

# Inconspicuous Consumption: Non-Display Goods and Identity Formation

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**Abstract** In the study of ancient material culture, archaeologists have primarily focused on the use of objects for display and communication. This social function of material culture could only have developed on the basis of individual cognitive capacity for the use of goods as materializations of symbolic behavior. To explore the deeply held relationship of identity to material culture, this paper focuses on goods that are utilized away from the gaze of others. Using examples from the ethnographic present such as pharmaceuticals, underwear, and hygiene products, I develop the idea of “reflexive identity” to describe how people use material objects in private to define themselves prior to and independent of their social roles as perceived by others. The act of daily identity creation and affirmation through goods, particularly those that are inexpensive and disposable, indicates the extent to which human cognition and psychological sense of self are inextricably linked to the handling of material culture. The archaeological application of a reflexive identity enables us to understand how ordinary goods are a fundamental component of identity formation prior to and independent of individuals’ engagement with others.

**Keywords** Consumption · Cognition · Identity · Material culture

## Introduction

Human lives are inextricably associated with materiality. Portable objects such as clothing, ornaments, food and tools are implicated in every type of activity, while fixed features in the form of architecture and landscape modifications are the stage for social interactions. Social theorists, economists, and psychologists all have explored the essential link of humans to material objects as a component of language-based communication and as a means of projecting social roles (Appadurai

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1986; Bettie 2000; Bourdieu 1984; Csikszentmihalyi and Rochbert-Halton 1981; Douglas and Isherwood 1996 [1979]; Loasby 2001; Miller 1985; Schiffer and Miller 1999; Turner 1980). The common theme in previous research on consumer behavior is that the acquired goods are meant to be seen. Consumer items are supposed to be *visible* symbols, in which items are acquired and displayed to validate one's social claims and to emulate the behavior of higher-status groups for social gain (e.g. Bell 2002; Douglas and Isherwood 1996 [1979], Garvey 2001; Miller 1985, 2001; Veblen 1899). Archaeologists also have focused on the way in which material culture is used to create distinction between groups and among members of the same group. They have been concerned with the way in which symbolic behavior as manifested in material culture has been a part of human social evolution, ranging from the earliest manufactured objects and symbols (Conkey *et al.* 1997) to the development and display of ethnicity and group membership (Wobst 1977) and material signaling by elites as a component of social complexity (D'Altroy and Earle 1985; DeMarrais *et al.* 1996; Helms 1993; Schiffer 2005; Treherne 1995; Walker and Schiffer 2006).

The emphasis on display qualities however leaves out an important category of material objects: goods that are not designed to be seen by others. Such goods constitute a wide variety of personal items whose actual use is known only to the consuming individual; in the modern realm, these include pharmaceuticals, underwear, personal hygiene products, and intimate tattoos. Although their use may be publicly displayed by proxy (in the form of shopping bags or catalogs), the principal impact of the product on identity formation is limited to the intensely private sphere where those goods are utilized away from the gaze of others. In this paper, I use the term "reflexive identity" to refer to the way in which people develop and display self-perception through the use of material culture. Reflexive identity can be defined as the identity that people project to themselves and that contains elements of self-awareness or self construction that are not wholly public. The deep psychological link of humans to the physical world at both the individual and the species levels provides a means of explaining how our hominid ancestors distinguished themselves from other primate species through a complex repertoire of material manipulation, possession, and display.

The archaeological and ethnographic study of intimate units such as the household enable us to evaluate the potential for examining progressively smaller realms of human social interaction. As Richard Wilk (1990:35) has noted, "Viewing houses as a consumer good, the product of patterned and constrained choices and decisions, provides a coherent and workable framework for integrating the multifaceted nature of the built environment." Houses and households provides a microcosm of human interaction that is a manageable size for both the individual who lives in an identifiably circumscribed space and for the researcher who wishes to evaluate behavior. The household's utility for social analysis is that it consists both of a socially-recognizable unit accompanied by a physical manifestation (usually in terms of a dwelling) *and* a continually-changing series of individuals whose inputs and capacities may shift significantly over the course of the human lifespan. This stable-yet-fluid dynamic enables researchers to uncover within the microcosm of the household the workings of large-scale social practices such as changes in gender relations (Gullestad 1993) and the emergence of "modernity" (Garvey 2001). Archaeologists too have utilized the household unit as a readily-

identifiable architectural component whose contents enable us to evaluate kinship relations, ritual practices, and economic activities in the past (e.g. Allison 1999; Kent 1990; Manzanilla 1996; Wilk and Rathje 1982).

The body, as an even more intimate realm of materiality, also has been explored by archaeological theorists seeking to move “from system-centered models to actor-centered models” for the explanation of human behavior (Robb 1999:3). The human form can be characterized as embodied agency and the “site of lived experience,” enabling researchers to evaluate the way in which individual bodies are both the sources and repositories of dynamic social interaction (Joyce 2005:139; see also Schildkrout 2004). However, even in this agent-centered realm the notion of bodily alteration is guided by eventual performance in public, in which “By means of dress, ornamentation, body modification, posture, gesture, and representation, an individual has the ability to ‘put on a social skin’, allowing self-identification as a member of a larger or different social or interest group” (Fisher and Loren 2003:225). We should consider that there is an even smaller realm of materiality: the interactions that individuals have with goods that are not designed to be seen by others even within the highly selective confines of the household. While the selection and acquisition of goods are almost always undertaken in the public sphere, many of those items are utilized in private and their presence cannot be confirmed by an external viewer. This realm of consumption and use is intertwined with human cognition and psychology, because the construction of identity is a process initiated and maintained by the individual prior to and, to some extent, independent of interactions with others.

### Material Culture and Identity

Identity can be defined in various ways but it is primarily “an internal process by which one defines and integrates various aspects of the self” (Deaux 2000:222). Robert Kleine and other social psychologists have observed that there is a distinction between public and private projections of that self, characterizing public projections as a “role” (which is socially enacted) and private projections as an “identity” (which is an internalized perception of individual capacities). A person may have an idealized identity that is constructed privately and only selectively displayed; for example, an identity as an athlete that is independent of the actual frequency of engaging in socially visible athletic activities (Kleine *et al.* 1993). Roles and identities are developed early in life, but they are also highly changeable and can be modified by the individual. The use of material culture is the most straightforward way of expressing these shifts and subtleties of identity as they are selectively created and afterwards displayed to others.

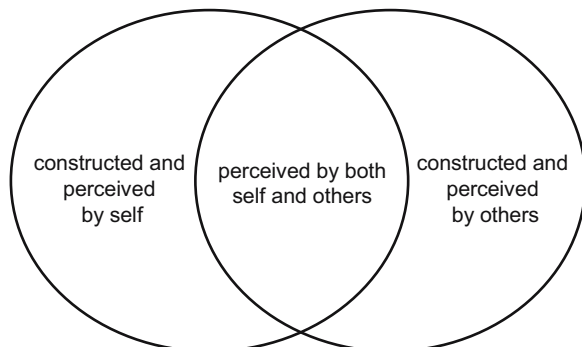
An individual’s identity is capable of being formed at a very young age, as examined through studies of infant cognition. The French psychologist Jacques Lacan (1977[1949]) discussed how mirrors demonstrate the self-identification that is a fundamental component of human psychology. A normal infant’s ability to recognize itself as early as the age of 6 months signaled to Lacan the existence of an “Ideal-I” that “situates the agency of the ego, *before its social determination*” (1977:2, emphasis added). The metaphor of the mirror—in which the individual looks back at her/himself—illustrates how “reflexivity and self-reflexivity work to

center and locate subjects” in a process conditioned by the way in which the individual will eventually be seen by others (Nast 1998:99). For an adult, this conditioning takes place *before* the individual leaves the mirrored space to encounter others, and however mitigated, rests on the individual’s desired identity as well as her/his realistic assessments of how that reality will be perceived outside the private sphere. Private environments, whether or not they include an actual mirror, enable the performance of acts in “a transitional space in which what is fantasy and what is reality is not yet decided” (Burgin 2000: 85). As soon as the act is viewable by another person, the “reality” becomes concretized in a way that produces a socially-recognized role.

The realization of a social role has three components: that which is intended and projected by the individual; that which is intended and acted upon by others; and that which is developed by others independent of the individual’s volition. Figure 1 shows the relationship between private identity formation and public perception, in which privately-held reflexive identity is counter-balanced by an identity over which the individual has no control. In the overlapping central area there is the identity that is both self-projected and perceived by others. It is important to keep in mind that some components of an individual’s reflexive identity are thwarted in their public expression. Individual perceptions of sexual desirability, glamour, strength, intellectual prowess, and other qualities may—even with the right material culture—never be successfully conveyed to others. Conversely, some components of identity are designated by others and cannot be successfully negated by the individual (e.g., Nast 1998).

The notion of performance, consisting of actions that validate and actualize uses of material culture, is what links the three realms of Fig. 1. While goods are generally only acquired once, their use is an ongoing function in which choice is exercised regularly about which item to use, when, for how long, and to what effect. Schiffer and Miller (1999:103) proposes that human behavior in general is equivalent to “performance in relation to other interactors in the material medium.” Evaluated this way, performance for the self is no different from performance to others except that in the private realm the individual is the only one who determines whether, how, and when to use particular items. The individual is also the only one to adjudge whether the performance is successful; although external motivators (such as the anticipated responses of others) are often proposed as critical

**Fig. 1** Identities as they are actualized in private and public realms.



determinants of behavior, they may not be the most salient validating factor for private actions. The study of Rise *et al.* (1998) on health-maintenance actions isolated two aspects of decision-making that are completely centered on the individual alone: past behavior and perceived behavioral control. Memory (or the constructed recollections of past behavior) alone is an insufficient predictive mechanism of behavior, since memory is itself filtered through active performance and perceptions of control. In broader terms, then, even memory must be re-enacted through performance to have relevance in the attainment of reflexive identity.

