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*Journal of Material Culture* published online 31 July 2013

DOI: 10.1177/1359183513496489

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What is This?
Undocumented migration, use wear, and the materiality of habitual suffering in the Sonoran Desert

Jason De León
University of Michigan, Ann Arbor, USA

Abstract
Since the late 1990s, unauthorized migrants attempting to cross the Sonoran Desert of Arizona have been relying on a unique set of material culture to evade Border Patrol, as well as prevent and treat injuries during the crossing process. Some media and academic attention has focused on the hundreds of migrants who die each year during desert border crossings, but little focus has been paid to the non-lethal injuries (e.g. blisters and dehydration) that hundreds of thousands of people sustain annually. Using a combination of ethnographic and archaeological data, the author argues that border-crossing artifacts both reflect and shape a way of being that is specific to the desert migration process. Expanding upon the archaeological concept of use wear, he demonstrates that modifications made to migrant goods provide evidence of border-crossing body techniques that are connected to widespread and routinized forms of corporeal suffering.

Keywords
Border crossings, Sonora Desert, suffering, undocumented migration, use wear

Introduction
When I first began researching undocumented migration I frequently found it difficult to record data on the various injuries that people sustained after attempting to cross the desert on foot. On a daily basis I observed dozens of people returning after an unsuccessful crossing in various states of exhaustion, misery, and pain: Men with deep gashes on their arms and legs, the result of getting caught on barbed wire fences while fleeing Border Patrol; children with their faces and arms covered in scratches from running through the cactus-covered desert at night; women wincing in pain as they lightly walk on their heels to avoid putting pressure on the giant,
blood-filled blisters that cover the bottom surfaces of their feet. The blisters are so gruesome that they look almost fake. After a little more than a week, I stopped noticing many of these common injuries. They are ‘minor’ in comparison to the crying and shaking of some of the women who arrive in shock after a desert trauma that is too horrific to say out loud. I can now easily put a bandage on a blistered foot but I still don’t know how to comfort the man who was separated from his wife somewhere in the vast desert. The limping can easily go unnoticed when you are trying to make a 6-year-old girl laugh so that she can forget about the things she has seen on her two previous crossing attempts … I asked a recently deported man named Netchy [all names are pseudonyms], after he had spent three days walking in the desert and two days in federal detention, how he could maintain his seemingly positive outlook as he planned his fourth crossing attempt in less than a month. With little affect he told me, ‘Look, the migrant is going to suffer during la caminata [border crossing]. There is no point complaining around here because we are all screwed. You just have to look at those who have been raped or who have lost someone in the desert to know that your own suffering is not great.’ After a certain point of documenting this daily parade of horrors, I came to realize that many of those who survive in this space, especially those who make multiple crossing attempts, are the ones who can recalibrate both their tolerance for and definitions of suffering. (De León, field journal, August 2009)

In the mid-1990s, the US federal enforcement strategy known as Prevention Through Deterrence (PTD) (Government Accountability Office [GAO], 1997: 64–65) was implemented along the southern border. This strategy increased security in unauthorized crossing areas surrounding urban ports of entry in an attempt to shift undocumented migration towards remote border regions such as the Sonora Desert of Arizona, where security is less intense but crossing conditions are more difficult (Andreas, 2009; Cornelius, 2001; Nevins, 2002). Arizona is now the busiest crossing point along the southern border, even during this temporary period of migration decline (see Table 1). Those who enter through this region must walk for long distances (e.g. over 70 miles) and often over several days. In addition, migrants must negotiate an inhospitable landscape characterized by extreme environmental conditions (e.g. summer temperatures often exceeding 100°F/38°C and winter temperatures that can reach freezing), rugged terrain, border bandits who rob and assault people, and coyotes (human smugglers) who may abandon clients in the desert. Migrants must also evade Border Patrol, who employ sophisticated ground and aerial surveillance technology to detect and capture people.

Two decades of research have shown that PTD has failed to deter migration (e.g. Cornelius and Salehyan, 2007), but has succeeded in shaping border crossing into a well-organized, dangerous and violent social process with a unique set of material culture and technologies (De León, 2012a; Slack and Whiteford, 2011). As the PTD strategy shifted undocumented migration towards the deserts of Arizona, the human smuggling industry in the neighboring state of Sonora, Mexico, grew in order to deal with the influx of migrants to the region. While the Sonoran Desert has long been a place of suffering for migrants from Mexico, China and beyond (Chavez, 2009; Ettinger, 2009), the developments that followed the institution of PTD saw a rise in migrant traffic that was an order of magnitude greater than anything seen in previous generations. For example, the tiny agricultural town of Altar (see Figure 1 for a map of all locations mentioned) became a primary staging area for hundreds of thousands of border crossers who arrived each year. Subsequently, smugglers, vendors and local manufacturers began to capitalize on migrants, who needed guide services, temporary housing, food and equipment (Figure 3).
Table 1. Total number and corresponding percentages of Border Patrol apprehensions per sector from 2000 to 2012 (based on data from www.cbp.gov).

