Competition Expressed: Marking Places within Rural and Urban Landscapes

Ralph J. Hartley* & Sharon L. Kennedy**

Summary

The extent to which marking places with images, symbols and/or script on a landscape reflect the dynamics of a socio-economic environment continues to be a subject of interest in social science. Places become socio-culturally meaningful often because of the content of the markings on non-portable surfaces. In some contexts the information content of the markings reveal a perception of propriety when competition for space or other resources between groups and non-kin related individuals characterizes a social environment. In other contexts the content of markings reflect competition between individuals for resources, status, or prestige. Urban environments, dense with diverse human activities, are laden with markings both socio-politically sanctioned and those often considered intrusive spatially and contextually, e.g. graffiti. Rural, less densely populated landscapes, are characterized by areas and places where markings produced in the recent past are signified socio-politically and often deemed worthy of maintenance and protection, e.g. indigenous rock-art. These places are, however, also subject to contemporary marking not socially sanctioned. We explore here the social context underlying variability in the marking of places in urban environments and in rural landscapes. The content, location and situational positioning of historic and contemporary intrusive markings in urban environments is compared to that of the juxtaposition of prehistoric and proto-historic rock-art as well as contemporary markings in the southern Black Hills of South Dakota (U.S.). Finally, we discuss the role of non-portable markings as a component of socially constructed space with the framing of questions and an approach to future research.

Riassunto

La demarcazione dei luoghi con immagini, simboli e/o scrittura riflette le dinamiche di un ambiente socio-economico; il fenomeno è di interesse per le scienze sociali. I luoghi si trasformano e sono percepiti come spazi socio-culturali in base a quanto è segnato sulle superfici fisse. In alcuni contesti lasciare un segno significa ribadire la proprietà, in particolare quando vi sono contrasti di ordine sociale ed economico per aggiudicarsi il possesso del luogo e delle risorse ivi contenute. In altri casi i segni possono indicare la marcatura a dimostrazione della concorrenza, tra singoli e gruppi, per aggiudicarsi risorse, un ruolo sociale o il prestigio. Per gli ambienti ad alta urbanizzazione si assiste a una presenza di molti segni, simboli e scritte, sui muri che in genere afferiscono alla sfera socio-politica; i graffiti, in particolare, sono percepiti come di disturbo e invadenti dello spazio pubblico e privato il che li porta ad essere sanzionati per il loro contenuto e per la modalità di esecuzione. Al contrario nei contesti rurali, con una ridotta densità abitativa, i segni lasciati da sconosciuti nel recente passato sono ritenuti degni di rispetto e di manutenzione per preservarne il contenuto socio-politico; ciò avviene, ad esempio, nell'arte rupestre indigena. Vicino ai segni del passato continuano a essere poste anche marcature contemporanee senza che vengano sanzionate dall'opinione pubblica. Nell'articolo è indagato il contesto socio culturale che sta alla base delle variabilità individuate sia per i segni nel contesto urbano, sia nel contesto rurale. Il contenuto, la posizione dei segni storici e contemporanei inseriti in un ambiente urbano sono confrontati con le manifestazioni di arte rupestre preistorica e protostorica, nonché con le marcature contemporanee nel sud della Black Hills del South Dakota (Stati Uniti). Sono presentati, infine, spunti di riflessione inerenti il tema affrontato e alcune domande per un futuro approccio alla ricerca.

* Department of Anthropology, Rm. 818, Oldfather Hall P.O. 880368 University of Nebraska-Lincoln, NE 68588-0368; rhartley4@unl.edu
** Sharon L. Kennedy, Director of Education Sheldon Museum of Art, University of Nebraska-Lincoln 12th & R St. P.0. Box 880300 Lincoln, NE 68588-0300; skennedy3@unl.edu

INTRODUCTION[1]