Objects that enable individuals to develop or reaffirm identity are usually projected into a public sphere as part of the transformation from private sphere to social role. Winnicott (1971:114) cites the case of a woman whose daily sentiment of deep depression was mitigated only after she “put on her face”, an illustration of how makeup was the physical means used to transform a private self into public role. Individuals can have a perception of private acts of performance that are distinct from their public appreciation in many ways. One example can be found in the psychotically-altered states that produce “art” (whether in the form of repetitive dots seen in Paleolithic caves (Lewis-Williams and Dowson 1988) or contemporary writing and painting). The material manifestation of the altered state is afterwards viewable by both the outsider and the creator, but the state that has produced them has dissipated (and may not be exactly replicable). Another example of the dissonance between private and public performances is found in the phenomenon of object collections. Even when these are comprised of common items such as stones, stamps, or matchbooks, collections are idiosyncratic in that each individual reconciles new acquisitions with an intensely personal frame of reference for the rationale of how that new item fits into ever-expanding definitional parameters (Bianchi 1997). Even intangibles, such as light and sound, can contribute to the construction of identity (e.g., Moore 2005; Streicker 1997). Jo Tacchi’s (1998) study of radio listening habits showed that while the sounds that are listened to in private become the basis for interactions with others, the intensity of emotion and loyalty to a particular radio station are mitigated and lightened for display in the public sphere because individuals wish not to be seen as overly enthusiastic. One can imagine other situations in which identities that are fiercely held at the individual level are never fully revealed in the public sphere for fear of ridicule or dismissal.

A person’s identity is not a static entity, but is achieved through continual reactivation. As a result, performance as an iterative act is an essential part of the identity-maintenance process. Private identities are reaffirmed and modified by the individual on the basis of new internal and external inputs, and the process of identity maintenance is a dynamic one. Private perceptions are crafted into social roles and social roles are resorbed into identity formation, resulting in a “matter of *illusion*...that belongs inherently to human beings and that no individual finally solves for himself or herself...no human being is free from the strain of relating inner and outer reality” (Winnicott 1971:13, emphasis in original). As a result, reflexive identity formation is coherent while also being a continuous work in progress, with a capacity for novelty as well as the cognitive short-cuts of patterning (see Loasby 2001). Actions with material culture need to be performed regularly in order to sustain identity, just as food and water are continually required in order to sustain biological viability. Through a process of quotidian action, formulations of the self

can be variably constituted and humans can actively add or modify their identities without negating past identities.

The objects involved in those quotidian actions of identity formation include items that have a high relative abundance and/or a high frequency of use. This frequency of use enables individuals to have more consistent outcomes, a process of “practice makes perfect” that enhances both private and public performances (see Derossis *et al.* 1998; Ericsson *et al.* 1993). As a result, ordinary goods may enable a more conscious and purposeful iteration of identity than seldom-used objects whose meaning is relatively static (Kleine *et al.* 1993; Smith 1999). Interactions with mundane goods can take a variety of forms: the handling of familiar or nostalgic objects whose worth is enhanced for the individual through idiosyncratic memory (e.g. Garvey 2001; Young 1991); the use of ephemeral items such as foods or cosmetics; or even the purposeful discard of objects in order to eliminate some unwanted component of identity. Items that are widely-available, inexpensive, and mundane seem to be a particular focus of this latter category of use. In her study of a small village in the Tamil Nadu state of India, Diane Mines (1997) noted that people who were suffering from physical or mental maladies would act to transfer malevolent spirits to a food item such as an egg or a ball of rice, which was then discarded outside the village boundary with the intent of freeing the person from the evil that caused the ailment. Similarly, Masquelier (1997) has observed how small, ephemeral items such as cloves of garlic and sugar cubes serve as vectors of witchcraft in Niger.

### **Material Goods and Private Identity: Three Classes of Objects**

By focusing on commonplace goods, we can identify the repeated performances of identity that were manifested as a necessary cognitive precursor to social interactions on both the individual and the evolutionary scale. This will be evaluated through three categories of privately-utilized ordinary goods: pharmaceuticals, underwear, and hygiene products. This use of modern material culture to build models for the human past can be justified on two grounds. First, observations of modern behavior have often been the only way to begin investigating the evolutionary trajectory of complex social interactions. Studies of small-group experiments have provided the basis for modeling ancient state systems (Johnson 1982), while observations of contemporary uses of material culture as markers of distinction provided the impetus for studying ethnicity in the past (Hodder 1982; Wobst 1977). Studies of modern farming communities enabled researchers to understand the social relations of labor and the economy that underlay ancient cultivation systems as well (Netting 1993). Modern gender studies furnished the theoretical foundation for critical revisions of the role of women in human social evolution (Dahlberg 1981; Hawkes *et al.* 1998). These studies also prompted the search for archaeological evidence of other behaviors previously thought to be “invisible” such as mothering and childbirth (Beausang 2005) and childhood itself (Baxter 2005). Ethnoarchaeological studies of ceramic, metal, and textile production enabled researchers to ascertain how premodern production was developed and transformed (Kramer 1985; Longacre 1991). And at the other end of the consumption process, studies of disposal and

discard have provided the basis for understanding human disengagement with material culture (Beck and Hill 2004; Rathje and Murphy 1992; Schiffer 1987).

A second reason to integrate modern consumer studies and the archaeological past is that contemporary, Western people often have been omitted from model-building. Most ethnographic research used for archaeological models concerns small-scale societies (preferably in “exotic” and hard-to-reach locations) or production processes that involve low levels of technology. The expectation that these groups are somehow better for archaeological model-building is coupled with a vague suspicion that the Industrial Revolution and globalization has produced a wholly new form of consumption behavior. However, the patterns of consumption evident today are the florescence of cognitive capacities present in our species for at least the past 50 thousand years. Individuals in the most developed nations should not be exempt from providing information about human behavioral processes; moreover, the relatively straightforward ability to capture data should prompt us to actively seek out modern activities to create models of early human behavioral trajectories (e.g., Schiffer 2005; Schiffer *et al.* 1981; Walker and Schiffer 2006). As long as there is *any* evidence in the archaeological record for privately conducted engagements with material culture, we can utilize the continuity of human cognition to provide models of individual actions in archaeological contexts. All three of the categories of goods discussed below address bodily realities of health and fitness that would have been perceived by ancient individuals as well, constituting a robust basis for understanding how individuals direct their autonomous cognitive processes to the materialization of private identity-linked behaviors.

### Pharmaceuticals

In the USA alone, billions of dollars are spent in the development, research, promotion, advertising and sale of prescription medicines designed for a wide variety of conditions ranging from cosmetic alterations to life-threatening illnesses. Billions more are spent by consumers on a variety of non-prescription concoctions such as “nutraceuticals,” “cosmeceuticals,” stimulants, vitamins, and performance-enhancing supplements. Yet all of these substances are intended to be inhaled or imbibed in private. This aura of privacy is maintained throughout the acquisition process, from the moment of initial contact with the pharmacist in which customers are requested to maintain distance, through the purchase and bagging of the items. Unlike cafés, pharmacies never have tables and chairs available for customers who want to partake of their prescriptions immediately upon receipt.

Many prescription and “over-the-counter” medications are designed to address a variety of physiological conditions that are perceived as abnormal, including specific ailments (e.g., bacterial infections), episodic discomforts (e.g., heartburn) and long-term health conditions (high blood pressure, asthma, anti-rejection medication for organ transplantees). Non-prescription drugs also include formulations consumed to enhance a general sense of “well-being” or in a belief that they can prevent illness. Dietary supplements, consisting of over-the-counter compilations that include vitamins, minerals, and botanical products, are estimated to be represented by over 29,000 different products in the USA alone (Palmer *et al.* 2003:101). Another growing industry consists of “nutraceuticals” or “medical foods”

that are perceived to have therapeutical properties, such as genetically-engineered foods, or foods with added components such as calcium-fortified orange juice (Childs and Poryzees 1998).

Ethnographic studies show that perceptions of identity play a large role in the decision to consume prescription and non-prescription drugs. However, there is an interesting skew in use: people who are assigned prescription medications often tend to avoid them, and non-prescription medications such as over-the-counter remedies tend to be overused. Among prescription medications, non-compliance begins even prior to the acquisition of the medication: Miller (1997:44) notes that up to 20% of prescriptions are unfilled, with the chief reason being “the patients’ belief that they did not really need the medications.” Even with the medication in hand, individuals who have a doctor-diagnosed condition often do not find the existence of the condition or the suggested treatment a sufficient reason for actually consuming the prescribed medication. This is true not only of psychotic illnesses where the mental state of the patient may be a mitigating factor in the successful adherence to a drug regimen (e.g., Ruscher *et al.* 1997) but also in the treatment of physical conditions such as hypertension, heart disease, and diabetes in which rates of non-compliance are as high as 50% (Ross *et al.* 2004).

Qualitative studies of prescription-taking behavior show that people avoid taking medications because they do not want to feel as though they have become infirm, because they wish to avoid self-perceptions of dependence or addiction, and because they reported that they were brought up to avoid taking any more drugs than is absolutely essential (Benson and Britten 2002). The last comment is particularly interesting, since the ultimate judge of what constitutes “too many” drugs rests with the individual. Patients in this and other studies mitigated their diagnoses by altering dosages, either by ingesting only a percentage of the prescribed amount, or by spacing dosages out around other activities such as consumption of alcohol in a series of decisions that “minimize side effects and foster their own autonomy” (Miller 1997:47). The subversion or adherence to a drug regimen is something that comprises individual identity on a very regular basis: each time that a person takes a pill, it is a conscious act that affirms a particular course of medical action and agreement with a diagnosis, as well as a recognition of the individual as a medicated self. For asymptomatic diseases, the pill itself is the only thing that serves as the material reminder of the diagnosis; thus, by avoiding the medication, the individual can also avoid cognizing a diagnosis of illness or inadequacy.

Non-prescription substances, as noted above, include a number of over-the-counter medications and other supplements such as vitamins and minerals. The use of such comestibles is motivated by perceptions of health and well-being that occur prior to (and even in spite of) their ingestion. Kirk *et al.* (1999) have noted that women who take nutritional supplements are the ones mostly likely to be already living a healthy lifestyle, resulting in the paradox of what they call the “inverse supplement hypothesis”: that for the people who use them, the ingestion of nutritional supplements is generally superfluous. Decisions about when and how frequently to utilize supplements are undertaken in a complex psychological rubric in which flows of information are rationalized from a variety of information streams that become the basis for idiosyncratic knowledge about the value of the ingestion regime. John Hathcock (1997:427) has noted another sort of paradox seen in



nutritional supplements, in that safety is assumed but efficacy is individually judged. Extrapolating from his observations, the formation of publicly visible identities in supplement use requires no further thought on the part of the individual since the only externally visible component—safety—is assumed by the consumer on the basis of the product simply being available in the market.