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The goods now associated with border crossing include camouflage and dark-colored clothing (Figure 3), specialized water bottles, first-aid equipment (e.g. gauze, muscle cream, pain relievers), high-salt-content foods, hydration beverages, religious objects (e.g. prayer cards, votive candles) and many other items (Figure 4). These artifacts form part of a dynamic sociotechnical system that is shaped by border enforcement, migrants and the human smuggling industry (De León, 2012a).

Unauthorized migration through the desert is both complex and clandestine, with participants involved in this activity often unable to describe in detail or fully comprehend many aspects of the process. Started in 2009, the Undocumented Migration Project (UMP) is a long-term ethnographic and archaeological study of border crossings between Northern Mexico and Southern Arizona. This project developed out of an interest in understanding the day-to-day realities of the physical act of clandestine migration, as

Figure 1. Map of the study area with major towns and cities mentioned in text. The gray rectangle areas designate National Forest and Federal Nature Reserve lands. The shaded circle around the town of Arivaca represents the approximate boundaries of the archaeological survey area.
well as the material traces this process leaves behind (see the discussion of the project history in De León, 2012b). The above journal entry from my early fieldwork describes
typical scenes from a Northern Mexican migrant shelter where people return from failed desert crossings in various states of physical and emotional distress.

In this article, I argue that the seemingly mundane things left in the desert are key to understanding the routinized and widespread forms of suffering that many border crossers experience, but often downplay. After more than a decade of crossing the Sonoran Desert on foot, many migrants have recalibrated their tolerance for suffering in order to both cope with the repeated non-lethal shocks that now characterize the crossing process and to construct a logic that helps them conceptualize the continuum of border violence that includes more visible and traumatizing forms. Borrowing and expanding upon the archaeological concept of use wear (i.e. modifications made to objects as a result of being employed in specific tasks), I demonstrate how an analysis of the worn and deposited items in the desert can provide a new understanding of the shared system of crossing techniques, as well as the intimate and often painful relationships between people’s bodies and the tools they rely on. First, I provide a brief background on migrant material culture, studies of techniques of the body and use wear. This is followed by a description of different forms of use wear found on migrant objects and their connection to the body. I conclude with a discussion of how a use-wear approach can be productively integrated into ethnographic research focused on materiality.

**Methods and data**

Research focused on an ‘archaeology of the contemporary’ (i.e. studies of the material traces of the recent past) has steadily increased over the last two decades (e.g. Harrison and Schofield, 2010; Rathje and Murphy, 2001), with some scholars examining controversial or politically charged subjects that archaeology has previously tended to avoid.
Building on some of this work, the UMP is the first systematic attempt to use archaeological techniques to recover and analyze the many objects that migrants leave in the desert. One goal of this project is to understand the connection between material culture and certain aspects of migration, including the techniques people use to furtively move through the desert, the socioeconomic system that structures the process, and the suffering and violence experienced by the diverse array of people who undertake crossings. In this context, an archaeological approach allows for the collection of new types of data on unauthorized migration that can be integrated into the UMP’s overarching ethnographic narrative.

When moving across the desert, people typically eat, rest, change clothes and leave behind a variety of items at different stages of the process. Discarded objects include those related to subsistence and survival (e.g. water bottles), goods used to clean up one’s appearance (e.g. toothbrushes or deodorants) after many days of hiking, and personal possessions (e.g. letters, photographs) unintentionally left behind. These objects are often recovered at ad hoc campsites that UMP researchers refer to as migrant stations. Migrant stations have recently become a focal point for anti-immigrant crusaders, who have appropriated the cause of environmental protection to mask their xenophobia. Although unsubstantiated claims exist about the contents of migrant stations and people’s motivations for leaving things behind, there is ample evidence to suggest that hundreds of thousands (if not millions) of water bottles, backpacks, shoes and other items have been left in the deserts of Arizona since the 1990s. While the tendency, even among those with more sensitivity towards understanding the complexities of undocumented migration, is to rather uncritically deploy the terms ‘garbage’ and ‘trash’ when referring to these found objects, I posit that to do so oversimplifies or ignores what these artifacts (individually and collectively) can tell us about the migration process.