Humans cooperate and form coalitionary relationships in order to effectively compete at various scales ranging from that of kin-level to a broad non-kin social level that may, for example, enhance trading relationships, or enable dominance through lethal violence. The uniquely human ability to cooperate in huge groups of non-kin, i.e. ultra-sociality, is conditioned, to a great extent, on extensive social learning through imitation, symbolic and linguistic construction, and analogical reasoning to facilitate such relationships (HENRICH, HENRICH 2007; SMITH 2010; MACKINNON, FUENTES 2012; SANTOS *et al.* 2012). Maintaining these relationships in varying domains requires mediums of communication that can, when necessary, minimize ambiguity. We are also, however, highly capable of creating non-vocal informational content that can be difficult to evaluate accurately (CRONK 2005). Our dependence on the visual mode for discriminating information does not discount the advantages of different communicative modalities (e.g. sound, smell) that we rely on, but visual and spatial expressions are most often used to attempt an understanding of abstract concepts (KAPLAN, KAPLAN 1982, pp. 192-193; ROWE 1999; DUNHAM 2011, pp. 238-244).

The communicative dynamics underlying the creation and display of visually retrieved markings on or at places, in what is often a noisy informational landscape, is most fruitfully explored, we believe, within the conceptual framework embodied in signaling theory and receiver psychology. The adaptionist view of communication in behavioral ecology is the grounding for the conceptual definition of a "signal" as an act or structure that has the potential to alter the behavior of, usually, a con-species and is effective because it transfers information to receivers (MAYNARD-SMITH, HARPER 2003; SCOTT-PHILLIPS 2008; CARAZO, FONT 2010). Whereas "cues", although not necessarily geared toward influencing the behavior of others, can be characterized by animate or in-animate features that have the potential to inform or guide future actions. Cues are not, for the most part, considered to be communicative signals. While cues are permanently activated and fixed in an environment, signals can be turned on or off (e.g., vocalizing) eliciting an exchange of signals that characterizes communication. A behavioral or material display with particular characteristics produced as a signal serves as a conduit of communication.

The creation and placement of markings on non-portable surfaces in an environment is, we assert, a low cost signaling behavior that, similar to scent marking by other mammals, often occurs in the absence of a receiver. The information embedded in visual marking is assigned meaning by the receiver/viewer, or, as emphasized by Font and Carazo (2010), useful information is extracted from the markings. This information is often absorbed and processed after its initial retrieval and usually in the absence of the creator(s) of the marking.

Theory and models of signaling have been found useful in the discussion of marking on non-portable surfaces especially in reference to social interaction underlying the creation of prehistoric/proto-historic petroglyphs and pictographs

(e.g., VARELLA *et al*. 2011; FLAHERTY 2012; LENSSEN-ERZ 2012). The act of marking in some contexts is assumed to be that of individuals who expend time and energy in their own self-interest. The signaling of skill, prowess, prestige or other individual characteristics is hypothesized to underlie the creation of some rock-art (e.g., MCGUIRE, HILDEBRANDT 2005). An observer encountering the information content of a marking is better positioned to make evaluations of the qualities and characteristics of the creator and their cooperators, influencing decision-making and future interaction.

In an environment where groups are in competition for resources, whether it be territory or an immediate source of subsistence production, we see signaling operating at multiple levels. Investment in conspicuous construction, performance or distributions at the group level is a means by which to signal power, wealth and collective support. The creative production by individuals, as members of groups that maintain multiple signals and receivers, contribute to social signaling that communicate the collective interest of the group or cohort of a population with that of another (e.g, BOUCHET-BERT 1999; TACON 2002, p. 132; ROSCOE 2009).

We see the material manifestations of this individual-prosocial dynamic in public historic and contemporary settings. Speculating about underlying conditions for behavior observed in prehistoric creations is, however, often an exercise on the slippery slope of cross-cultural experience and analogical reasoning. Discussions of the behavioral grounding and contemporary interplay of graffiti and indigenous rock-art is, nevertheless, not without precedent (e.g., DAVID, WILSON 2002; WATSON 2008; FREDERICK 2009; NASH 2010; STEVENS 2012; LOVATA, OLTON 2015).