As in the case of prescription medication, the decision to ingest non-prescription substances may rest purely on an internalized, personal and reflexive state of perceived “need” and “efficacy.” This judgement of efficacy can be influenced by other external stimuli such as advertisements, celebrity endorsements, and friends’ stated experiences with the same product, but ultimately these influences are only validated through the individual’s own actual experience. By contrast, the efficacy of prescription medicines, at least prior to the development of the Internet, was based almost solely in the hands of professionals: the prescribing physician, the pharmacist, and in the product inserts prepared by the manufacturer (perhaps one reason that medical websites have become so popular on the Internet is that it increases the diversity, if not the accuracy, of the information stream in a manner that non-prescription pharmaceuticals, vitamin supplements, and nutraceuticals have always had).

Although the examples above are drawn largely from Western contexts, studies elsewhere show that the ingestion of medicines as a component of reflexive identity has cross-cultural validity. In her study of packaged energy powders and drinks in Indonesia, Margot Lyon (2005) has examined the way in which personal enhancement involves how individuals feel about themselves. She notes that people in Indonesia have greatly increased their consumption of over-the-counter energy products in the past decade, and proposes that these products appeal to a population overcome with anxiety and distress about the country’s recent severe economic downturn. For Lyon (2005:14), “technologies of feeling and being” are stimulated by outside events, but the individual’s choice for mitigation is (literally) internalized through the consumption of energizing concoctions.

For some individuals, the consumption of pharmaceuticals and nutraceuticals involve factors of preparation as well as perceived health benefits. Vitamins can be certified vegetarian (no gelatin) or Kosher (no animal glands or shellfish products), to enable the consumer to conform with her or his declared identity (see Horowitz 2001). In the public sphere of the store or other venue of purchase where these roles might have salience, the only way for the individual to project a social role is through the conspicuous labeling that identifies the special conditions under which the item was produced. Like packaging, conversation is a proxy for the intent of consumption. Medications for colds, allergies and blood pressure can be discussed in public, but perhaps because they address conditions that are generally assumed to be the random result of genetics and environment rather than the result of moral weaknesses or lifestyle choices. By contrast, many pharmaceuticals and over-the-counter medications are not even “good to think.” Laxatives, anti-diarrheals, intimate ointments, birth control pills, anti-depressants, suppositories, medicinal shampoos, anti-fungals and most other medicinal aids are strictly relegated to the private realm and have very little potential for actual or proxy visibility.

How do people judge the effectiveness of pharmaceutical products, if they are not discussed? I propose that people measure their effectiveness through proxies of

projection and identity in addition to objective measures of physical effect. Thus, value is created through a variety of subjective measures that are linked to selectively filtered inputs (e.g., “do I trust the source of the information that this will make me feel better, and is that source more or less powerful than how I actually perceive myself to feel based on other internal and subjective criteria?”). Pharmaceuticals and other ingested substances are perhaps the ultimate arena for assessing how value is created through psychological assessments that can outweigh both physical evidence and public, external perceptions. A further indicator of the extent to which internal identities channel private behavior is seen in the efforts to address problems of patient non-compliance. Recent studies illustrate that compliance is not merely a matter of education; for example, research among wealthy, educated women showed that they did not take in recommended doses of daily calcium, although their age, income and educational level placed them in what would ordinarily be perceived as a group with high incentives for health maintenance and improvement (Kim 2005). Acknowledging that “knowledge alone does not change behavior,” researchers are now investigating the way in which patient non-compliance is not a matter of forgetfulness but comprises what the patient views as a rational choice (Miller 1997:44; see also Mann *et al.* 2004).

### Underwear

The existence of a high degree of variability in contemporary underwear indicates that the choices exercised by consumers are made on the basis of factors other than display to others, since underwear is almost always expressly designed to be worn under other clothes. Although twenty-first century fashion trends have enabled underwear to be visible components of public dress, most underwear is still regarded as meant to be concealed. In contemporary American culture, the accidental display of even clean, unworn underwear (in a purse or drawer or accidentally adhering to the outside of clothing or laundry baskets) is considered embarrassing and awkward (Pattee 2004:12). In more conservative cultures, underwear is similarly kept from view; in Sri Lanka, for example, underwear is washed and dried out of public view even though other laundry is hung out to dry in the open and even though many village women work in garment factories producing underwear for export (Lynch 2002).

For individuals, undergarments are the clothing that identifies the person before they put on the clothes that constitute their “social skin” (cf. Turner 1980). In conservative as well as more liberal societies, the only times in which the underwear may be legitimately exposed to view is under circumstances in which the viewing parties would already know the wearer in some other capacity: as love object, as kin, as the object of professional responsibility (e.g., doctor, ambulance driver, morgue attendant), or as a part of already-designated social groups (gym member). In every case, the relationship between the wearer and the viewer is conditioned by factors that precede—and presumably outweigh—the viewing of underwear. Rarely do individuals meet under circumstances in which underwear is the first, defining, or only symbolic identifier. Nonetheless, underwear commands a large proportion of the clothing market: in 2000, over 8 billion dollars’ worth of lingerie was sold (Dolbow 2001), a figure that can be compared to 4 billion dollars’ of hosiery (Anonymous 2001).

The range of variability in undergarments is considerably greater than the variability of socks and other accessories, suggesting that factors of choice include many components of decision-making beyond the functional aspects of items that are designed to be worn under visible clothing. Indeed, the history of undergarments shows that there is considerable variability in the desired technological qualities of underwear (what Schiffer and Miller 1999; Schiffer and Skibo 1997 would call the physical aspect of “performance characteristics” as a general aspect of material culture). While modern consumers would identify such performance characteristics to include comfort, protection (from chafing or bodily emissions), and warmth, the manner in which these “objective” standards have been materialized are culturally determined in ways that can be quite surprising.

For example, Jill Fields (2002) has shown that in the mid-nineteenth century, modest and appropriate women’s underwear consisted of a pair of leggings that could be tied together at the waist but remained crotchless. Although those undergarments were clearly meant to be unseen—as demonstrated by editorial condemnation of occasional trends that let the bottom portion of the leggings peep out from under ankle-length skirts—their unjointed construction was meant to be distinct from men’s trousers. The social condemnation of “mannish” behavior in women resulted in restrictions not only in their participation in politics and business, but also on their attire, and the sentiment was internalized even in the most private domain of consumption in an article of clothing seen by no one. Fields proposes that the subsequent transition to closed-crotch, sewn underwear that is the type most familiar today directly paralleled the historical development of women’s greater social freedoms in the early 20th century, when it became socially acceptable for women to wear trouser-like clothing both as outerwear and as a component of undergarments.

Although the range of choices in undergarments at any given moment is the result of manufacturers’ production decisions, the history of undergarments illustrates that there is a strong interaction between consumption and production in which production activities shift to meet changes in demand. The act of choosing and wearing one’s daily undergarment is thus an act of deliberate performance in choosing from a series of available props whose qualities are externally generated but are internally affirmed. Moreover, the individual need to engage in identity performance through the acquisition of material culture is a fundamental preoccupation, rather than a luxury concept underwritten by the presence of budgetary “surplus.” It is telling that in the USA, the Great Depression of the 1930s “hardly affected underwear sales” (Auchincloss 2002:111). In that decade, undergarment sales were unlikely to have been driven by novelty, because the most significant design changes had already taken place a generation earlier. Instead, undergarments were part of an ongoing and regular performance of acquisition and use that did not fluctuate even when large-scale economic patterns were massively disrupted.

The creation of a reflexive identity is not completely devoid of visible components, however, and underwear is of interest in this respect because of the many ways that it can be displayed by proxy. These proxies tend to be reserved only for undergarments of certain brands; although the physical performance characteristics of generic underwear and Victoria’s Secret products may be the same, their visual and social performance characteristics are quite different and only the more

expensive undergarments are socially sanctioned for proxy display. The most immediate proxy consists of elaborate and distinctive bags; anyone carrying the store's opaque bag in a public place is making a statement about their past purchase (and presumed future wearings) of the undergarments sold there. A second proxy, equally suited for public view, is the catalogs that proclaim the possessor to be of a privileged set. A third type of proxy is advertising found in magazines catering to a particular socio-economic class, which proclaim the reader to be the type of person who should be wearing those undergarments. Finally, storefronts themselves, such as the lavishly decorated storefronts of Victoria's Secret, project an image into the public space of malls in a way that calls attention to those who enter the premises or who just stop to linger and window-shop (see Gottdiener 1995).

Aside from being fashion statements by proxy in the public arena, undergarments can also carry a ritual and religious significance. Sikh men and women wear a close-fitting undergarment (*kachhehra*) that is distinct from the loose wraparound garment (*dhoti*) worn by non-Sikh South Asians (Cole and Sambhi 1978). The function of the Sikh undergarment is described as "boosting the moral character of the wearer" (Dhillon 1980:65), allowing the wearer to demonstrate "reserve in commitment to the procreative world as against renouncing it altogether" (Uberoi 1969:132). For followers of the Church of Jesus Christ of Latter-Day Saints, "Mormon underwear" is a garment with a series of symbols. The undergarments were originally distributed by the religion's founder Joseph Smith as a kind of spiritual barrier that provided literal protection against illness and injury, a fact that leads Simmerman (1993) to speculate on the similarities to the belief in protective garments in the "Ghost Dance" phenomenon of Smith's Native American contemporaries. While Mormon undergarments have apparently undergone changes in form and style, they remain a highly secretive practice. The presence of such garments under publicly visible clothing is surmised—yet still unseen—by other members of the faith; as with other types of underclothing, only the wearer knows for certain whether the garment in question is being worn at any given moment.

## Hygiene Products

Most personal hygiene products are expressly designed to be used in private: ointments, deodorants, feminine products, dental floss. Yet, as in the case of pharmaceuticals and underwear, there is a significant market in branded products to which users have a high degree of loyalty (Bainbridge 2006). Choices among intimate-use items, which tend to be disposable, appear to be made in the same manner as choices in the realm of ingested goods (such as pharmaceuticals) and of reusable goods (such as underwear).