In this article, I draw on ethnographic and archaeological data collected in Southern Arizona and Northern Mexico. Ethnographic data were collected in the Mexican towns of Nogales and Altar in the summers of 2009 and 2010. Semi-structured and informal interviews were conducted in Spanish with hundreds of migrants either before crossing or immediately following deportation. During these interviews, which ranged from short conversations (about 15 minutes) to multiple hour-long sessions, migrants were asked about a range of issues, including how they prepared for a crossing, what happened to them en route and how they were treated once deported back to Mexico. These interviews took place in migrant shelters, in local businesses frequented by deportees and in front of a government office in Nogales that assists recently repatriated migrants. Those interviewed were men and women between the ages of 18 and 65, the bulk of whom were Mexican nationals. Some of these individuals were first-time migrants, while others had spent significant periods of time in the United States and had attempted multiple crossings. Depending on the circumstance and location, interviews were recorded via handwritten notes, a digital voice recorder or both. Interview data were then transcribed and coded for major themes. All appropriate human subject protocols were followed during the interview process and informed verbal consent was obtained for all participants.
In addition to interviews, hundreds of hours of observational data on the day-to-day experiences of deported people in Nogales were collected. This included long-term observations of migrants in a local shelter, observing interactions between Mexican government officials and recent deportees at a federal aid office, and ‘hanging out’ on the streets of Nogales with migrants as they prepared to undertake a crossing or recuperated from a failed attempt. In addition, in 2009, several migrants were given disposable cameras and asked to photograph their crossing experiences for anonymous publication (for a similar project, see Adler et al., 2007), some of which are included here. The archaeological data come from surveys of trails used by border crossers and detailed analyses of migrant stations in the deserts north-west of Nogales during the summers of 2009 and

Figure 5. (A) Resting at a migrant station. Photograph taken by a migrant; (B) Over the course of repeated use, migrant stations can develop into sizeable archaeological sites. Photograph: Jason De León.
2010. To date, the UMP has mapped dozens of migrant stations and collected thousands of artifacts, including water bottles, clothing and other materials. Although migrants attempt to cross the Sonoran Desert at all times of the year, I focus here on the summer months because this is the period when people face the highest risk of injury and death due to exposure. It should, however, be noted that some injuries described here (e.g. blisters) can be sustained at any time of the year.

**Theoretical background**

Recent research on ‘undocumented’ people around the globe has shown similarities in the types of *habitus* (i.e. the set of learned perspectives, tastes and dispositions people use to orient themselves in their relations with people and objects [see Bourdieu, 1977] and physical and mental stresses associated with this juridical status, e.g. compare Willen, 2007, and Talavera et al., 2010). Analyses of the lives of undocumented Latinos in the US have demonstrated that the themes of racism, social and economic inequality, and exposure to state-crafted violence characterize the experiences of this population across time and space (e.g. Chavez, 1998; Hernández, 2010; Holmes, 2007; Nevins, 2002). In a recent study of Mexicans undertaking border crossings in South Texas, David Spener (2009: 227) argues that several generations of crossing experience have created a unique form of *migration-specific habitus* that pre-disposes working-class border crossers to tolerate abnormal levels of misery and death during this process. Migrants are often socialized through communication networks and information sharing about the crossing process, as well as through popular culture and media that warn of the dangers and misery that typically accompany each trip. Spener notes that the poor living conditions associated with the Mexican working class mean that their lives are often characterized by inadequacies related to income, health care, diet, sanitation, water supply and security; subsequently, ‘migrants learn to expect and then bear the bad conditions as a matter of course in their lives, including as they make … efforts to improve their condition by heading north (2009:227).’ Drawing on this work, I argue that a great deal of what happens to people in the context of border crossing involves specific forms of corporeal suffering that have become routinized and subsequently often unremarked upon by migrants. Moreover, this suffering is visible both in the specific techniques migrants use to cross the desert and in the material fingerprint of this process.

Those who cross the Sonoran Desert rely on a suite of specialized goods as well as techniques that are often learned en route and practiced over several attempts. These crossing behaviors, which include learning what to bring, how to effectively and clandestinely move across the landscape, how to conserve water and how to handle physical strain, fall under what Singer and Massey (1998: 569) call *migration-specific capital*. As people accrue migration-specific capital, such as knowledge about where, when and how to cross, they increase their likelihood of success and their tolerance for the process (Parks et al., 2009; Spener, 2009). The body techniques (Mauss and Schlanger, 2006: 77–95) that migrants learn en route are both unique to the desert crossing context and shaped by a complex network that includes border enforcement practices, the environment, migrant material culture, smugglers and other factors. During these crossings, migrants acquire knowledge about the desert, Border Patrol and the limits of
their bodies. In addition, crossers learn how to make do with the limited tool kit at their disposal, including adapting their body techniques and ways of being to adjust to material and technological constraints. As Downey (2007) has shown in his study of contestants in Ultimate Fighting Championships, body techniques are less conservative than we think and can be collectively, intentionally and systematically learned and refined in order to adjust to material constraints (e.g. clothing style) and to better accomplish set tasks (i.e. defeating an opponent). In the case of border crossings, I contend that there are unique techniques of the body that people learn over the course of multiple crossing attempts, and these techniques are often influenced by the tools (and their functional limitations) that migrants rely on. Moreover, these techniques are identifiable in the form of habitual wear patterns on objects.

Archaeologists have long recognized that use-wear patterns on artifacts are helpful for inferring how objects were employed by ancient people (e.g. Hayden, 1977) and can provide insight into broader issues, including exchange networks (e.g. Hirth, 2000) and subsistence practices (e.g. Stafford and Stafford, 1983; see the review in Odell, 2001). Although archaeologists have made great strides in studies of use wear over the last several decades, this work has had little influence on those studying contemporary material culture. However, ethnographic research on materiality has increasingly focused on the intimate relationship between the body and objects (e.g. Banerjee and Miller, 2003; Entwistle, 2000; Norris, 2004: 62–63). To my knowledge, no ethnographer has employed the concept of use wear to understand the corporeal relationship between people and objects, although some have sought to understand what the bodily substances absorbed by objects (through repeated use) can tell us about cultural processes and experience. Here, I highlight a few key examples that have informed this study of use wear.