The placement of the marking on a landscape lends insight, we believe, into the role of non-vocal communicative behavior within environments that are characterized by a complexity of competition and conflict, the dynamics of which are in evidence for individuals and groups in both urban and rural settings. The content, location and situational positioning of historic and contemporary markings in urban environments is compared to that of the juxtaposition of historic indigenous rock-art and contemporary markings in the southern black Hills of rural South Dakota (U.S.). Additional references to places with signified markings in various urban and rural socio-cultural settings are included for the purpose of illustrating the utility of comparing the behavioral dynamics that underlie some marking in environments of stress.

The Rural Black Hills

The heavily forested Black Hills of southwestern South Dakota and northeastern Wyoming are characterized by highly dissected ridges, broad tablelands, valleys and deep canyons. The material remains of prehistoric and historic Native American activities are found throughout this landscape. Indigenous occupation and activities for at least the last twelve thousand years are in evidence especially in rock-shelters and in canyons near waterways. In 1874 Euro-Americans discovered gold in the Black Hills, and consequently, in violation of an 1868 Treaty with the Lakota Sioux the U.S. took control of the region. Throughout the latter half of the 19th century mining, logging, and cattle ranching brought thousands of non-Native American people to the area. For well over a century various Na-

Fig. 1 - "Jesus Saves" – Stone Quarry Canyon

tive American groups have actively contested ownership of this landscape. The Lakota Sioux, Cheyenne, and Arapahoe continue to maintain the resource-rich Black Hills as a sacred landscape within which many places of petroglyphs and pictographs are signified and deemed worthy of protection from damage and desecration, most of which are stylistically dated from the Middle Archaic (5000-2500 BP) throughout the post-contact era. In 1980 the U.S. Supreme Court ruled that the Black Hills were appropriated by the U.S. Government in violation of the 1868 Treaty and a financial settlement was mandated. This overall land claim, however, has yet to be resolved. Within the southern portion of the Black Hills are two drainages, Craven Canyon and Stone Quarry Canyon, managed currently by the U.S. Forest Service. The area encompassing these canyons is open to cattle grazing, hunting, and Native American traditional activities. During the 1950's and 1970's uranium exploration and mining in this area was conducted under permit from the U.S. Government (Sundstrom 2003, 2004).

Craven and Stone Quarry Canyons are rural settings that have attracted human activities revealed in miscellaneous graffiti, inscription, and rock-art defacement. Our attention here is in markings that attempt to communicate, by way of low-cost signaling, information that is directed toward influencing the behavior of the viewer or their perception of the social dynamics in this environment such that short and/or long term decision-making is affected. This framework varies somewhat from that of non-human signaling, in that the markings communicate or have the potential to communicate information available for the assignment of meaning by the viewer(s). The informational value of the marking

Fig. 2 - "Jesus is King" – Craven Canyon

can be expected to vary with the viewer(s) as well as through time. Moreover, the communication, while active in its visibility, can be altered with intention to revise or influence meaning.

It is assumed here that the creator(s) or producer(s) of the images and text are imbued with self-interest and goals, both immediate and long-term, that are amendable to non-vocal signaling. Symbols or script incised into rock that reflects a degree of commitment to a belief system such as "Jesus Saves" or "Jesus is King" contain the potential to influence the viewer's perception of others in the social environment (Figg.1 and 2). The act of carving or incising, however minimally costly in terms of time and energy, serves as a measure of the investment and commitment that characterize the creator (Flaherty 2012). The receiver of the information in the "Jesus" inscriptions is in a position to remember the "message" as intentionally communicated. The goal of which, in social evolutionary terms, is the pursuit of cooperation and group solidarity by means of increasing a belief commitment among the greater social group (HENRICH 2009).