Among intimate consumer goods, feminine hygiene products constitute the category that has received the most analytic scrutiny. Feminist scholars in particular have seized upon the topic of women's hygiene to show how basic bodily functions are addressed within larger social contexts. In historical terms, these social contexts include the subjugation of women through control of reproduction potential; because monthly cycles cease during pregnancy, menstruation could be viewed as an "aberration" from a woman's natural and desired state (Park 1996; Rosengarten 2000). Since some amount of cycling can be expected from even highly reproductive

women, however, there always exists an opportunity for the development of suitable goods. In the 1800s, disposable products related to menstruation were advertised as “hygienic” and “sanitary” in keeping with newly emergent societal values of cleanliness in which women were the designated keepers of family health, and by the 1920s brands such as Kotex utilized familiar symbols such as the cross, associated with nursing and hospital standards of hygiene (Park 1996). Since the 1960s, the women’s rights movements and other social changes have been mirrored in feminine products now advertised as having qualities of “freedom” and “security” and featuring logos such as wings and flying birds (Park 1996; Rosengarten 2000).

As in the case of underwear, product designs and production decisions are mitigated by consumer acceptance. Industry observers noted that black pantyliners (designed for black undergarments) did not prove popular (Bainbridge 2006), perhaps because they contradicted women’s expectations that the unused product is meant to be stark white and “fresh” in appearance. Manufacturers also respond to deeply held notions of privacy, since the intensity of discretion sought by the consumers of feminine hygiene products extends not only to their actual use, but to their presence or display in any context. Secrecy, concealment, and deflection of fellow-consumers’ gaze are also generally sought when purchasing feminine products (cf. Pattee 2004:12, Roberts and Waters 2004) as well as public areas in which those products are transported en route to an area of use such as a bathroom (Park 1996:160). Feminine products are usually sold in layers of packaging such that an unused product is covered by an unmarked or discreetly marked wrapper. Even advertisements avoid showing the actual product, using instead visual proxies such as product packaging, women in active poses, flowers, and sparkling white garments. But these proxies are meant only as fleeting visual displays; no one should expect, for example, that the Tampax® brand and symbol will ever be emblazoned on gilt-edged and beribboned shopping bags.

Other categories of personal objects, such as razors, toothbrushes, and cosmetics have a kind of liminal display status. Cosmetics have a very high proxy visibility in the form of advertisements in magazines and other media, in which the consumer is meant to internalize the attainment of beauty through the application of various products, most of which are designed to be utilized in private though for public effect. The parameters of other goods are culturally conditioned. Even among similar cultures there is variability about the appropriate level of visibility for personal grooming items: while in the USA these items of personal care are generally relegated to the bathroom and bedroom, Gullestad (1993:138–139) notes that in Norway, many people keep a kitchen drawer for combs, brushes and cosmetics. In the USA, brushing one’s hair in public is viewed as moderately acceptable behavior, while in India public hair care is viewed as sexually provocative. The variability of cultural patterns of grooming behavior indicates that individuals act with reference to understandings of social parameters, but that the social parameters themselves are amenable to change. Individual actions thus become both the determinant and reflection of cultural patterning, in which conscious decision-making is materialized at the autonomous cognitive level.

One personal-care item that has received a surprising amount of scrutiny is dental floss, a waxed or unwaxed string that is drawn between the teeth to remove plaque and other deposits. Flossing is widely acknowledged as an important component of

oral health maintenance by both the dental profession and by individuals, but as in the case of pharmaceuticals, knowledge of optimal health behavior is insufficient to predict or condition actual use (Lavin and Groarke 2005; Mann *et al.* 2004). People generally do not use dental floss on a regular basis, a phenomenon noted not only in the USA but elsewhere including Norway (Rise *et al.* 1998) and Japan (Harada *et al.* 2005; indeed, the fervent and earnest tone of most literature on dental floss suggests that it is not merely a hygiene product but stands as a measure of national morality). Because dental floss (like most personal care items) is inexpensive and widely available, other factors of individual choice appear to underlie decisions about its employment. Qualitative studies have shown that interrelated psychological factors bridge an individual's stated public intent to use dental floss with the private actions that constitute actual use of floss. For example, Rise *et al.* (1998:230) deftly illustrate that this seemingly simple decision is the result of a complex series of mental calculations such that "use of dental floss correlated significantly with intention, past behavior, and perceived behavioural control in that order." Perceived behavioral control, which they define as technical competence, is itself a function of memory that has an effect on intent.

Unlike teeth-brushing, which leaves a socially perceptible change in appearance and other sensory components, flossing is perceived as a subtle and long-term investment that renders little immediate effect. This factor has led to researchers' use of flossing as a common trope in the analysis of other investment behaviors, such as weight loss and saving for retirement, that involve incremental actions directed to long-term payoff (e.g., Dubas and Jonsson 2005). One can extrapolate from the rather esoteric world of dental floss to a more general premise: every act, even a routinized one, is a deliberate decision that results in interactions between a person and an object for the production of physical changes and emotional stasis. These acts are carried out in reference to—but not as a complete mirror of—external inputs and influences.

### Archaeological Evidence for Reflexive Identity

Is it appropriate to utilize modern observations of personal consumption behavior to elucidate the relationship between people, cognition, and material culture in the past? Many scholars have proposed that the striking components of today's material culture use, including disposability and hyper-consumption, are uniquely modern phenomena and that the "expression of self through one's relationship to and creative use of commodities (both artifacts and the discourses of popular culture) is a central practice in capitalist society" (Bettie 2000:14; see also Gottdiener 1995; Witt 2001). However, when viewed in an evolutionary perspective, the use of goods is a component of human behavior with at least a million-year time span. The active manipulation of both landscape features and portable objects as integral parts of cognitive systems appears very early: our ancestor *Homo erectus* may have lacked the capacity for language, but was able to make stone tools of remarkable consistency and symmetry by 1.65 million years ago (Klein 2005; Wynn 2002). These Acheulean hand-axes are widespread in Africa and Eurasia, suggesting that they were important cultural markers as well as being useful for butchering animals,

digging up roots, and accomplishing other tasks. Although the study of the oldest material culture is principally limited to stone tools because of their durability in the archaeological record, there is evidence for wood-working as early as 1.5 million years ago (summarized in Nadel *et al.* 2006) and circumstantial evidence for the use of shells in the same era (Choi and Driwantoro 2007).

By the Upper Paleolithic period starting 40–50,000 years ago, communication and the artifact repertoire became increasingly diverse, robust, and variable. Ornaments, for example, are first documented in the Upper Paleolithic era and consist of pendants, beads, and other worked artifacts that have no “practical” application (Kuhn *et al.* 2001; Simpson 1996). In the Neolithic period, starting 10–12,000 years ago, the adoption of farming and sedentism prompted a great expansion of the artifact repertoire related to food production and processing in new forms and materials such as metals. The subsequent archaeological record of social complexity is accompanied by an ever-increasing quantity of manufactured items, and the ancient towns and cities that are the hallmarks of emergent “civilization” are full of discarded consumer goods. The quantity of artifacts in these sites signals that the mass production and waste that we may otherwise associate with the modern world are a long-standing component of human behavior in dense populations.

Novel approaches to language and culture provide data to show the evolutionary link between artifact use and the evolution of human cognition. In studies utilizing positron emission tomography (PET) scans and other forms of neuroimaging, researchers have been able to show that different parts of the brain are activated when healthy individuals talk or think about different types of physical entities (Martin 1998:82; see also Martin 2007). Information about natural phenomena, such as animals, are stored in a different portion of the brain than human-made objects; moreover, artifact knowledge is stored in the same physical part of the brain in which information about hand-motions is stored. The close neurological proximity between artifact perception and actions related to objects supports the hypothesis that the cognitive and manipulative facilities related to artifact use co-developed. Each individual thus possesses and acts upon information about objects in a way that links those actions to communication ability and autonomous cognitive processes of decision-making.

Notions of privacy and self are also long-standing components of the human cognitive process. Although Daniel Miller (2001) identifies the modern world as one in which the private sphere has become of tantamount importance, a careful look at the past reveals that it is the development of social complexity, rather than modernity *per se*, that has fostered the development of multiple layers of privacy and interaction. Ancient private spheres were surrounded by successively larger enclosures ranging from the home to the neighborhood to the largest, most anonymous public space. Cities were often divided into smaller units, such as the Bronze-Age Indus sites that show intra-urban dividing walls (Kenoyer 1998:55) and ancient Mesopotamian cities for which neighborhoods functioned as a kind of village-like subdivision (Stone 1995:240). Smaller configurations of space, such as compounds and individual buildings, also had variable levels of privacy in which access to some areas was highly restricted and made through a series of nested spaces such as hallways and courtyards (as Jerry Moore (1996) has demonstrated for the walled compounds at the Andean site of Chan Chan and as Mark Grahame (1997) has documented for Roman villas at Pompeii).

Archaeological evidence indicates that the development of codified architectural forms of privacy in the past several thousand years were themselves only the most recent florescence of the materialization of private identity. The three categories of goods discussed above—pharmaceuticals, underwear, and hygiene products—have their analogues in deep prehistory, each of which can be traced in the archaeological record. Of these, individual responses to health probably constitute the most abundant category of archaeological evidence to evaluate reflexive identity in the past. Death, illness, and injury were all phenomena that were personally and repeatedly experienced by ancient people. Individuals would have attempted to mitigate ailments through behaviors that they perceived were restorative or health-enhancing, even when those practices were objectively deleterious (for example, blood-letting, trepanation, or the consumption of hallucinogens). Like today's doctors, skilled practitioners of ancient medicine surely recommended the quantity and timing of the ingestion of herbs and plants as well as recommending foods and activities to avoid. But like modern people, our ancient ancestors may well have affirmed their autonomy or negated a diagnosis of illness through the idiosyncratic modification of prescription regimes.

