for orderly social action in relation to culturally defined goals.

Ortner's characteristics of symbols and their ability of "orientation" and setting forth social "strategies" will be applied to the lay-public's use of honey bee symbolic terminology. The following discussion will set forth enculturated value perceptions in a long-standing history of the human/bee relationship and symbolism therein.

Prior to the beginning of sedentary agriculture, roaming hunter-gatherer societies sought the reward of honey from searching for bee nests, a common practice that continues today known as "honey hunting". Paleolithic art featuring bees in Altamira, Spain suggests honey hunting by early humans at least 11,000 years ago, hence the human/bee relationship began early in the history of modern humans [13]. In a more contemporary view, the honey bee has been thought of as a prized, industrious little worker, as a symbol of royalty, and also consider the frequently used metaphor: "busy as a bee". Zachary Huang, a honey bee researcher and enthusiast stated at his web site CyberBee.Net, "...the honey bee and computer are the two things I love." [14]

The previous accounts suggest that a highly personal relationship may develop between bees and humans who keep them. Taking this further into the symbolism of Utopia, the Northampton Beekeepers Association in the United Kingdom described honey bee society:

The civilization that exists within the hive, the selfless community life evolved through millions of generations whereby upwards of 40,000 bees can act and move simultaneously as with one mind is still beyond complete explanation. The dance of the bees, their uncanny homing instinct, the wonder of 'queen substance', etc. - these and many other mysteries await your study. [15]

With the previous commentary, it appears that many people associated with honey bees admire the orderly, structured society within the hive which would be opposite to any perceived chaotic events in human society.
In her book *The Archaeology of Beekeeping*, Eva Crane discussed many cultural depictions of honey bees associated with people, often in benevolent representations:

St. Ambrose was Bishop of Milan in Italy from 374 to 397; the altar of his church (San Ambrogio), rebuilt in the tenth century, shows the infant Ambrose in his cradle with a swarm of bees flying round his head; they were supposedly the source of his eloquence, and of his appellation 'honey-tongued'. [13]

This revered human/bee symbolism was further illustrated in Laurence Gardner's work *Bloodline of the Holy Grail*:

To the Merovingians, the bee was a most hallowed creature. A sacred emblem of Egyptian royalty, it became a symbol of Wisdom. Some 300 small golden bees were found stitched to the cloak of Childeric I (the son of Meroveus) when his grave was unearthed in 1653. Napoleon had these attached to his own coronation robe in 1804. [16]

Napoleon claimed the right to use this symbol from his descent from the House of Stuart. The Stuarts were entitled to the honey bee symbol because they were descended from the Merovingians. Gardner further stated, "The Merovingian bee was adopted by the exiled Stuarts in Europe, and engraved bees are still to be seen on some Jacobite glassware." [16]

As with honey bees, their usage as metaphor is almost always positive although, there is one connection between honey bees and negative use which centers around "sting" and "stung" where sting may refer to a con-game and the victim is said to be stung (wasps and other stinging hymenopterous insects could replace the honey bee in this case). Reversing this, law enforcement agencies have referred to some of their operations as "stings" whereas their quarry, the criminals, are the ones who are stung. Stung can also be related to a failure in some venture where sting means not successful. This may have come from watching some animal attempt to rob a hive while driven off by the bees without gathering or stealing any honey; hence "stung" or unsuccessful in the process. Eva Crane discussed bees in the history of art featuring a similar negative theme related to being "stung":

In Germany, between 1527 and about 1537, Lucas Cranach the Elder made eleven paintings that show Cupid stealing a honey comb, being stung, and seeking consolation from Venus. ............ According to the legend, Venus said to Cupid: 'Art not thou like the bees, that are so small yet deallest wounds so cruel?', and it has recently been suggested that Cranach was using Cupid as an allegory for syphilis, which indeed dealt cruel wounds at that time. [13]

Returning to positive imagery, in the United States, twelve States have designated the honey bee as their "State Insect" [17]. Of those twelve States, Utah's designation of the honey bee is historically centered in early Mormon pioneer communities that were fashioned after the social organization of the bee hive and the diligence of the honey bee known to those of the Latter Day Saints as Deseret [18]. In his *A Dictionary of Symbols*, J. E. Cirlot described some historic and symbolic uses of the symbol "Bee":