Courtship signaling behavior is a topic intensely studied in most species and often is characterized by complex displays and multi-modes of signaling (CANDOLIN 2003; HEBETS, PAPAJ 2005, pp. 198-199). Human courtship behavior employs most effectively the visual, auditory and olfactory modes of signaling. In terms of sexual strategies theory, courtship behavior is conditioned by a highly competitive environment and many of the characteristics of our status display are centered on mating. In these canyons romantic relationships, presumed or anticipated, are the subject of markings. Stone Quarry canyon is narrow and highly

Fig. 3 - Incised heart with initials and date – Stone Quarry Canyon

Fig. 4 - "HENDRICK IS A WHORE" – Stone Quarry Canyon

permeated with small rock-shelters and overhangs. An informant highly familiar with this area notes that this canyon has been a setting for the activities of local young people for decades. In this canyon the creator of a marking can signal not only a commitment of intent directed to a selected or potential mate but also signal to active and potential competitors their intent and/or commitment. In a place where a male "John", for example, might carve, within the outline of a he-

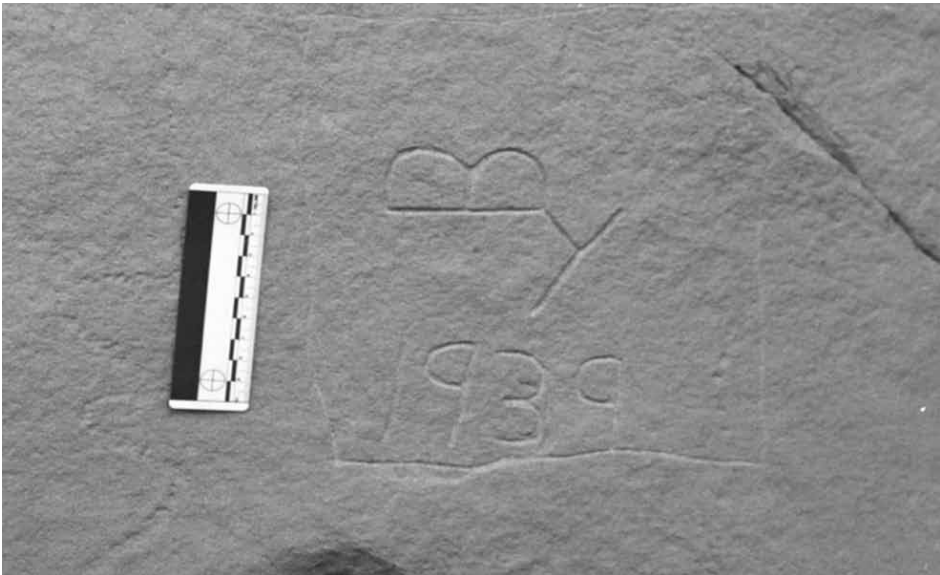*Fig. 5 - Brands, initials and dates – Stone Quarry Canyon*

Fig. 6 - Brands and date – Craven Canyon

art, "John loves Mary" suggests that the intended receiver of the information be "Mary", her associates, as well as any competing suitors (Fig. 3). Other females may find the behavior underlying this marking informational in that it permits, by what is termed in cross-species behavior, "eavesdropping". The gender of the signaler (creator of the marking) may be reflected in the symbol or image. As Cross and Campbell (2014) make clear, sexual reputation often underlies conflict

Fig. 7 - "I Am An Indian" – Stone Quarry Canyon

between females, especially those in their post-pubertal years. The "Henrick is a whore" inscription (Fig. 4) reveals, for example, an unambiguous, active, competitive social environment.

Euro-American use of the Black Hills in the late 19th century is characterized by intense resource extraction activities, e.g. mining gold and more recently uranium, timber harvesting, and grazing for cattle ranching – all of which resulted in the construction of railroads. Cattle were free to graze largely without the constraints of fencing. Ranching families, being holders of highly valuable, yet mobile, livestock branded cattle with a morphological designation easily identified to that of the kin-group. These symbols of ownership or propriety were useful as cattle co-mingled with those owned by other families or extended kin-groups competing for effective grazing land in remote areas. A common threat was theft, e.g. "rustling", by others coveting this resource. Carving or incising one's brand marking on rock surfaces at sites within the large expanse of area where their cattle grazed and/or herded is observed cross-culturally, the result being the distribution of markings of kin-based identification on non-portable, somewhat permanent surfaces, for encounter and interpretation by the viewer (Figg. 5 and 6) (WINKLER 1947; GRAMLY 1975; LYNCH, ROBBINS 1977; LENSSEN-ERZ 2012, pp.104, 108; KALHORO 2013). Cooperating kin-groups in this social environment as well as those competing for quality grazing land and those with interest in theft of the cattle could, when encountering this place-based information, evaluate its significance such that decision-making about activities in this landscape was influenced.