Previous archaeological analyses of ancient health and illness have largely been focused on the population level, enabling us to address demography and the effect of long-term transitions, such as agriculture, on human well-being (e.g. Bocquet-Appel 2002; Buikstra *et al.* 1986; Eshed *et al.* 2004; Frankenberg and Konigsberg 2006). When viewed from the perspective of the individual, however, we can examine the interactions between the range of parameters socially recognized for the treatment of illness and the individual actions actually taken. Medical practices were some of the first matters to be written down when societies became literate, and these texts reveal that conflicting advice was just as prevalent in the past as it is today. In Mesopotamia, China, and Egypt, the earliest medical documents show that there were both practical and magico-religious solutions to illness, meaning that patients first had to determine the relative efficacy of different systems of medicine and then proceed through a prescribed course of treatment (Arnott 2002:44). Detailed culinary and landscape knowledge resulted in an impressive array of curative “recipes”; for example, early Chinese documents such as the *Prescriptions for Fifty-Two Ailments*, composed before the end of the third century BC, contained instructions for more than 200 medicinal substances (Wu 2005: 4), while Babylonian texts of the second millennium BC listed over 250 medicinal plants and 120 minerals “used in combination with alcoholic beverages, bouillon, fats, honey, milk in various forms, oils, wax, and parts and products of animals” (Spiegel and Springer 2007:36). Contraception and abortifacients were a particularly abiding concern that prompted the use of a variety of natural substances and elaborate concoctions (e.g. Ciaraldi 2002; Netland and Martinez 2000).

Medical practices recorded in ancient texts did not simply devolve from the pens of a small number of learned practitioners. Instead, as Miller (1991:15) suggests for New Kingdom Egypt, the written record may instead represent the compilation of home remedies and folk knowledge practiced at the household level. This provides an excellent example of cultural practices defined “from the bottom up” in which individual decisions about material culture formed the basis for the social parameters eventually transmitted as scholarly knowledge. Archaeological evidence from non-



literate periods also shows that that individuals ingested a variety of substances in the pursuit of health and for the mitigation of illness. Mummies and other preserved bodies often have evidence for worms and other organisms, indicating that internal and external parasites were likely to have been quite common in antiquity (Magner 1992). People appear to have utilized plants with known medicinal qualities to combat these parasites, as seen in the discovery of two pieces of the bracket fungus *Piptoporus betulinus* among the personal effects of the 5,300-year old European Ice Man (Capasso 1998), and high rates of chenopod consumption among pre-agricultural populations of the American Great Basin (Kliks 1975). Parasite loads and other indicators of ill health would have increased dramatically at the beginning of sedentism starting around 10,000 years ago, when people lived in the same locations for long periods of time, subsisted largely on grains that had a minimal vitamin diversity, and stored foods in conditions that promoted the development of molds and toxins (Magner 1992:2). Whether sedentary or mobile, individuals would have been acutely aware of internal discomfort and their knowledge of the environment would have been directed towards alleviating distress just as much as satisfying hunger.

The materialization of the self can also be seen through the archaeological evidence of garments and other items meant to be utilized by one person at a time. Perceptible even in the most modest goods are choices exercised by the consumer in matters of color, shape, design, form, material, and type of decoration. Much of ancient people's portable object repertoire was made from perishable materials such as wood, cloth, feathers, bamboo, sinew, leather, and fur. This level of perishability meant that in the individual's lifetime most personal objects would have been continually replaced, allowing for shifts in decorative style and preference to be exercised on a regular basis. Personal items such as ornaments, cosmetics, clothing, and footwear were especially variable as new fashions came in, and as individuals decided how and when to displace old possessions for new ones. As is the case today, there were aspects of adornment that were entirely self-actualized and ephemeral in their creation, such as hairstyles and the draping of clothing. Representations of these idiosyncratic displays of style are preserved in sculptures, figurines, and rock engravings that enable us to envision some of the diversity of individual choice in material use.

The development of clothing in particular provides an opportunity to examine how private identities were expanded through the diversity of material culture use starting in the Upper Paleolithic. Because actual clothing is rarely preserved and task-specific items such as needles are rare, other types of data are required. One creative approach to this question has been provided through the study of parasites. The human body louse (*P. humanus corporis*) subsists on human beings but lives in clothing, an adaptation that suggested to Kittler *et al.* (2003) a means by which the development of clothing could be dated. They sequenced the mitochondrial DNA of the louse, and found that this species first appeared at  $72,000 \pm 42,000$  years ago, a time that corresponds to the expansion of *Homo sapiens* out of Africa and into a variety of global regions. Moreover, the sequencing revealed that the body louse originated in Africa, meaning that clothing was developed as a part of *H. sapiens*' pre-migratory toolkit and was not merely a response to colder climates elsewhere in Eurasia. The development of clothing enabled individuals to engage in regular

decisions about the form to be created, and daily decisions about whether and how to wear the resulting garment. The development of clothing also provided easily manipulated parameters of privacy: what is under clothing remain hidden, so that items such as amulets and charms would be known only to the individual who selectively displayed them to others.

In some cases, exceptional conditions of preservation have enabled us to find more direct evidence for reflexive identity manifested in material culture practices. Deserts in Egypt and the frozen tundra of Siberia have preserved individuals with elaborate tattoos, some of which would have likely been hidden from public view. These include permanent marks in areas such as the spine and lower back where they may represent sympathetic magic to counter back and kidney pain (Mayor 1999). Waterlogged conditions in the peat bogs of England and Ireland have preserved bodies with elaborate hairstyles for both men and women. Interestingly, some of the women's heads were shaven on one side (van der Sanden 1996:164), indicating how privately held ideals of dress and presentation were socially negated at the time of death. Another exceptionally well-preserved example of a human artifact repertoire is found with the Ice Man recovered in the Swiss-Austrian Alps (Spindler 1994). In addition to a quiver, belt-pouch, and other containers serving as a kit of equipment, this individual had a small marble bead on a tassel that probably would have been worn in the front and under clothing.

The archaeological recovery of personal items with markings indicate the presence of reflexive identity as well. Mark Kenoyer (1998:75) notes that at the Bronze-Age site of Harappa, "tiny bone points that may have been used as hairpins or toothpicks have a miniature inscription at one end. The sign is too small to be visible at a distance and clearly was not a public communication; possibly these were personal identification marks or protective symbols." Rosemary Joyce (2003:113) notes a similar phenomenon among ornaments of the Maya period (first millennium A.D.), including a bead pendant and an earspool each inscribed with text that would have been worn facing inwards and thus not visible to the external viewer. Aspects of style within visible object categories were also varied, indicating the presence of choices available to the individual within categories of similar goods. At the ancient city of Sisupalgarh in India dating to the early centuries A.D., many ornaments are made of terracotta which is arguably one of the cheapest forms of material culture. Terracotta rings, bracelets, ear studs and pendants were made in molds, indicative of rapid and standardized production. The recovery of these objects in secure excavated contexts show that there was a tremendous diversity of shapes and forms in use at the same time, including floral and geometric motifs as well as human heads and animal figures (Mohanty and Smith 2006; Smith and Mohanty 2007). The fact that all were produced using the same simple technology indicates that there was considerable choice offered to the consumers of these goods, in which any individual's selection for use was probably based on highly idiosyncratic criteria.

Finally, personal hygiene items, cosmetics, and other physiological enhancers appear to have been components of the material repertoire starting at a very early date. At a basic biological level, the existence of clothing-related lice and the presumed level of discomfort due to external parasites would have promoted grooming behavior. Bodily functions related to menstruation, childbirth, and dental distress also would have prompted the knowledge and use of some personal

grooming interventions, the exact frequency and timing of which would have been determined by individuals themselves. Like their modern counterparts, ancient people utilized a wide range of personal enhancers as an ongoing component of self-preparation. Grooming tools found in archaeological context include tweezers, razors, and mirrors (e.g. for the Mediterranean see Jansen *et al.* 2005, for central Europe see Treherne 1995; for Mesoamerica see Hosler 1999). The use of cosmetics and cleansing agents are documented in the historical records of Rome, China, and the Indian subcontinent, indicating an awareness of personal actions through the application of prepared substances. These records give us an insight into the general social milieu and expectations that served as the parameters for individual actions. One early medical document from Egypt, the Edwin Smith papyrus, contains (in addition to the treatment of outright illnesses and injuries) a recipe for removing wrinkles. The elaborate directions for preparing the potion end with the phrase, “Found effective myriads of times,” suggesting that frequent applications were anticipated by both the physician and the patient even in the third millennium B.C. (Breasted 1930:498).

## Discussion and Conclusions

Human evolution was both accompanied and conditioned by the use of physical objects. No other species has the repertoire of manipulated goods that we see in the archaeological record starting at least 1.5 mya, and archaeologists have long depended on objects to understand human communication and interaction in the past. But if we are to fully understand the relationship of people to objects, we need to consider the factors of human evolution that have resulted in objects being a fundamental component of our species’ biological and social composition at the individual cognitive level. Material culture was essential not only for an increasingly complex extractive relationship to the natural world, but also for the development of identity. The formation of identity and a discernable core self was the basis for an individual’s subsequent selective display and performance of multiple roles in public or group interactions. The idea of individual action as a component of social group behavior probably emerged as early as *Homo erectus*, which would explain why the Acheulian handaxe is such a widespread tool type even a million and a half years ago. Stylistic transmission resulting in the conscious replication of a recognized type was not just about the function of a particular human-made object, but an expression of the individual consciously devoting energy expenditure to the creation of an item within socially recognized parameters. Individuals’ sense of the self as an independent yet integrated social agent probably fully emerged only in the Upper Paleolithic starting 40–50,000 years ago, in concert with the development of an elaborate, differentiated corpus of material goods.

The further investigation of this cognitive link involves three significant questions. First, how is relative value assessed by consumers when goods are privately consumed? Value in the public realm is assessed by the person on the basis of a variety of inputs that include perceptions of their physical or social “performance characteristics” (Schiffer and Miller 1999; Schiffer and Skibo 1997). The public display context can be modified through actions such as emulation or advertising,

although these modes of public signalling do not always result in the target group's acceptance of the product (e.g., Hebdige cited in Miller 1987:169, Schiffer 1991). The value of privately used goods might be based partially in factors that are objectively measurable and do not rely on public performance, such as drug efficacy or some other physical properties such as absorbency or transpiration. But "value" in any context, whether displayed or reflexive, also has an ideological component in which judgements are made on non-objective grounds or even in contrast to objective grounds. Kacelnik and Marsh (2002) note that behavior cannot be predicted solely on an economic basis under a "minimax" models (minimum output for maximum returns); instead, perceived cost can actually increase the desirability of particular goods or conditions. In many cases, value is first assessed by individuals reflexively whether or not they eventually intend to share this information with others.