In an essay on mourning, Peter Stallybrass (1993) discusses the way that the jacket of a deceased friend haunts him through the traces of the former owner manifested as permanent wrinkles, stains and smells embedded in the fabric. For Stallybrass, garments capture the imprints (e.g. gestures) of those who once wore them, and the traces of these former owners can be experienced by others at multi-sensory levels, including touch, smell and sight (pp. 36–37). While Stallybrass focuses on the unique biographies of individual items, Catherine Allerton’s work among the Mangarrai of Indonesia demonstrates how somatic and phenomenological approaches to everyday classes of items such as sarongs can help us understand broad-scale patterns of use and ‘multi-sensory means of being in the world’ (Allerton, 2007: 25). For Allerton, sarongs ‘inculcate certain bodily habits and dispositions’ (p. 30) and through prolonged use they absorb many bodily substances that connect them to their owners and help shape the biographies of these objects (Kopytoff, 1986). Allerton’s nuanced study provides insight into how use wear on clothing reflects many Manggarai cultural practices associated with gender and age as well as how the sights and smells of objects can bring us closer to understanding people’s everyday ways of being. Combined, Stallybrass and Allerton help us appreciate the importance of both the individual and collective traces of humanity embedded in well-worn objects. While I am able to rely on ethnographic data to interpret migrant material culture, many of the archaeologically recovered objects have no owner who can directly speak for them. In these instances, the use wear (e.g. stains or smells) on items become what Kitty Hauser (2008: 69–70) calls ‘the visible sign of a story that … remains hidden.
[A stain] shows that something has happened here, even if we don’t always know what that something is … Stains speak, like scars, and wounds, even when the human beings that sport them will not’ (emphasis in original).

In her critique of Holocaust museum exhibitions, Carol Jones (2001: 216–217) remarks that the shoes worn by the victims of the Shoah often function as ‘object survivors’ that are burdened to both act as historical proof of an event rendered virtually immaterial and to elicit sympathy in the place of destroyed and absent bodies. Jones is critical of the ways in which these shoes have been transformed into aestheticized, traveling tropes that fail to capture the unimaginable and indescribable horrors of the Holocaust. While it is impossible to compare migrant suffering to the atrocities of the Shoah, I do see parallels in the ways in which migrant artifacts have been used by artists, immigration activists and others as a form of generic evidence of what happens in the desert. My appropriation of the archaeological concept of use wear in this ethnographic setting is an attempt to move beyond the symbolic interpretations of migrant artifacts and get a better view of how the embodied suffering that many border crossers have come to tolerate has taken on material forms. This use-wear approach seeks to: (1) illuminate the experiences of individual migrants evidenced on objects; (2) incorporate individual desert experiences into a broader framework that improves our understanding of shared techniques of the body and collective suffering; and (3) argue against viewing migrant artifacts as simplistic metonyms for generic and de-personalized suffering.

**Migrant techniques and use wear**

Archaeological studies of use wear tend to focus on understanding how the function of an object can be inferred from analyses of patterns of wear, with little emphasis on body techniques (although see Matthews, 2005, for an attempt to connect use wear and ‘gesture’). My approach to use wear seeks to show the intimate connection between people and objects and how those connections leave traces. When analyzed, these traces can open up new understandings of crossing techniques and migrant ways of being in the desert. Compared to traditional archaeological approaches, I define use wear more broadly to encompass both the modifications made to the physical structure of an artifact as well as objects that have been emptied of their contents and in essence ‘used up’. Admittedly, this wider definition conflates the concepts of use wear, consumption and deposition. However, because I focus on contemporary, often observable behavior, I am less constrained by the limitations of inference that characterize more ‘traditional’ use-wear studies. Below I describe three different forms of use wear: wear patterns, biological traces, and modifications.

**Wear patterns**

I define wear patterns as modifications made to objects resulting from their use in tasks or activities for which they were intentionally designed and briefly describe wear patterns on three classes of artifacts: shoes, water bottles and Border Patrol restraints. Migrants who walk long distances commonly suffer from friction blisters (sub-dermal pockets of fluid caused by forceful rubbing) on their feet. These painful (and often debilitating)
injuries are caused by poorly conditioned feet, ill-fitting shoes and socks, improper footwear, heat and moisture, all of which are typical conditions for border crossers. To combat blisters, people carry extra socks, foot powder, and gauze. However, blisters are usually the result of poorly fitting shoes (especially if they are not ‘broken in’), cheaply manufactured foot wear, a person’s failure to recognize and adequately treat the early stages of a blister, unhygienic desert conditions that can lead to infection, and a general inability to rest one’s feet for any significant period of time. Many of the shoes recovered in the desert show signs of intense walking in the form of worn-out treads, shredded uppers, or soles with holes worn completely through (Figure 6). These holes are often created by the persistent rubbing of feet against the bottom of the shoe during long-distance hiking, and this repeated motion is what often leads to the formation of blisters. However, it is not only long-distance walking that wears these shoes down. Traversing rough terrain (Figure 7) in footwear not intended for desert hiking can quickly destroy footwear and injure one’s feet. A 33-year-old migrant named Felipe, who had failed several times to cross the border after being deported from California for a traffic infraction, comments on how inappropriate footwear can lead to problems other than blisters:

Sometimes you can walk in the shade and it isn’t so bad. Inside the arroyos [washes] you can find shade. The risks in those places are the rocks. Some of these rocks are very sharp and you are going up and down the mountain climbing all over these rocks … Up and down. Up and down. The mountains are all the same and that is how the coyote takes you … People bring their walking shoes but not shoes for mountain climbing! They end up climbing all over rocks. People in Converse [sneakers] try to mountain climb! They end up stepping on sharp rocks and getting stuck by cholla [cactus] in the feet and legs.

In this quote, Felipe highlights both the activities that injure feet and the decisions that people must make in regards to hiking strategies. A person often has to choose whether to hike on flat terrain, where you expose yourself more directly to the sun (and Border Patrol), or to walk in shaded arroyos, where the rocky terrain can injure your ill-equipped feet. Both practices have pros and cons, and the quality of a person’s shoes may cause them to select one walking strategy over another.

Another class of objects that show an interesting wear pattern are the many empty water and beverage containers found in the desert. On a general level, these empty containers suggest that their previous owners consumed all of the liquid contents and thus had no more need for the receptacle. However, several related factors must be considered in the interpretation of these discarded bottles. First, many bottles are small (ranging from 500 ml to 1.5 litres) (Figure 8A). These sizes suggest that people were underprepared for long-distance hiking, especially in the summer when average daily consumption of water can be upwards of 6 litres De León, 2012a:485). Second, finding these discarded bottles in areas nowhere near additional water sources or roads suggests that their owners were not able to conserve their supply and ran out in an inopportune place. Running out of water leads many to suffer from hyperthermia. A 36-year-old migrant named Raúl describes his experience after a recent failed crossing:

I thought I was going to die out there … I couldn’t take it. My heart was pounding and I started to see things. I was delirious. I was hallucinating. I was looking at the trees but I was seeing
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houses and cities all around me … I would stop and take a small drink of water but five minutes later I would see things again … I only brought a gallon of water with me.

In this common scenario, Raúl must exercise care in how often he drinks from his bottle. Most do not carry more than two gallons of water for each trip and this conservation practice of taking small drinks is widespread. The following excerpt is from a conversation with a recently deported man named Enrique an hour before he enters the desert:

I’ve lived in the US for the last 14 years and was deported here [to Sonora] last week … I’m going to try and cross the desert tonight … I’m bringing one gallon of water. I know it is not enough, but water is really heavy. I can’t carry more than one gallon. Look at my bag [points to a small duffel bag] … I don’t want to drink too much water before I leave … I don’t want

Figure 6. (A) A woman’s shoe that has had the sole separated from the upper – someone has attempted to reattach the sole using a bra strap; (B) Shoe with the upper toe section torn open and a hole worn through the sole; (C) Shoe with a maxi-pad inserted into the heel area as padding against blisters; (D) A shoe that has had the sole separated from the upper – the user has attempted to reattach the sole using cloth strips and a sock. The shoe is also riddled with cactus spines. Photographs: Jason De León.
Figure 7. Traversing rocky terrain in sneakers. Photograph taken by a migrant en route.

Figure 8. (A) Bottles recovered from a migrant station. This sample suggests that many people carry bottles that are less than one gallon in size; (B) Filling up bottles at a cattle tank. Photograph taken by a migrant; (C) Recovered bottle filled with murky cattle tank water. Photographs (A) and (C): Jason De León.
to get a cramp … I just take little sips of my bottle and hope that I find more water along the way if I run out.

Both Raúl and Enrique describe a water consumption technique whereby people drink to combat the effects of the sun, but their sips must be small to both prevent cramping and conserve their limited supply. Enrique has not attempted a border crossing in 14 years, but is familiar with this technique and will attempt to reproduce it. Both men describe carrying only a one-gallon bottle, which suggests that they have little choice but to use this technique if they want to succeed. Carrying a limited amount of water often results from a person’s inability to physically carry a heavy load (partially influenced by backpack size); or an underestimation of what an adequate supply of water is; or the inability to purchase extra water. Numerous interviews with migrants regarding dehydration injuries and the overwhelming amount of empty bottles (especially those holding significantly less than a gallon) found in the desert both suggest that this practice of conservation is a difficult technique to maintain, especially during the summer months. If they are ‘lucky’, migrants who run out of water may replenish their supply at bacteria-laden tanks used for watering livestock (Figure 8B). This practice is visible archaeologically via recovered bottles refilled with green liquid (Figure 8C). Many commented that drinking cattle water causes illness and increased dehydration:

We crossed with another man who was 62 years old. He couldn’t handle it. He drank some water from a cattle tank that made him sick. Well, we all drank it but he got an infection. The water had little animals swimming in it but we were so thirsty … He started vomiting and had diarrhoea so we took him back into Mexico. (Andres, 43-year-old migrant)

The practice of water conservation, which forces people to deprive themselves even when they are thirsty, can be thought of as a strategy that both keeps the body minimally hydrated and also prevents someone from having to resort to drinking from a cattle tank. Water consumption techniques are thus simultaneously used to conserve liquid, combat hyperthermia and avoid having to imbibe unclean water. Empty bottles and those found refilled with cattle tank water suggest a failure to successfully practice this technique. Given that migrants typically accumulate crossing knowledge after multiple attempts (Singer and Massey, 1998), some may learn this consumption technique after failing to conserve fluids during previous crossings.

One artifact type that is not part of the repertoire of goods purchased by migrants, but that is found in the desert and linked to their bodies, is the disposable nylon hand restraint (known as TUFF-TIES, see Figure 9A) used by law enforcement. These items are recovered in areas where Border Patrol assembled and handcuffed groups of apprehended migrants in preparation for vehicle transport. These restraints can only be used once and those left behind show cut marks where they were removed from a prisoner’s hands (Figure 9B). In essence, these items represent an intimate physical encounter between migrants and the agents who restrained them. It has been previously shown that an important aspect of migrant behavior involves not resisting arrest once captured (e.g. Broyles and Haynes, 2010: 92). This strategy of surrender helps people avoid being severely treated by agents or charged with resisting arrest (Heyman, 1995: 270; Singer and Massey, 1998: 565). Compared to the other artifact types and forms of use wear
described in this article, expended TUFF-TIES appear relatively innocuous and show less signs of traumatic or intense physical engagement with migrant bodies. They are also worn for relatively short periods of time and are usually removed before prisoners are placed into vehicles for transport. These items can, however, be thought of as both material and symbolic representations of the conspicuously unequal relationship between Border Patrol and border crossers. Migrants know that they must behave once captured. For both parties involved, the power dynamics of this relationship are clear, and those with the upper hand have no need to emphasize their position through ostentatious displays of physical control. The widespread use of this minimal form of physical restraint for only a short amount of time suggests that the technique of docility practiced by apprehended people has influenced some of the tools that Border Patrol uses in the field.

Biological traces

Hiking across the desert is physically challenging and often leaves biological stains on objects. I refer to these as biological traces, and they include sweat, urine, feces, menstrual blood, skin and hair. Many of the better preserved archaeological items bear these marks of human activity, including salt-encrusted stains on shirts and backpack straps resulting from sweating, socks and bandages soiled by blood-filled blisters (Figure 10A) and urine drenched clothes (Figure 10B) resulting from loss of bladder control related to physiological stress associated with hyperthermia. Most biological traces are visible, but some are only identified through odor. Aromas provide a different type of somatic insight that may not be visible with other forms of use wear. For example, many migrants have to wear the same sweat-stained clothes for several days, including while they walk in the desert, sit in federal detention and when they are deported back to Mexico. In the shelter mentioned in the opening vignette, people must place their shoes in giant trash bags that

Figure 9. (A) Demonstration of how Border Patrol restraints (known as ‘TUFF-TIES) are worn; (B) Archaeological example of used TUFF-TIES. Photographs: Jason De León.
are sealed at night to contain the overwhelming foul odor that is created after several days of desert walking (Figure 10C). Some have highlighted the way that smells embedded in worn clothes can induce memories of deceased individuals (Stallybrass, 1993: 37) and bring comfort (Allerton, 2007: 35). In the context of border crossing, the pungent aromas of sweat, feces and urine conjure up images of physical pain, discomfort and suffering.

**Figure 10.** (A) Soiled gauze and a used foot brace; (B) A female child’s urine-soaked jeans; (C) In one shelter in Nogales, the shoes worn by migrants are kept in a trash bag at night to control the pungent odor of these items. Photographs: Jason De León.

are sealed at night to contain the overwhelming foul odor that is created after several days of desert walking (Figure 10C). Some have highlighted the way that smells embedded in worn clothes can induce memories of deceased individuals (Stallybrass, 1993: 37) and bring comfort (Allerton, 2007: 35). In the context of border crossing, the pungent aromas of sweat, feces and urine conjure up images of physical pain, discomfort and suffering.