The historic Euro-American domination of the resource-rich Black Hills environment, with its intense land-use, multiple resource extraction activities and demographic saturation has not diluted Native American claims of ownership rights to this region. Since the U.S. Government took proprietorship of the Black

Fig. 8 - Context of painted "white man go home" – Craven Canyon

Hills soon after gold was discovered in 1874, Native Americans, especially the Lakota Sioux, Cheyenne, and Arapahoe, have actively contested rights to ownership of much of the region. Of interest here is the extent to which these broad conflicting claims of ownership and land-use are represented in markings in this landscape, for example, "I am an Indian" (Fig. 7).

While graffiti permeates Craven and Stone Quarry canyons and has accumulated for decades, some markings reflect an interest in defining social borders (Ross 1975). Contemporary tension stems from the competing activities with which Craven Canyon, especially, is burdened, e.g. commercial horseback trail rides sponsored by ranching families, hunting, cattle grazing, uranium exploration, recreational rock climbing, and Native American traditional activities such as vision quests and cultural instruction of young tribal members. This conflict is unambiguously communicated and positioned in Craven Canyon with that of the painted "white man go home" (Fig. 8).

The Urban Setting

In dense, contemporary environments competition for limited space conditions behavior of both individuals and groups of varying sizes, often leading to social conflict expressed in various mediums of communication. Graffiti and street art that reveal the contesting of space is known cross-culturally to be a mechanism of behavior where social conflict and economic stress defines an environment (e.g., Ley, Cybriwsky 1974; Rolston 1987; Peteet 1996; Frederick 2000; Baker 2003; Chmielewska 2007, pp. 163, 166; Silva 2010; Stevens 2012; Nash 2013, pp. 443-444)[2].

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2   The intense socio-political unrest in Oaxaca, Mexico for example, beginning in the spring of 2006 resulted in prolific graffiti used as a political weapon to make the streets more visible to a populace vulnerable to labor oppression and violence. What began as a routine teacher's strike evolved into violent retribution by the government against the mostly female teachers and their supporters (Nevaer 2009, p.59).
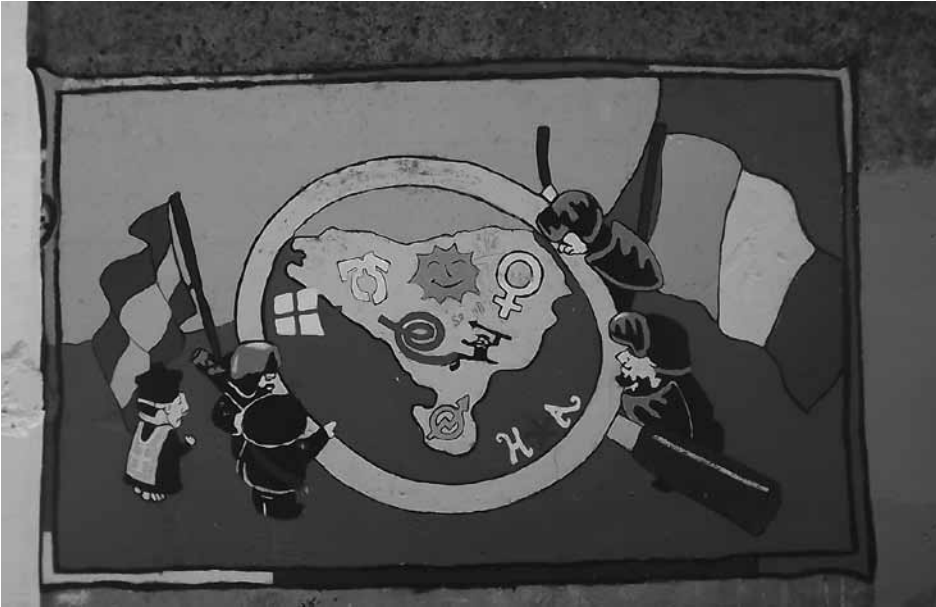
Fig. 9 - Mural of a French and Basque map, near Rue de Tonneliers, Bayonne, France