In Egyptian hieroglyphic language, the sign of the bee was a determinative in royal nomenclature, partly by analogy with the monarchical organization of these insects, but more especially because of the ideas of industry, creative activity and wealth which are associated with the production of honey. In a parable of Samson (Judges xiv, 8) the bee appears in this same sense. In Greece it was emblematic of work and obedience. According to a Delphic tradition, the second of the temples built in Delphi had been erected by bees. In Orphic teaching, souls were symbolized by bees, not only because of the association with honey but also because they migrate from the hive in swarms, since it was held that souls 'swarm' from the divine unity in a similar manner. In Christian symbolism, and particularly during the Romanesque period, bees were symbols of diligence and eloquence. In the Indo-Aryan and Moslem traditions they have the same purely spiritual significance as in Orphic teaching. [19]

From the preceding illustrations, symbols have been adopted in culture where "bees are royalty", "bees are eloquent", "bees are diligent", "bees are divine", and yet, "bees can sting", the latter being a negative representation still, not so bad because it symbolizes pain, trouble, or inconvenience, but not death. Currently, herein lies the difficulty with our new honey bee resident in the United States unofficially known as the "killer bee", for we have gone beyond "bees can sting" to the ultimate tragedy: "bees can kill". In symbolic relationships, words like "bee", "comb", "hive", and "honey" can still be kept in related domains and recombined into "honey bee", "honey comb", and
"beehive" without alarm or the need to separate any of these words into contrastive or dissimilar domains.

In view of both words "killer bee" and "honey bee", if one considers the "bee" as a neutral animated conveyance of both "killer" and "honey" then, further study of contemporary semantic attributes portrays contrastive symbolic perspectives. As one attribute, "killer" may be a noun signifying "one that kills" or in another view, "one that is extremely difficult to deal with", or as an adjective "extremely difficult to deal with" [4]. In the case of adjective usage of "killer", this attributive application is fairly new being first recorded in 1951 whereas, the noun "killer" dates back to the 15th century. As such, "killer" appears to be more of an attribute than a metaphor.

In contrast, "honey" has a very elaborate variety of metaphor usage where in noun form "a loved one, sweetheart, dear, and as a superlative example"; as a verb "to flatter or speak ingratiatingly of"; as an adjective "much loved, and dear" [4]. The noun "honey" was first used before the 12th century with verbal and adjective usage recorded in the 14th century [4]. Because of the historic and ideal symbolic significance of "honey", "killer" cannot be added to the domain of "honey bee", which would otherwise result in contrastive inconsistency in understanding relative to domain assignment.

It appears that "honey" as metaphor has been enculturated into Western history for some time creating a symbolic domain that would associate the honey bee as a conveyance of what is good, as illustrated in part by Crane, Gardner, and Cirlot. Additional examples of honey symbolism further illustrate this where, "honey" exudes rebirth or change of personality consequent upon initiation; and, in India, the superior self (comparable with fire). Given that honey is the product of a mysterious and elaborate process, it is easy to understand how it came by analogy to symbolize the spiritual exercise of self-improvement. [19]

In similar regard to esoteric honey symbolism, Carl Jung stated:

In the honey, the "sweetness of the earths", we can easily recognize the balsam of life that permeates all living, budding, and growing things. It expresses, psychologically, the joy of life and life urge which overcome and eliminate everything dark and inhibiting. [21]

Likewise, the "telling of the bees" and associated mythology from the Museum of Jurassic Technology described funerary and esoteric symbolism:

There are many corollary practices associated with the telling of the bees, one of the most important being the "heaving up" of the hives. This practice requires that on the day of the funeral as the funeral party is preparing to leave the house, the hive and coffin are both "heaved" or lifted at the same moment. Coming a little nearer, Plato's doctrine of the transmigration of souls holds that the souls of sober quiet people untinctured by philosophy come to life as bees. Later than Plato comes Mahomet, who admitted bees, as souls, to paradise; and Porphyry said of fountains: "They are adapted to the nymphs, or to those souls which the Ancients call bees." [22]

The preceding examples show how honey has functioned as symbol, often for the more mythological and reflective meanings of human experience. In contemporary use, however, the verb case and the adjective "honey" suggest the old Norse "honey moon" tradition. Nevertheless, in either spiritual or more secular usage, honey is a powerful symbol in the long-standing human/bee relationship.