**Modifications**

Both before and during a crossing event, migrants will make alterations to various items to improve their function, repair damage or to add some additional use or level
of meaning to an object. I refer to these adjustments as modifications and highlight three examples (personalizing, repairing, and repurposing). It is common to see shoes, backpacks, and other items that have been personalized with handwritten messages intended to inspire or protect the wearer. For example, Figure 11A shows someone writing a farewell message on the backpack of a migrant preparing to undertake a crossing. Figure 11B shows a close-up of messages written on a shoe that belonged to a small child. These messages (written in Spanish) include ‘I adore you’, ‘I miss those kisses’ and ‘I love you’. Another common modification involves repairing broken items. Clothes and backpacks that break in transit often show sewn holes, mended straps and many other types of jury rigging (also see discussion in Spener, 2010: 17, 20–22). Shoes tend to be the most common items in need of mending, and recovered footwear exhibits a wide-range of repairs and modifications, including re-glued soles, uppers re-stitched to the sole and added internal padding (Figure 6C). The types of
mending seen on some shoes suggest desperation. For example, Figure 6A shows a common repair on a woman’s shoe where the upper has completely separated from the sole and the user has attempted to reconnect them using a bra strap so that she could continue walking. A final modification involves repurposing items for a different use. Although border crossers prepare themselves by bringing an assortment of food, clothing and first-aid materials, issues often arise that require ad hoc ingenuity. For example, many find that they are unable to carry a heavy water bottle over long distances and may fashion handles for these bottles, using backpack straps or materials found in nature (e.g. a tree branch) (Figure 12). It is also common to see people sew covers for their bottles using pant legs or t-shirts. These modifications typically have to do with improving the comfort associated with carrying particular objects. However, in some cases objects have been repurposed for emergencies. For example, in the summer of

Figure 12. A bottle with a cover made from a denim pant leg and a handle made from a tree branch. Photograph: Jason De León.
2010 we recovered a sweatshirt that had been attached to a stick with twine and was likely used as a flag by someone trying to signal for help.

**Discussion**

The humble objects that are systematically selected, used and discarded by migrants in the desert tell us a great deal about people’s perceptions and attitudes towards the process of border crossing as well as how they physically experience it. The dress code and material culture of undocumented migration involves seemingly everyday items reconfigured into tools of subterfuge and survival. At one level, the material culture of desert border crossing reflects a migration-specific habitus that includes people’s dispositions towards how to avoid Border Patrol, how to survive the desert, how to act once they encounter agents and what types of physical suffering they should expect. This migration-specific habitus should be viewed as a form that is both unique to the Sonoran Desert (e.g. see other forms of migration-specific habitus described in Spener, 2009, and Chavez, 2011) and historically visible in the archaeological record of the region. Those who migrate across the desert generally recognize that the process will be difficult, dangerous and laden with various forms of suffering. This is evidenced in the many items that are designed to help one stay hidden (e.g. dark clothes), stave off dehydration (e.g. water bottles, high salt-content foods), treat what are often inevitable injuries (e.g. gauze, pain relievers) and bring comfort during encounters with the unknown (e.g. personalized items). The magnitude of this shared migration experience becomes clearer when you consider that over 5 million people have been apprehended while trying to cross through Arizona since 2000 (Table 1) and some estimate that desert crossers deposit an average 8 lbs of material per trip (http://www.azbordertrash.gov/).

On a different level, migrants and their tools are enmeshed in a dialectical relationship where objects often influence the physical techniques of border crossing. The form and quality of items (e.g. water bottles and sneakers) can dictate how they are to be used and what types of experiences a person will have while using them. Migrant techniques are learned through practice, and the tools that people rely on are directly involved in shaping these behaviors. Those who enter the desert with only one gallon of water (especially in the summer) must learn a drinking technique that allows them to conserve the fluids that can prolong your journey or life, while simultaneously depriving your body of much-needed hydrating liquids. It soon becomes a tug of war between drinking just enough water to stave off heatstroke but not enough to fully quench your thirst or exhaust your supply. The millions of empty bottles that have been scattered across the Arizona desert since the 1990s are evidence of both successful and failed attempts to reproduce this technique. When we look at a broken-down pair of shoes or an empty bottle, we get some insight into one person’s subjective experience of having their feet torn to shreds by the desert or their body becoming dehydrated. The bottles refilled with green cattle water and the shoes urgently patched together become striking material residues of desperation. Failure to carry out a crossing technique or repair a tool can mean failure to avoid Border Patrol or, worse, to save one’s life.

By focusing on the traces that migrant bodies leave on artifacts, a material approach to suffering can help delineate broad patterns of use reflected by hundreds of thousands
of objects left in the desert each year, while simultaneously bringing the viewer close enough to see and smell the residues of these experiences. Detailed documentation and analysis of use wear at multiple levels help balance what Kleinman and Kleinman (1991: 276) refer to as the interpretative dilemma, whereby ethnographers attempt to transform individual and group experiences into comprehensible anthropological data while not losing sight of the literal blood, sweat and tears. The approach outlined here has attempted to address this very dilemma. I have explicated the broadly shared tolerance for suffering that characterizes the experiences of many migrants and also shown that when viewed up close, migrant material culture can help us better see many of the intimate details of this suffering that, because of its pervasiveness, complexities and subtleties, can be difficult to document using ethnography alone. The suffering described here is partially concealed by the fact that it has become an accepted part of the crossing process and that it occurs in a setting with few witnesses. Moreover, this suffering may leave no physical trace at all or become buried in water bottles, shoes and other items left behind. These objects can tell us a great deal about what happens in the desert, and we diminish their voices when we reduce them to mere ‘trash’.