Some groups view markings such as graffiti a medium for communicating through non-vocal signaling how they believe a space is to be used and thereby exploit space to direct discontent toward their competitors. While the content of some markings express concern for global issues other expressions of discord are focused on the local environment and the complexity of social relationships characterizing an urban setting. Whether a space for such marking is sanctioned socio-politically is dependent oftentimes on factors such as the physical space, location within the built environment, and history of the place (e.g., WALDENBURG 1990; ORENGO, ROBINSON 2008; HAWORTH *et al.* 2013).

Expressions of overall consensual sentiment such as that on large murals positioned for public view on structural walls can serve as propaganda to further political messages that reflect competition within a socio-economically contested area (Fig. 9). Unambiguous messages expressed through this means can communicate resistance by a group or sub-group who maintain defiance under the rule of an adverse government. The variety of large paintings produced in the 1980's-1990's signaling socially the competitive positions between Protestant/Unionist/Loyalist groups and that of the Catholic/Nationalist/Republican allegiance in Northern Ireland are acknowledged as effective examples of combined images and text strategically positioned in a landscape where intense conflict was maintained for decades (ROLSTON 1987; SLUKA 1992; JARMAN 1997). The utility of large format murals to reflect socio-economic stress in Ireland continues as the government creates mechanisms to attempt financial recovery from near economic collapse. Where unemployment of the younger cohort of the population nears 28%, widespread resentment of government policies and financial institutions is exemplified in a large, colorful mural on a closed storefront in central Dublin (ALDER-

Fig. 10 - Tagging or throw-ups in a busy shopping area of Venice, Italy

Fig. 11 - "The Sheepest" – New York City

MAN 2013A). And in Greece, where economic collapse has stressed the populace in recent years, leftist and far-right socio-political groups compete intensely for power. This competition is reflected in layers of graffiti where superimposition and over-marking is common, especially in the working class neighborhoods of Greek cities (ALDERMAN 2013B).

The producers of graffiti in contemporary affluent urban settings are known to actively compete with commercial advertisers in their reaction to the widespread commodification of space. In many cases there exists an attempt to subvert urban signage and incorporate anti-branding and anti-corporate logos. Through the use of "tagging", "throw-ups", or quickly rendered and repeated symbols or signatures, graffiti writers insert their own version of market saturation and repetitive imagery to claim or re-claim space (Fig. 10).

The elaborate and repetitive display of signals in non-human animal behavior is argued to be akin to that of mass media advertising in that rarely is new information conveyed during repeated and redundant commercial advertising within different forms of media. Rather, repetitive exposure to the message is oriented toward eventually convincing one to buy the product or service in an environment where the consumer is faced with the claims of competing entities (DUNHAM 2011).