Symbolic Domains: Residential Responses

Since 1998, comments from informal interview have been gathered from people in southern Nevada and Boulder City in regard to personal opinions about the newly arriving "killer bees". Until recently, opinion from residents about how they place killer bees in their domains of imagery has not been investigated, although I have recognized an anomaly when listening to conversation about "Africanized Honey Bees" versus "Killer Bees". One perspective I had was that "killer bee" has been publicized many times in the last 40 years and the subject has also appeared in fictional horror movies and non-fictional documentaries, leaving the general public more effectively and indelibly informed, rather than apathetic from overexposure to such publicizing. "Africanized Honey Bee", however, is a term that has
not been strongly associated with "killer bee" publication in the United States and is therefore unclear in meaning to the lay-public.

Another anomaly observed was the presence of "honey bee icons", particularly in homes where one may find honey bee craft-work, often in the form of tole paintings, honey bee pull toys and honey bee picture-story books for children, honey bee wind chimes, and honey bee drawings on the labels of food products for a few examples. Of these most notably, on honey jars suggesting enculturated positive symbolism for honey bees in general. From all of the preference and use of honey bee icons with the enjoyment that it brings to people, I could not ascertain if there was a connection between prized "honey bee icons" as symbolism and the concept of "killer bee". In other words, it appeared that the public was not connecting or linking "killer bee" with "honey bee icons" symbols.

To uncover other explanations, one interviewee, Judy, a resident of Boulder City, who has followed killer bee in southern Nevada stated in conversation:

First, let me tell you that I am not afraid of honey bees and never have been. I am afraid of killer bees, they are different.

From this interview, I became aware that Judy had linked killer bee with dangerous things like guns and knives associated with a human perpetrator in essence then, a potential lethal assault. She did not link killer bee with honey bee so, "bee" is less relevant in the symbol, "killer bee". "Killer" is the morpheme or word of importance, and thus related to other things that can be lethal necessitating precaution and the need to act quickly.

Another consultant, Pat, basically provided testimony that agreed with Judy. Pat, however, further subdivided her "danger" category by linking "killer bees" with black widow spiders and scorpions thereby creating a small, dangerous arthropod category.

In volunteer testimony through the years, I have spoken with individuals who are so afraid of bees and wasps that no specifications are made, hence all bees, wasps and "killer bees" would be linked together, along with scorpions, spiders, and other hazardous arthropods. These individuals are few in representation of the entire population, whereas most people specify level of threat within their "dangerous things" categories or domains. I believe that people care enough about discovery within their environments to know which animals may be dangerous and under which circumstances, thereby creating levels of specification leading to concepts like "not all spiders are bad", "not all snakes are venomous", and "not all bees are killer bees". Another casual interview disclosed this comment about killer bees, "I know they are all bees, but to me, killer bees are pit bulls, not cocker spaniels." Considering the contrastive pair: honey bee/killer bee, one may prefer "honey" over "killer" where "honey" in itself, as symbolism, has been used often within some North American subcultures as a term of superlative value, endearment, and praise.

In view of the previous discussion regarding "killer bee" and domain, there are other attributes in use to describe this subspecies. In the predominantly Spanish speaking countries of the Western Hemisphere, the bees are on occasion, known as "Abejas Asesinas" and "Abejas Africanizadas" or respectively, "Assassin Bees" and "Africanized Bees". In the case of abejas asesinas, there is a clear domain linkage between the assassin as a human entity and the bees behavior, hence linkage between assassin and dangerous things. This resembles Judy's link between killer bees and a perpetrator with a gun or a knife. Additionally, honey bee researchers who have experienced the onslaught of the Africanized Honey Bee have used "going berserk" [23], "total onslaught", and "run amok" (Randall Hepburn, e-mail communication) to describe their behavior when fully in defensive mode. Where "going berserk" is an old Norse term that in contemporary usage describes a fit of anger, and "run amok" is a borrowed term from Indonesia. South African researchers refer to the scutellata subspecies as "scut" or "scuts" with the pronunciation of "scut", like "scoot". As with the pronunciation of scutellata, one's imagination could further envision that when the bees are going berserk or running amok, "If they're in pursuit -- you scoot!"