Second, how do people learn "private" behaviors, and how can patterning be elucidated when actions are invisible? Reference to Fig. 1 indicates that private actions are internalizations of external perceptions to a considerable extent. Objects are acquired in the public realm for selective use in the private realm, but the general form and potential of use is public knowledge even if the resultant behavior is privately selected for timing and frequency. On the cognitive level this is true as well since group participation and memory serve to enable the individual to recreate the performance in private: "Direct access to other people's experience is unnecessary; provided that their experience is assumed to be relevant, observation of their current practices is sufficient" (Loasby 2001:19). As shown in the case of underwear, these external perceptions have an effect ranging from availability of particular goods to the timing and mode of use. People learn about the potential for particular modes of human-object interaction in the public sphere when those objects are observed either directly or by proxy. People buy pharmaceuticals from public places, can carry bags from Victoria's Secret, and can be seen coming in and out of a tattoo shop. However, the public display of these proxies is usually a one-time event, with subsequent display afterwards restricted to the individual and to the individual's most intimate associates.

Finally, what is the difference in cognitive impact between long-held goods and those meant to be disposed, discarded, or changed? The examples of pharmaceuticals, underwear, and personal hygiene items given above all constitute relatively cheap and mundane types of consumer goods. This contrasts with the forms of permanent alterations such as tattoos, piercings, tooth modification and cranial deformation that are often the focus of discussions about individual identity and the human body (e.g., Joyce 2005; Turner 1980). Disposable, ephemeral goods are also distinct from heirlooms and other material goods that are curated for long periods of time and that invoke nostalgia and memory through display and touching (Schiffer 1987:35; Van Dyke and Alcock 2003). Although mundane consumer items ultimately wear out and are discarded, the embedded qualities of easy procurement and constant potential for change may result in them being more firmly tied to identity than one-time markers of action (such as tattoos) or memory-enhanced singular events (such as a wedding ceremony). In addition, items that are relatively cheap have low "switching costs" (meaning that consumers can use up a product and try a new one without incurring a significant financial or emotional investment; cf. Prahalad 2005:20). Goods with a short use-life, such as pharmaceuticals, underwear,

and personal-care items therefore present repeated opportunities for choices about whether, how, and when to engage in object-mediated performances.

The idea of a reflexive identity as an evolutionary component of social behavior enables archaeologists to contribute unique perspectives to scholarly debates about the emergence of human psychology. Many scholars have suggested that the notion of a premodern individual is incorrect because it is based in Western concepts of essentialism (Fowler 2004; Garvey 2001:64–65; Moore 1993) and ideals of “rugged individualism” that are misplaced when applied to the past (Csikszentmihalyi and Rochberg-Halton 1981:189–190; for discussion of how the self has been critiqued as a cross-cultural phenomenon, see Hollan 1992). There appear to be two components of this argument. First is the recognition that all public performances have multiple meanings and interpretations, a perspective that incorporated into even the smallest realms of performance. Daniel Miller (2001:10) has noted that even in intimate spaces such as the physical household there is “contradiction and dissonance in the relationship between people and their homes.” But if interlocutors are removed and the performance is strictly private, is performance still inherently dissonant? In contrast to public performances in which there are always multiple possible interpretations, private actions may be the only case of intended, unmediated, unmitigated and unambiguous display.

Another reason for reaffirming the validity of the essentialist argument stems from changes in psychological nomenclature that have served to conflate the social and reflexive aspects of performance. Earlier discussions of the individual referred to the “self” as a relatively coherent component of the individual psyche, but by the late 1960s this term was largely replaced by the term “identity,” a term that inherently contains notions of “the place that an individual holds in the structure of the society” (Deaux 2000:222). Identity projected into a social role is variable depending on the group in which the individual is present at any given moment, since different modes of speech, display, style and interaction are undertaken to enable the individual to interact most successfully within that particular group. But these identities, even if internalized, do not have a complete one-to-one correspondence with all of the components of an individual’s sense of self. Instead, we may consider that a person’s core self is faceted—but still whole and coherent—rather than fragmented as it must invariably be when in the public view. Indeed, the notion of self may fundamentally rest on a singular formation, “the temporally persisting sense of being the same person, whereby the individual orients himself or herself to the external world” (Wolman 1989:171).

The presence and development of autonomous cognitive processes, materialized in the use of material culture, enable us to develop an archaeology of the individual that has explanatory potential. The existence of the individual is frequently acknowledged in archaeological discourse, but almost immediately subsumed into broader explanatory models (e.g., DeMarrais *et al.* 1996:16; VanPool and VanPool 2003:91–93). Detailed examinations of the individual have been relegated to a narrow range of descriptive parameters, such as identifying the idiosyncratic component of craft-making (e.g. Hill and Gunn 1977), or tempering the impersonal explanation of systems with the identification of specific people, particularly those in well-preserved contexts (Hodder 2000). Although Hodder (2000) and others have called for a more sophisticated treatment of the individual in archaeological contexts,

to date individuals have most successfully been the purview of archaeological illustrators who create identifiable persons out of the anonymous remains of the past.

The resources for a more robust archaeology of the individual can be found within the practices already employed by archaeologists. Ethnoarchaeological studies, which bring the archaeologist into one-on-one contact with real, named people in the course of evaluating production strategies, can be utilized for the identification of the specific decision-making processes associated with human-artifact interactions. Human paleodemographic data can be juxtaposed with specific burials to understand how individual actions with regards to health and well-being contributed to—or reacted against—population-level parameters. Environmental studies of human-landscape interactions can reveal the range of known plants and minerals, the use of which can be tested with trace-element studies of containers, household surfaces, and human remains. An examination of the relationship of goods, material culture, and identity as essential and interdependent components of social behavior can thus enable us to show how social parameters were created through the actions of many individuals. A parallel for this mode of inquiry can be found in the study of language, a process in which individuals “construct and constrain—rather than passively receive—interpretations” (Ahearn 2001:112). Such a perspective would provide concrete data to expand the notion of agency beyond being either a collective (Spencer 1997:230) or resistive (Cowgill 2000) reaction, and towards a view of agency as a creative process generated at the individual cognitive level and manifested in the material culture that we see incrementally forming the archaeological record (Dobres and Robb 2000).

Recognizing the individual, autonomous identity that is manifested in material culture is an important precursor to developing an archaeological theory of the shared common denominators that made social configurations possible. Individual actions are the basis of communication, interaction, labor investments and collaboration within hierarchical and heterarchical social structures at all levels of social complexity. Even under conditions of greatly restricted parameters of behavior, individuals constantly make decisions about daily-use actions about food, objects, and energy expenditure within the context of tasks directed towards short-term, medium-term, and long-term goals. The development of a reflexive identity and the self through the manipulation of material goods constitutes a performance whose effects are selectively displayed in publicly seen social roles. Examinations of modern cases of intensely private behavior enable us to consider the ways in which material culture patterns can reveal the presence of a hidden, private identity whose initial developments can be traced far back into the archaeological record.

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## References

- Ahearn, L. M. (2001). Language and agency. *Annual Review of Anthropology*, 30, 109–137.
- Allison, P. (Ed.) (1999). *The Archaeology of Household Activities*. Routledge, London.
- Anonymous (2001) U.S. Women's Hosiery Market Size as Sales in Dollars for 2000 and Forecast for 2001. *Body Fashions Intimate Apparel* 31(12):10(6).
- Appadurai, A. (Ed.) (1986). *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press.
- Arnott, R. (2002). Disease and medicine in Hittite Asia Minor. In R. Arnott (Ed.) *The Archaeology of Medicine. British Archaeological Reports 1046* (pp. 41–52). Oxford: Archaeopress.
- Auchincloss, E. (2002). Bound and determined (Review of Steele, *The Corset: A Cultural History* and Ferrell-Beck and Gau, *Uplift: The Bra in America*). *Wilson Quarterly*, 26(2), 109–112.
- Bainbridge, J. (2006). Sanitary protection—Captive market. *Marketing* 1 March 2006: 32.
- Baxter, J. E. (2005). *The archaeology of childhood: children, gender, and material culture*. Walnut Creek, CA: Alta Mira.
- Beausang, E. (2005). *Childbirth and mothering in archaeology*. Göteborg, Sweden: Department of Archaeology, University of Gothenburg.
- Beck, M. E., & Hill, M. E. JR. (2004). Rubbish, relatives, and residence: The family use of middens. *Journal of Archaeological Method and Theory*, 11(3), 297–333.
- Bell, A. (2002). Emulation and empowerment: Material, social, and economic dynamics in eighteenth- and nineteenth-century Virginia. *International Journal of Historical Archaeology*, 6(4), 253–298.
- Benson, J., & Britten, N. (2002). Patients' decisions about whether or not to take antihypertensive drugs: Qualitative study. *British Medical Journal*, 325, 873–77.
- Bettie, J. (2000). Women without class: Chicas, cholas, trash, and the presence/absence of class identity. *Signs*, 26(1), 1–35.
- Bianchi, M. (1997). Collecting as a paradigm of consumption. *Journal of Cultural Economics*, 21, 275–289.
- Bocquet-Appel, J.-P. (2002). Paleoanthropological traces of a neolithic demographic transition. *Current Anthropology*, 43(4), 637–650.
- Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste*. Richard Nice (trans.). Cambridge: Harvard University Press.
- Breasted, J. H. (1930). *The Edwin Smith surgical papyrus, volume I*. Chicago: University of Chicago Press.
- Buikstra, J. E., Konigsberg, L. W., Bullington, J. (1986). Fertility and the development of agriculture in the prehistoric midwest. *American Antiquity*, 51(3), 528–546.
- Burgin, V. (2000). Jenni's room: Exhibitionism and solitude. *Critical Inquiry*, 27(1), 77–89.
- Capasso, L. (1998). 5300 years ago, the Ice Man used natural laxatives and antibiotics. *The Lancet*, 352, 1864.
- Childs, N. M., & Poryzees, G. H. (1998). Foods that help prevent disease: Consumer attitudes and public policy implications. *British Food Journal*, 100(9), 419–426.
- Choi, K., & Driwantoro, D. (2007). Shell tool use by early members of *Homo erectus* in Sangiran, Central Java, Indonesia: Cut mark evidence. *Journal of Archaeological Science*, 34, 48–58.
- Ciaraldi, M. (2002). The interpretation of medicinal plants in the archaeological context: Some case-studies from Pompeii. In R. Arnott (ed.) *The Archaeology of Medicine. British Archaeological Reports 1046* (pp. 81–85). Oxford: Archaeopress.
- Cole, W. O., & Sambhi, P. S. (1978). *The Sikhs: Their religious beliefs and practices*. London: Routledge and Kegan Paul.
- Conkey, M. W., Soffer O., Stratmann, D., & Jabonski, N. G. (Eds.) (1997). *Beyond art: Pleistocene image and Symbol*. Memoirs of the California academy of sciences No. 23, San Francisco.
- Cowgill, G. (2000). "Rationality" and contexts in agency theory. In M.-A. Dobres, & J. E. Robb (Eds.), *Agency in Archaeology* (pp. 51–60). London: Routledge.
- Csikszentmihalyi, M., & Rochberg-Halton, E. (1981). *The Meaning of Things: Domestic Symbols and the Self*. Cambridge: Cambridge University Press.
- D'Altroy, T. N., & Earle, T. K. (1985). Staple finance, wealth finance, and storage in the inka political economy. *Current Anthropology*, 26(2), 187–206.
- Dahlberg, F. (1981). *Woman the Gatherer*. New Haven: Yale University Press.
- Deaux, K. (2000). Identity. In A. E. Kazdin (Ed.), *Encyclopedia of Psychology* (pp. 222–225). Washington, DC: American Psychological Association.