The products of graffiti and street artists are oftentimes a means of advertising skill, talent, or daring. The ethnographic work of Halsey and Young (2006) and Taylor (2012) indicate "pride", reputational status, and "publicity" as self-identified incentives. To incur risk in the successful production of a marking is a means of accumulating prestige, especially when placement of the marking is perceived as inaccessible, i.e. "stay-ups". The striving for prestige is a competitive exercise that fuels "communication amongst the family on the street" (Halsey, Young 2006, p. 280). Interviews with primarily young male graffiti writers in London, New York, and Perth confirmed Macdonald's (2001, p. 84; TAYLOR 2012) generalization that "The greater the danger, the greater the respect." The "symbolic capital" for young males marking in dangerous and risky settings is invaluable in the social milieu of their age cohort. As they age socio-economic conditions may change, but their identity display has a potential to endure. Benefits to graffiti artists who produce repeated imagery include ensuring that those encountering the graphic in an otherwise visually noisy environment interpret the intended information with some accuracy as well as creating an identity that is not to be confused with the markings of others. In high density social environments the producers of the images are likely undergoing competition from others in their social group so in order to strive for or maintain the perks of influence and prestige must signal consistently to the community his or her status (KAPLAN 1987; BLEIGE-BIRD, SMITH 2005; PLOURDE 2010). The French graffiti artist who goes by the pseudonym "The Sheepest", for example, maintains his consistent sheep imagery and signs his work using dollar symbols in place of each letter 's', thereby signaling his protest of the human consumption of mass marketed goods (Fig. 11). His sheep are situated on walls so as to observe the world like a camera. In the artist's view, sheep are submissive and followers, not unlike mass consumers. This graphic imagery is found on structures and walls in major cities across the world and multiplied further through social media technology.

Fig 12 - "Fucking Tourist" – along walking trail leading to Park Guell, Barcelona, Spain.

DISCUSSION

Some of the markings in Craven and Stone Quarry Canyons reveal similarity to those in dense urban settings where competition for the resources characteristic of a space is observed in images, script, and graphic symbolism on non-portable surfaces. Much of the graffiti, inscriptions, and petroglyph and pictograph defacement in these canyons reflect the conflicted ownership of space in the overall contested region of the Black Hills. The incised "white man go home" observed on a rock wall in Craven Canyon exemplifies an attempt to define social borders and group identity that reinforces a cultural topography in the midst of conflicting claims to this landscape (HARTLEY, VAWSER 2002). Likewise, in laying claim to an urban tourist destination, for example, a graffiti writer spray-painted "Fucking tourist" in bold black letters on a wall along the heavily used walking trail that leads to the public Park Guell in the Gracia district of Barcelona, a city known for its long history of social unrest (CASELLAS 2009; Fig. 12). The targeted audience could hardly miss the strategic placement of the baiting message. These markings, as a medium of signaling, exemplify the assertions of McGlade (1999) that ideologies underlie the creation of socially constructed landscapes and are in effect an expression of socio-cultural identity.

In order for any signal to be effective it must be discriminated from other stimuli and signals in the environment of the receiver/viewer (ROWE 2013, p. 519). Controlling for ambiguity with place-marking may be in some contexts challenging, yet in some localities or contexts attempting to enforce ambiguity might be advantageous in the attempt to influence receiver/viewer behavior or decision-making. Graffiti in Montreal and Warsaw with names and letters as its primary

content was studied intensively by Chmielewska (2007). She notes the importance of these markings for "negotiating local identity" in their socio-cultural setting. These linguistic and signature markings are not dissimilar morphologically from that of the distorted numbers and letters forming the "Captcha" translation required to initiate a human-computer program connection. With place-based graffiti the viewer uses both his/her visual interpretative skills with the locality of the marking to extract information and assign meaning. With a "Captcha" the computer is attempting to induce limited visual ambiguity with the goal of making a determination as to whether it is communicating with a human or another computer algorithm. The physical environment of this informational transaction is irrelevant. Creating ambiguity in visual marking is, and likely has been for millennia, a human behavioral skill that facilitates attempts to filter interpretations made by receivers of a signal.