Media and Symbolic Language

In newspaper accounts, symbolic words corresponding to familiar recognition by readership are used distinctly to communicate subject material. In his discussion of visual semiotics, stated that "In daily life, we orchestrate and juxtapose anything and everything in order to compose realities, or simply to get a message across to others and to ourselves." [24]. It is not clear if the news media began using the "killer bee" symbol for sensational purposes, although it is possible that vernacular usage of abeja asesina may have been noticed by a North American journalist early on, and subsequently converted into its close English equivalent: killer bee. Martin Gorst [25] stated that a news film crew may have initiated the term in 1976, this is supported by the Merriam-Webster claim of first usage: 1976. It would be convenient to believe that the "media"
has been responsible for such creativity and would be subject matter enough for further investigation. Without precise discovery of how "killer bee" actually came into use, Mark L. Winston's brief historiographic review suggested newspaper and magazine journalism:

The fearsome image of Africanized bees starts with their nickname. These insects were not always called killers; early press reports referred to them as "African" bees, and a bit later as "Brazilian" bees. It was not long before the media began experimenting with new names, however, by 1965 Time magazine (in this issue of 24 September) was calling them "Killer Bees", and later the "Bad Bees of Brazil" (12 April 1968). By 1972 even the venerable New York Times was using the title "Aggressive Honeybees" (22 January), and in a headline on 15 September 1974 announced that "The African Killer Bee Is Headed This Way." The term had caught on, and the killer bee was launched on its path to stardom. [26]

Accordingly, news stories display an encapsulated title to inform readers very briefly of text content for example: KILLER BEES SUSPECTED IN DEATH OF NEVADA DOG [27]. While it appears that the use of "killer bee" has become prevalent in journalism, which would also reflect preference within the readership, an examination of news-item data was conducted to ascertain if this was accurate.

Sting Shield, Inc [28], Roanoke, Virginia, maintains a "killer bee" news item data base for research purposes. I reviewed this for posted news reports in 1999, where 65 stories were entered verbatim, mostly from the United States, with some originating from additional countries in the Western Hemisphere. Two significant aspects, the item title, and the item text, were selected to discover popularity of symbols by frequency of usage both in title and in text where popularity may also indicate prevailing usage.

The review of news items showed that "killer bee" was the most frequent symbol used in 29 titles out of 65 news articles. The symbol, "Africanized bee" appeared in 13 titles out of 65 news articles; however, both symbols appeared almost equally in item text where each symbol would have appeared at least once in the news story. The use of "killer bee" in item title seems to reflect an assumed familiarity with readers, although its use may be for sensational purposes or for both reasons. Both "killer bee" and "africanized bee" are equivocally interchanged within text in most news accounts, which may also include variations and combinations of killer, honey bee, and africanized as illustrated:

San Diego, CA -- KILLER BEES APPEAR IN SD COUNTY -- San Diego County rescue workers are being trained on how to deal with killer bees. This after confirmation that the Africanized bees have appeared in East San Diego County. [29]

In this example, the symbol Africanized bees was subsequently substituted for killer bees without loss of subject identity. In context, both symbols may be interchanged with one another and still convey understanding. Moreover, the most popular symbols are killer bee and africanized bee with "killer bee" preferred for item title.