- DeMarrais, E., Castillo, L. J., & Earle, T. (1996). Ideology, materialization, and power strategies. *Current Anthropology*, 37(1), 15–31.
- Derossis, A. M., Bothwell, J., Sigman, H. H., & Fried, G. M. (1998). The effect of practice on performance in a laparoscopic simulator. *Surgical Endoscopy*, 12(9), 1117–1120.
- Dhillon, N. S. (1980). *Practical Sikhism*. London: Dhillon.
- Dobres, M.-A., & Robb, J. E. (2000). Agency in archaeology: Paradigm or platitude? In M.-A. Dobres, & J. E. Robb (Eds.) *Agency in Archaeology* (pp. 3–17). London: Routledge.
- Dolbow, S. (2001). Here, there and underwear: The inside skinny on skivvies. *Brandweek*, 42(33), 11.
- Douglas, M., & Isherwood, B. (1996[1979]). *The World of Goods: Towards an Anthropology of Consumption*. London: Routledge.
- Dubas, K. M., & Jonsson, P. (2005). Rationality in consumer decision making. *Proceedings of the Academy of Marketing Studies*, 10(2), 5–8.
- Ericsson, K. A., Ralf Th. Krampe, and Clemens Tesch-Romer (1993) The role of deliberate practice in the acquisition of expert performance. *Psychological Review* 100(3):363–406.
- Eshed, V., Gopher, A., Gage, T. B., & Hershkovitz, I. (2004). Has the transition to agriculture reshaped the demographic structure of prehistoric populations? New evidence from the levant. *American Journal of Physical Anthropology*, 124, 315–329.
- Fields, J. (2002). Erotic modesty: (Ad)ressing female sexuality and propriety in open and closed drawers, USA, 1800–1930. *Gender and History*, 14(3), 492–515.
- Fisher, G., & Loren, D. D. (2003). Introduction: Embodying identity in archaeology. *Cambridge Archaeological Journal*, 13(2), 225–230.
- Fowler, C. (2004). *The archaeology of personhood: An anthropological approach*. London: Routledge.
- Frankenberg, S. R., & Konigsberg, L. W. (2006). A brief history of paleodemography from Hooton to hazards analysis. In J. E. Buikstra, & L. A. Beck (Eds.), *Bioarchaeology: The Contextual Analysis of Human Remains* (pp. 227–261). Amsterdam: Elsevier.
- Garvey, P. (2001). Organized disorder: Moving furniture in Norwegian homes. In D. Miller (Ed.), *Home possessions* (pp. 47–68). Oxford: Berg.
- Gottdiener, M. (1995). *Postmodern semiotics: Material culture and the forms of postmodern life*. Oxford: Blackwell.
- Grahame, M. (1997). Public and private in the Roman house: The spatial order of the Casa del Fauno. In R. Laurence, & A. Wallace-Hadrill (Eds.), *Domestic space in the Roman world: Pompeii and beyond*, *Journal of Roman Archaeology* supplementary series No. 22, pp. 137–164.
- Gullestad, M. (1993). Home decoration as popular culture: Constructing homes, genders and classes in Norway. In T. del Valle (Ed.), *Gendered anthropology* (pp. 128–161). London: Routledge.
- Harada, S., Akhter, R., Kurita, K., Mori, M., Hoshikoshi, M., Tamashiro, H. (2005). Relationships between lifestyle and dental health behaviors in a rural population in Japan. *Community Dentistry and Oral Epidemiology*, 33, 17–24.
- Hathcock, J. N. (1997). Vitamins and minerals: Efficacy and safety. *American Journal of Clinical Nutrition*, 66, 427–437.
- Hawkes, K., O'Connell, J. F., Blurton Jones, N. G., Alvarez, H., & Charnov, E. L. (1998). Grandmothering, Menopause, and the Evolution of Human Life Histories. *Proceedings of the National Academy of Sciences*, 95, 1336–1339.
- Helms, M. W. (1993). *Craft and the kingly ideal: Art, trade and power*. Austin: University of Texas.
- Hill, J. N., & Gunn, J. (1977). *The individual in prehistory*. New York: Academic.
- Hodder, I. (1982). *The present past*. London: B.T. Batsford.
- Hodder, I. (2000). Agency and individuals in long-term processes. In M.-A. Dobres, & J. Robb (Eds.), *Agency in archaeology* (pp. 21–33). London: Routledge.
- Hollan, D. (1992). Cross-cultural differences in the self. *Journal of Anthropological Research*, 48(4), 283–300.
- Horowitz, S. (2001). Ancient wisdom for modern medicine: Jewish perspectives on health. *Alternative and Complementary Therapies*, 7(6), 355–359.
- Hosler, D. (1999). Recent insights into the metallurgical technologies of ancient Mesoamerica. *Journal of the Minerals, Metals and Materials Society*, 51(5), 11–14.
- Jansen, R. J., Koens, H. F. W., & Stoker, J. (2005). Scenes from the past: Carthaginian pair of tweezers. *RadioGraphics*, 25, 209–213.
- Johnson, G. A. (1982). Organizational structure and scalar stress. In C. Renfrew, M. Rowlands, & B. A. Seagraves-Whallon (Eds.), *Theory and Explanation in Archaeology* (pp. 389–421). New York: Academic.



- Joyce, R. (2003). Concrete memories: Fragments of the past in the classic Maya present. In R. M. Van Dyke, & S. E. Alcock (Eds.), *Archaeologies of memory* (pp. 104–125). Malden, MA: Blackwell.
- Joyce, R. (2005). Archaeology of the body. *Annual Review of Anthropology*, 34, 139–158.
- Kacelnik, A., & Marsh, B. (2002). Cost can increase preference in starlings. *Animal Behavior*, 63, 245–250.
- Kenoyer, J. M. (1998). *Ancient cities of the Indus valley civilization*. Karachi: Oxford University Press.
- Kent, S. (Ed) (1990). *Domestic architecture and the use of space*. Cambridge: Cambridge University Press.
- Kirk, S. F. L., Cade, J. E., Barrett, J. H., Conner, M. (1999). Diet and lifestyle characteristics associated with dietary supplement use in women. *Public Health Nutrition*, 2(1), 69–73.
- Kirn, T. F. (2005). Calcium-poor diets common in rich women. *Family Practice News*, 35(13), 57.
- Kittler, R., Kayser, M., & Stoneking, M. (2003). Molecular evolution of *Pediculus humanus* and the origin of clothing. *Current Biology*, 13, 1414–1417.
- Klein, R. (2005). Hominin dispersals in the old world. In C. Scarre (Ed.), *The Human Past* (pp. 84–123). London: Thames and Hudson.
- Kleine, R. E., III, Kleine, S. S., & Kernan, J. B. (1993). Mundane consumption and the self: A social-identity perspective. *Journal of Consumer Psychology*, 2(3), 209–235.
- Kliks, M. (1975). *Paleoepidemiological studies of great basin coprolites: Estimation of dietary fiber intake and evaluation of the ingestion of anthelmintic plant substances*. Berkeley: Archaeological Research Facility, University of California.
- Kramer, C. (1985). Ceramic ethnoarchaeology. *Annual Review of Anthropology*, 14, 77–102.
- Kuhn, S. L., Stiner, M. C., Reese, D. S., & Güleç, E. (2001). Ornaments of the earliest upper paleolithic: New insights from the levant. *Proceedings of the National Academy of Sciences*, 98(13), 7641–7646.
- Lacan, J. (1977). The mirror stage as formative of the function of the I as revealed in psychoanalytic experience. In Alan Sheridan (trans.) *Écrits* (pp. 1–7). New York: W.W. Norton. [1949].
- Lavin, D., & A. Groarke (2005). Dental floss behaviour: A test of the predictive utility of the theory of planned behaviour and the effects of making implementation intentions. *Psychology, Health and Medicine*, 10(3), 243–252.
- Lewis-Williams, J. D., & Dowson, T. A. (1988). The signs of all times: Entoptic phenomena in upper Paleolithic art. *Current Anthropology*, 29(2), 201–245.
- Loasby, B. J. (2001). Cognition, imagination and institutions in demand creation. In U. Witt (Ed.), *Escaping satiation: The demand side of economic growth* (pp. 13–27). Berlin: Springer.
- Longacre, W. A. (Ed.) (1991). *Ceramic ethnoarchaeology*. Tucson: University of Arizona Press.
- Lynch, C. (2002). The politics of white women's underwear in Sri Lanka's open economy. *Social Politics*, 9(1), 87–125.
- Lyon, M. L. (2005). Technologies of feeling and being: Medicines in contemporary Indonesia. *International Institute for Asian Studies Newsletter*, 37, 14.
- Magner, L. N. (1992). *A History of Medicine*. New York: Marcel Dekker.
- Mann, T., Sherman, D., & Updegraff, J. (2004). Dispositional motivations and message framing: A test of the congruency hypothesis in college students. *Health Psychology*, 23(3), 330–334.
- Manzanilla, L. (1996). Corporate groups and domestic activities at Teotihuacan. *Latin American Antiquity*, 7(3), 228–246.
- Martin, A. (1998). Organization of semantic knowledge and the origin of words in the brain. In N. G. Jablonski, & L. C. Aiello (Eds.), *The Origin and Diversification of Language. Memoirs of the California Academy of Sciences No. 24* (pp. 69–88). San Francisco, CA.
- Martin, A. (2007). The representation of object concepts in the brain. *Annual Review of Psychology*, 58, 25–45.
- Masquelier, A. (1997). Vectors of witchcraft: Object transactions and the materialization of memory in niger. *Anthropological Quarterly*, 70(4), 187–198.
- Mayor, A. (1999). People illustrated. *Archaeology*, 52(2), 54–57.
- Miller, D. (1985). *Artefacts as categories*. Cambridge: Cambridge University Press.
- Miller, D. (1987). *Material culture and mass consumption*. London: Basil Blackwell.
- Miller, R. L. (1991). Paleoepidemiology, literacy, and medical tradition among necropolis workmen in new kingdom Egypt. *Medical History*, 35, 1–24.
- Miller, N. H. (1997). Compliance with treatment regimens in chronic asymptomatic diseases. *American Journal of Medicine*, 102(2A), 43–49.
- Miller, D. (2001). Behind closed doors. In D. Miller (Ed.), *Home possessions* (pp. 1–19). Oxford: Berg.
- Mines, D. P. (1997). Making the past past: Objects and the spatialization of time in Tamilnadu. *Anthropological Quarterly*, 70(4), 173–186.