To mark on non-portable surfaces, whether it be a rock face or a human built structure, modifies a landscape. Where a marking is placed is a variable of importance when acknowledging the fluid dynamics of competition between individuals or groups. When markings on non-portable surfaces in both the built environment and in the topography of a rural landscape are encountered, information is extracted and meaning is assigned that result from both the content of the marking and its placement. When the marking has some permanence it contributes to the socio-cultural topography in which people live. These modified places become stimuli in the construction of an individual's cognitive representation of space that, being based on existing features of an environment, influence spatial behavior (KITCHIN, BLADES 2002; AMEDEO, GOLLEDGE, STIMSON 2009, pp. 299-301). Visually significant addition or change in an urban built environment as well as in a rural setting can become a spatial reference in the challenges and decision-making inherent to the mobility of people. Whether the marking reflecting a competitive social context be large painted murals signaling socio-political status and intent such as that in Northern Ireland, graffiti protest of violence in streets of Oaxaca, or the dynamics of flirting in courtship behavior as observed in Stone Quarry Canyon, each can function as anchor points in the cognitive map of those using or living in an environment. The life history of a place in settings of active competition can yield a landmark where particular activities or interaction occurred (e.g. ZEDENO 2000; WHITRIDGE 2004; STEWART, KEITH, SCOTTIE 2004; MOREAU, ALDERMAN 2012). These markings can also contribute to "place-attachment", recognition that the socio-cultural meanings associated with a place are often perceived as a binding agent between individuals and groups (STOKALS, SHUMAKER 1981). The potential to influence social identity with place-based marking is high when meaning is assigned and expressed through narrative discourse and storytelling, reflecting the complexity of shared space (RISHBETH 2014).

Humans are not unique in that many species modify the landscape in which they live but the breadth and volume of information we, in contemporary social systems, convey through space and time by way of various social mechanisms is unparalleled. The kinds of place-based markings discussed here reflect social dynamics as well as influence social interactions. Those individuals encountering a marking do not, of course, interact with all others populating a setting. The po-

tential, however, for an indirect connection via the viewing of the marking creates links that enable social network theory and analyses to be used in investigating the influence of a marking on social and spatial behavior. That influence, for much of human evolution, was dependent primarily on physical encounter with a place. The communicative complexity characterizing our social dynamics over the last century has increased with technological innovation ranging from radio to networks of satellite systems that create a perception of space independent of time and physical encounter. Photographs of graffiti and murals placed on non-portable surfaces are often used to enhance the dynamics of a story or analysis in text (e.g., ALDERMAN 2013 A,B). The communicative media with which text-based information and images are transferred are now highly portable and broadly accessible, ranging from print to internet based mediums. Places photographically captured in the contemporary built environment that are or have been used to signal the status of socio-economic competition and conflict have the potential to communicate information that is not dependent on a physical visual encounter. The assignment of meaning to these photographs, being context dependent, is then vulnerable to greater variation and, we assert, manipulation. The significance of a marking in its setting, often of temporary duration, can change rapidly in concert with the social dynamics in a rural landscape and an urban environment.

CONCLUSION

To what extent then does contemporary social media technology influence the content, placement, and style of non-portable markings that reflect conflicting claims and competitive behavior in rural and urban environments? We would expect that the extensive information sharing characteristic of these technologies helps create feedback to the decision-making made at places. With the intensive proliferation of mobile communication devices place-based marking has the potential to be an immediate signaling medium with which group coordination can be enhanced or initiated (cfr., Kelley 2014). Contributing individuals are, through their actions and abilities, willing to bend their self-interests to larger scale, more organized efforts. Strength in numbers and power can be masked and difficult to evaluate by adversarial groups. In many social settings costs and benefits to the individual in the pursuit of prestige and status by way of place-based marking are intensified, such that competition is broadened and the potential payoff greater, with a concomitant challenge to maintaining status. Delineating the self- interest goals of the creator of markings in environments and contexts where vast quantities of signal receivers reside, who themselves have differential interests in evaluating the signal, makes amenable agent-based modeling that focuses on interaction and modes of communication among individuals according to an explicit set of rules of behavior. To establish measures of effect of such broad and intense signal dispersion requires the integration of social and evolutionary psychology and anthropology, the goal of which will be to generate new hypotheses about how markings on non-portable surfaces function in contemporary social dynamics characterized by communicative technologies that induce a perception of compressed time and space.

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