Additional symbols used in news items suggest that "killer bee" is most associated with "dangerous things". Each usage was highlighted with quotation marks in news text to distinguish the phrase as an individual, relative concept linked with killer bees: "biological time bombs", "little time bombs", "the panic, the fear", "they're h-e-e-e-e-r-r-r-e-e!", "county is feeling bee-sieged", and "dreaded killer variety"; where the phrases suggest portending dread and danger [28]. In news text, Africanized bees was used in 49 out of 65 news articles as a substitution to avoid over-repetition of the symbol, killer bee which was used in 40 out of 65 news articles. While listening to commentary from residents in southern Nevada, "killer bee" has been used much more frequently in conversation regarding the same. Academic and agency officials notwithstanding, I have not at this time, encountered a resident who has at first, referred to the bees as "africanized bees" at the onset of a conversation, suggesting that the general public in southern Nevada through symbolic recognition, prefers "killer bee".

To test the stability of news paper designation for the Africanized Honey Bee over time, the news reports for 2006, posted at Stingshield, Inc., were reviewed after seven years of news paper reporting. Killer bee was used in 37 titles out of 98 articles, whereas Africanized bee was used in 15 titles. In the text of the news reports, Africanized bee was used in 56 articles, and killer bee was used in 34 articles.

After reviewing the 2006 articles, a journalistic practice of equating killer bee with Africanized bee was observed, and stable over seven years of news reporting. The title of the news items continued to show a preference for the use of killer bee. As stated earlier, a title with killer bee in it could suggest the reporter’s desire for sensationalism, yet there is a another reason: risk communication to the general public. Many of the articles featured safety tips for the public in regard to the encroachment of Africanized bees or killer bees.
Symbolic Bugs and Bees: “White Man’s Flies” and “Afro-American Bees”

Over time, many anthropomorphic terms have been used to name insects. The assassin bug is an insect that received its name for primarily preying upon other insects likewise, a cousin known as the ambush bug does the same thing. “Assassin bug” in this case, is derived from the domains of human action (assassination), and an insect type (bug), and yet the entire metaphor intends to anthropomorphically symbolize that one insect will "assassinate" another while acting as a predator. From the type of extreme defensive behavior exhibited by the *neotropical scutellata*, it is easy to see how the attributive symbol, "abeja asesina" was created. In similar analogy of the "assassin bug" and its target (insect prey), people viewed the frenzied defensiveness of *neotropical scutellata* as potentially deadly within the domain of action, specifically assassination. In the case of the assassin bug, human attributes were employed to describe inter-species conflict between insects, suggesting a metaphor blending. In inter-species conflict between humans and bees, again, a similar concept has been employed to meaningfully describe what may result from honey bee defensive behavior.

One metaphor that appears in film and literature is purportedly from Native American perspective of the early importation of honey bees (*Apis mellifera*) into the Western Hemisphere. In South America, natives have kept stingless bees, but when they experienced the European honey bee defensive stinging, they called the bees "White Man's Flies". This version of South American Native metaphor was featured in Martin Gorst's documentary film, *The Killer Bees* [25]. A similar version of this story appears in the Africanized Honey Bees in Arizona: Training Manual, but it was stated that the natives of North America in reaction to settler importation of European bees called them "White Man's Flies" [30]. This version of "White Man's Flies" also appears at the web site of Honey.Com: The Honey Expert sponsored by the National Honey Board, where the year 1638 is given as the likely date that the European honey bee was introduced into North America by colonists [31]. Another earlier source of this story is the web site of the Forest Preserve District of Cook County, Illinois. In their *Nature Bulletin, Number 583-A, November 29th, 1975*, a similar version is related, but the Indians are quoted as calling the bees "White People's Flies" [32]. This version is more than twenty years older than the previous examples discussed.

There are two discrepancies in these historiographic presentations: that the natives of either North or South America representing two distinctive geographic areas are claimed to have termed European honey bees "White Man's Flies", and that there are two native attributive statements "White Man's Flies" (1990's version) and "White People's Flies" (1970's version). The discrepancies suggest that this story is folkloric and may not have ethnographic foundation in American Indian cultural history. There is another acculturating issue in regard to perpetuating this story which will be further referenced in Conclusions.