- Mohanty, R. K., & Smith, M. L. (2006). Excavations at sisupalgarh 2005. *Man and Environment*, 31(1), 27–32.
- Moore, H. (1993). The differences within and the differences between. In T. del Valle (Ed.), *Gendered Anthropology* (pp. 193–204). London: Routledge.
- Moore, J. D. (1996). *Architecture and power in the ancient Andes: The archaeology of public buildings*. Cambridge: Cambridge University Press.
- Moore, J. D. (2005). *Cultural landscapes in the ancient Andes: Archaeologies of place*. Gainesville: University Press of Florida.
- Nadel, D., Grinberg, U., Boaretto, E., & Werker, E. (2006). Wooden objects from Ohalo II (23,000 cal BP), Jordan Valley, Israel. *Journal of Human Evolution*, 50, 644–662.
- Nast, H. J. (1998). The body as ‘place’: Reflexivity fieldwork in Kano, Nigeria. In H. J. Nast, & S. Pile (Eds.), *Places Through the Body* (pp. 93–116). London: Routledge.
- Netland, K. E., & Martinez, J. (2000). Abortifacients: Toxidromes, ancient to modern—a case series and review of the literature. *Academic Emergency Medicine*, 7, 824–829.
- Netting, R. McC. (1993). *Smallholders, householders: Farm families and the ecology of intensive, sustainable agriculture*. Stanford: Stanford University Press.
- Palmer, M. E., Haller, C., McKinney, P. E., Klein-Schwartz, W., Tschirgi, A., Smolinske, S. C., et al. (2003). Adverse events associated with dietary supplements: An observational study. *The Lancet*, 361, 101–106.
- Park, S. M. (1996). From sanitation to liberation?: The modern and postmodern marketing of menstrual products. *Journal of Popular Culture*, 30(2), 149–168.
- Pattee, A. S. (2004). Mass market mortification: The developmental appropriateness of teen magazines and the embarrassing story standard. *Library Quarterly*, 74(1), 1–20.
- Prahalad, C. K. (2005). *The fortune at the bottom of the pyramid: Eradicating poverty through profits*. Upper Saddle River NJ: Wharton School Publishing.
- Rathje, W., & Murphy, C. (1992). *Rubbish! The archaeology of garbage*. New York: Harper Collins.
- Rise, J., Åström, A. N., & Sutton, S. (1998). Predicting intentions and use of dental floss among adolescents: An application of the theory of planned behavior. *Psychology and Health*, 13, 223–236.
- Robb, J. E. (1999). Secret agents: Culture, economy, and social reproduction. In J. E. Robb (Ed.), *Material symbols: Culture and economy in prehistory* (pp. 3–15). Carbondale: Center for Archaeological Investigations, Southern Illinois University.
- Roberts, T.-A., & Waters, P. L. (2004). Self-objectification and that ‘not so fresh feeling’: Feminist therapeutic interventions for healthy female embodiment. *Women and Therapy*, 27(3–4), 5–21.
- Rosengarten, M. (2000). Thinking menstrual blood. *Australian Feminist Studies*, 15(31), 91–101.
- Ross, S., Walker, A., & MacLeod, M. J. (2004). Patient compliance in hypertension: Role of illness perceptions and treatment beliefs. *Journal of Human Hypertension*, 18, 607–613.
- Ruscher, S. M., de Wit, R., & Mazmanian, D. (1997). Psychiatric patients’ attitudes about medication and factors affecting noncompliance. *Psychiatric Services*, 48, 82–85.
- Schiffer, M. B. (1987). *Formation Processes of the Archaeological Record*. Albuquerque: University of New Mexico.
- Schiffer, M. B. (1991). *The portable radio in American life*. Tucson: University of Arizona Press.
- Schiffer, M. B. (2005). The devil is in the details: The cascade model of invention processes. *American Antiquity*, 70(3), 485–502.
- Schiffer, M. B., Downing, T. E., & McCarthy, M. (1981). Waste not, want not: An ethnoarchaeological study of reuse in Tucson, Arizona. In R. A. Gould (Ed.), *Modern material culture: The archaeology of us* (pp. 67–86). Academic, New York.
- Schiffer, M. B., & Miller, A. R. (1999). *The material life of human beings: Artifacts, behavior, and communication*. London: Routledge.
- Schiffer, M. B., & Skibo, J. M. (1997). The explanation of artifact variability. *American Antiquity*, 62(1), 27–50.
- Schildkrout, E. (2004). Inscribing the body. *Annual Review of Anthropology*, 33, 319–344.
- Simmerman, S. R. (1993). The Mormon health traditions: An evolving view of modern medicine. *Journal of Religion and Health*, 32(3), 189–196.
- Simpson, B. (1996). Self and social identity: An analysis of the mesolithic body adornment from the Scottish western isles. In T. Pollard, & A. Morrison (Eds.), *The Early Prehistory of Scotland* (pp. 237–251). Edinburgh: Edinburgh University Press.
- Smith, M. L. (1999). The role of ordinary goods in premodern exchange. *Journal of Archaeological Method and Theory*, 6(2), 109–135.
- Smith, M. L., & Mohanty, R. K. (2007). New investigations at an old city: Research at Sisupalgarh, India. *Backdirt Annual Review of the Cotsen Institute of Archaeology* 54–59.

- Spencer, C. S. (1997). Evolutionary approaches in archaeology. *Journal of Archaeological Research*, 5(3), 209–264.
- Spiegel, A. D., & Springer, C. R. (2007). Babylonian medicine, managed care and Codex Hammurabi, c. 1700 BC. In R. L. Anderson (Ed.), *Sources in the history of medicine: the Impact of Disease and Trauma* (pp. 34–43). Upper Saddle River N.J.: Pearson.
- Spindler, K. (1994). *The man in the ice* (trans. Ewald Osers). New York: Harmony Books.
- Stone, E. C. (1995). The development of cities in ancient Mesopotamia. In J. M. Sasson (Ed.), *Civilizations of the Ancient Near East* (pp. 235–248). New York: Charles Scribner's Sons.
- Streicker, J. (1997). Spatial reconfigurations, imagined geographies, and social conflicts in Cartagena, Colombia. *Cultural Anthropology*, 12(1), 109–128.
- Tacchi, J. (1998). Radio texture: Between self and others. In D. Miller (Ed.), *Material Cultures: Why some things matter* (pp. 25–45). Chicago: University of Chicago.
- Treherne, P. (1995). The warrior's beauty: The masculine body and self-identity in Bronze Age Europe. *Journal of the European Association of Archaeologists*, 3(1), 105–144.
- Turner, T. S. (1980). The social skin. In J. Chermak, & R. Lewin (Eds.), *Not work alone* (pp. 112–140). London: Temple Smith.
- Uberoi, J. P. S. (1969). The five symbols of Sikhism. In F. Singh, et al. (Ed.), *Sikhism* (pp. 123–138). Patiala: Punjabi University.
- van der Sanden, W. (1996). *Through nature to eternity: The bog bodies of Northwest Europe*. Amsterdam: Batavian Lion International.
- Van Dyke, R., & Alcock, S. E. (Eds.) (2003). *Archaeologies of Memory*. Malden, MA: Blackwell.
- VanPool, T. L., & VanPool, C. S. (2003). Agency and evolution: The role of intended and unintended consequences of action. In T. L. VanPool, & C. S. VanPool (Eds.), *Essential tensions in archaeological method and theory* (pp. 89–113). Salt Lake City: University of Utah Press.
- Veblen, T. (1899). *The theory of the leisure class*. London: MacMillan.
- Walker, W. H., & Schiffer, M. B. (2006). The Materiality of Social Power: The Artifact-Acquisition Perspective. *Journal of Archaeological Method and Theory*, 13(2), 67–88.
- Wilk, R. (1990). The built environment and consumer decisions. In S. Kent (Ed.), *Domestic architecture and the use of space* (pp. 34–42). Cambridge: Cambridge University Press.
- Wilk, R. R., & Rathje, W. L. (1982). Household archaeology. *American Behavioral Scientist*, 25(6), 617–639.
- Winnicott, D. W. (1971). *Playing and reality*. London: Tavistock Publications.
- Witt, U. (2001). Consumption, demand and economic growth: An introduction. In U. Witt (Ed.), *Escaping satiation: The demand side of economic growth* (pp. 1–10). Berlin: Springer.
- Wobst, H. M. (1977). Stylistic behavior and information exchange. In C. E. Cleland (Ed.), *For the director: Research essays in honor of James B. Griffin. Anthropological papers of the museum of anthropology No. 61* (pp. 317–342). Ann Arbor: University of Michigan.
- Wolman, B. B. (compiler and ed.) (1989). Identity. *Dictionary of Behavioral Science, second edition*. San Diego: Academic.
- Wu, J.-N. (2005). *An illustrated Chinese materia medica*. Oxford: Oxford University Press.
- Wynn, T. (2002). Archaeology and cognitive evolution. *Behavioral and Brain Sciences*, 25, 389–402.
- Young, M. M. (1991). Disposition of possessions during role transitions. *Advances in Consumer Research*, 18, 33–39.