Conclusion

The point here is not just that pain can be apprehended in the image of the weapon … but that it almost cannot be apprehended without it. (Scarry, 1985: 16)

Daniel Miller (2010: 54) has cogently argued that it is often the ‘humility’ of everyday objects that prevents us from understanding how determinant of our lives they actually are. The scenes from the migrant shelter at the opening of this article highlight the continuum of suffering that migrants experience in the desert, which can include dehydration, sexual assault and even death. A lesson that I learned early on from many of those who shared their stories with me is that the literal ‘things’ that many take for granted can often provide new analytical insight into how people experience the desert. One night during my first summer in Nogales, I was assisting with the nightly intake of recently deported people at a shelter when a young man limped up to me and asked if someone could help him. Having already been hardened by watching hundreds of women and men limp in and out of the shelter for weeks and feeling overwhelmed in my own small attempts to help the overworked shelter workers find beds and meals for the close to 150 people who had arrived that night, I brusquely responded ‘Yeah, what is it?’ ‘Do you think there is an extra pair of shoes I could have?’, he asked. Before I could respond by saying, ‘Unfortunately, the shelter has no money and everyone here must make do with the shoes they have’, a script that I had memorized after hearing shelter workers say it hundreds of times, I looked down and noticed this person was barefoot. His grotesquely swollen and bloodied feet looked like he had spent the night dancing on broken glass. Before I could mutter an apology or ask what happened to his shoes, he matter-of-factly told me, ‘They broke in the desert and I had to go barefoot.’

In this article, I have highlighted how the materiality of undocumented migration in the Arizona desert is strongly tied to the ways in which people perceive, adapt to and experience this environment. By using objects as a lens to understand this process, we
can begin to excavate the more subtle forms of human suffering that have become a routinized and often unremarked upon component of border crossing. This material culture is intimately involved in shaping different techniques of the body, and the body in turn leaves its imprint on these objects. I have sketched a preliminary methodology for analyzing the wear patterns on particular types of goods in order to provide phenomenological insight into types of suffering specifically linked to the migration process. I have also shown that body techniques can be seen not just in patterns of object selection and usage but also in the traces of bodily movements visible through use wear. Migrants suffer a great deal in the desert, but by looking at the ways in which their bodies leave traces on objects we can begin to better understand the gradations of this suffering. Worn-out and abandoned shoes, bloodied socks and sweat-stained clothes provide more intimate details about what the crossing process is like for hundreds of thousands of people each year. Every one of these traces provides evidence for a single person’s individualized experience in a desert of shared misery. Rather than pain and suffering ‘unmaking’ migrants (Scarry, 1985), they are normalized parts of the social process of border crossing that many have unfortunately come to accept and embody.

Acknowledgements
I wish to thank Abigail Bigham, Michael Wells, Bob Kee and all the students who participated in the 2009 and 2010 field seasons. The archaeological fieldwork could not have been carried out without the help and support of the many residents of Arivaca, including Fern Robinson, Penny and Steve Shepard, Maggie and Rich Milinovitch, Danny McGuire, Shaun Quintero, Ronnie, Uncle Jojo and everyone at the La Gitana Cantina. The ethnographic fieldwork could not have been carried out without the support of Doña Hilda and Don Paco Loureido at the Albergue Juan Bosco migrant shelter in Nogales. I am indebted to my friends Chapo, Chava, Eric, Polo, Fernando and Panchito, who introduced me to La Linea and whose stories are interwoven into this narrative. This article greatly benefited from the feedback of several people, including some insightful conversations with John O’Shea and Henry Wright about depositional patterns and use wear. I want to thank Webb Keane for bringing the Stallybrass reference to my attention. Michael Lempert provided important feedback on an early version of this article. Ken Hirth, David Webster and George Milner commented on a version of this article that was presented at the 2012 Society for American Archaeology Meetings. I also want to thank Anna Antoniou, Christina Perry Sampson, Christine Sargent and Travis Williams who read a draft of this manuscript as part of a graduate seminar taught at the University of Michigan. I wish to thank the anonymous reviewers whose insightful comments and critiques significantly improved the quality and coherence of this piece. Any omissions or errors are solely the fault of the author. Finally, this work would not have been possible without the help and trust of the many people I have met along the border who have graciously shared their powerful stories with me. Although I cannot name them here, I have tried to repay their generosity by doing my best to accurately document what they experience on a daily basis. I dedicate this work to the memory of my friend Netchy, whose humor and kind spirit brought joy to many in a place of much sorrow. You are missed.

Funding
Parts of this research were funded by the National Science Foundation (award #0939554), the University of Washington’s Royalty Research Fund and the University of Michigan.
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De León J, Gokee C and Schubert A (nd) ‘Show me your papers’: Citizenship, materiality, and contested identities along the U.S.–Mexico border. Article manuscript under review.


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