When assigning common names to insects, a location or origin domain is often used as in: American Cockroach, Mexican Bean Beetle, European Corn Borer, San Jose Scale and so on. This location domain is also used for products like: American cheese, German silver, Japanese electronics, Italian marble, and so on. All of these names suggest a link with origin or location, but not danger. Like the previous examples, the symbol "Africanized honey bee" suggests the domain of origin rather than danger.

Benjamin Whorf discussed the habitual nature and use of language as problematical in certain instances. He observed factory workers carelessly smoking around empty gasoline drums at a factory where the area for drum storage had been clearly labeled "empty gasoline drums". In reality, empty gasoline drums had a greater potential for explosion than "full gasoline drums" due to the fuel-explosive vapor in empty drums. He ascertained that the workers were not alarmed by the "empty gasoline drums" posted sign because they linked "empty" with "inert" rather than "danger" [33]. In the same way, "Africanized bee" may be linked habitually with the domain of location, rather than danger as the symbol suggests. This presents a problem in understanding, whereas "killer bee" does not.

The verb, "Africanize", is a 19th century colonial term used in Africa which includes inflected forms utilizing "ized" and "izing" with "Africanization" as the noun form. Its first recorded use was in 1853 and currently has two meanings: "to cause to acquire a distinctively African trait", and "to bring under the influence, control, or the cultural and/or civil supremacy of Africans and especially black Africans" [4]. The second stated usage of "Africanization" appears to be the antonym of "colonialization"; although the first stated usage may be loosely applied to what apicultural researchers deem "hybridization". Therefore, "Africanization", which originally referred to a human social process, has been substituted for a biological process: "hybridization". It would be more accurate to name *neotropical scutellata* the African Hybridized Honey Bee, where African...
describes place of origin and Hybridized describes a biological process.

A Las Vegas newspaper columnist reported the objection to the use of Africanized Honey Bee by one high-ranking official with the Clark County School District in Nevada [34]. The author interviewed administrators of the District in May of 2000 to confirm the news release. The objection centered on the possible linkage one could make between “Africanized Honey Bee” and “Afro-American”, which could stigmatize Afro-Americans with the negative qualities of killer bees. While in my community, individuals who had read this article offered facetious comments about the District’s objection to Africanized Honey Bees. Some consultants stated, “If we can’t call them Africanized Honey Bees then what, Afro-American Bees?” Comments such as these clearly demonstrated that Africanized Honey Bee could be linked to an ethnic domain of Afro-American.

Using "hybridization" in its proper context, then neotropical scutellata honey bees breed with other subspecies of honey bees and a genotypical cline occurs which fades as neotropical scutellata become more prevalent and capture the niche of the former resident bee subspecies. The genotype then reverts to neotropical scutellata becoming the dominant subspecies in the area of colonization (Randall Hepburn, e-mail communication).

Residents of the Western Hemisphere from South America to the lower North American States have had to adapt unavoidably, to the presence of this bee, which is officially known by academic and agency researchers as the Africanized Honey Bee. Adaptive human behavior should exclude perspectives that place the bees in a "hype" category where "they may be dismissed as a gag" or thought of as "exaggeration concocted by tabloid journalists" [30]. While the residents in North America are now learning about and experiencing "killer bees" with adaptation necessary to coexist and avoid tragedy, at the same time may enjoy the domain of fun "honey bee icons" and not mix the symbolic domains of "killer bee" with "honey bee".

Conclusions

Considering Sherry B. Ortner's indicators of interest that would reveal symbols in a society and focusing upon the arrival of Africanized Honey Bees as a different kind of symbol, this bee subspecies is: 1) an important attribute that negatively impacts people, 2) it is present in many contexts, 3) there has been greater elaboration of its nature, and 4) it has caused more cultural restrictions or sanctions. One issue of cultural restriction has been criticism for media and lay-public use of the term killer bee; however, another restriction is present within apiculture in the manner of pollination and honey bee etiquette. Tony Jadczak [35], a State Bee Inspector for Maine, listed guidelines for honey bee etiquette in regard to placement of hives and public safety. Proapicultural academic and agency interests are advising such restrictions and observances within their own organizations to avoid rash public reaction to defensive behavior from honey bees, although outwardly, they discourage the use of the term killer bee by the general public.

Just like beekeepers and others who are highly attached to honey bees, residents in the southern Nevada area also hold them in high regard. In either case, much of the value for honey bees stems from a long-standing human/bee relationship going back thousands of years. The general public does not wish to contaminate the value image of "honey bee" with the reputed defense behavior of Africanized Honey Bees, and therefore places "killer bees" in a domain of dangerous things. Professor H. Randall Hepburn, Rhodes University, South Africa, reminded the author that they must coexist with cobras, boomslangs, and black mamba snakes which are far more dangerous than the East African Honey Bee. Although, one bee researcher in South Africa rated his scutellata colonies from “slightly terrible” to “terrible terrible” (personal e-mail communication).

The use of "Africanized" has semantic problems in that it appears to name a geographical place rather than a biological process like hybridization; whereas those associated with apiculture have an interdisciplinary understanding that "Africanization" means hybridization. The other connotation of "Africanization" is one that describes a human political process in Africa.

From an ethnohistoric perspective, it is interesting to review how Native Americans interpreted colonial behaviors and material culture items. Whereas "White Man's Flies" is an alleged native interpretation of colonial honey bees, the presentation as such has the implication of stigmatizing Native Americans as primitive, furthering the early film industry "Tonto" image of the American Indian. Even so, should "White Man's Flies" have historical validity that shows early native reaction and conceptualizing of imported honey bees, then it also shows how, in the same manner, contemporary journalists utilized language to symbolically conceptualize highly defensive honey bees as "killer bees".

Regarding the concern from the Clark County School District, I determined from interview, and participant observation that some people link the official term:
Africanized Honey Bee with the ethnic domain of Afro-American. This linkage could further symbolically connect any spectacular misdoings of Africanized Honey Bees (killer bees) with people of African descent in our country.

Academic and agency officials who support "Africanized Honey Bee" as a customary name for *neotropical scutellata* and yet criticize the use of "killer bee" by the media and the general public, may wish to reconsider the previous discussion regarding symbolic contrast of honey bee/killer bee which provides one explanation of why the symbol "killer bee" persists. It may be counterproductive for public safety to inform the general populace that Africanized Honey Bees are not a serious or dangerous risk. The news media and social communication between members in society continue to foster the hazardous nature of this bee which helps to maintain awareness of possible dangers. The public wishes to conceptualize a difference between honey bee and killer bee: this way, the symbol killer bee for cautious behavior and danger does not contaminate the symbol for the noble qualities of the honey bee.

It would be better to inform the public in North America (like South Africans who are enculturated with *scutellata*) that killer bees are dangerous and deserve due respect while they perform their noble tasks of pollination and making honey. Accordingly, residents of North America may then continue to enjoy honey bee icons and honey bee products with links to those enjoyable symbolic domains. If a spontaneous eruption of defensive honey bees were to occur, it would then be best to connect vocalized warning with the symbolic domain of "dangerous things", specifically "killer bees".

In June of 2006, a regrettable incident was published by the South African Press Association [36]. A 73 year old tribal elder of a village near Butterworth, South Africa, was stung to death by East African Honey Bees during a ceremonial practice to remove the bees from the village. The South African Press Association interviewed Randall Hepburn of Rhodes University, Grahamstown, South Africa, for his comments on the tragedy. He stated, "North Americans call them killer bees." In regard to both the East African Honey Bee in South Africa, and the same subspecies, yet now the Africanized Honey Bee in the Western Hemisphere, he stated, "Those bees are mean as hell."

Should the public's continued usage of "killer bee" create inflexible resentment in agency and academic fields in North America, then perhaps the following might be considered: the Swahili word, *juju*, represents both good and bad magic. The killer bees in recognition of their original homeland in Africa, could be commonly named "Juju Bees" rather than killer bees, Africanized Honey Bees, or *neotropical scutellata*. This would provide a functional metaphor in keeping with their contrastive nature as beneficent providers of pollination and honey like good magic, and yet pernicious defenders that may turn at a moment's notice like bad magic, and launch a vigilant pursuit of perceived threats to their colony.

**References**


