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How Blue Jeans Went Green: Denim Shoddy and the Recycling of Values

As O'Brien has recently argued in his call for a more sociological sociology of waste, "to imagine waste...is to imagine the world in which it is produced. It is to invoke a moral and sociological assessment of personal worth, social organization and societal development" (O'Brien 2008: 171) that encompass practices of disposal. Or, as he puts it, it invariably involves a judgment about the "health" of a society at large. This is no less true when it comes to imagining recycling. If, as O'Brien suggests, the contemporary world is perceived to experience or suffer from a crisis of waste, then the transformation of post-consumer waste into a useable form almost by definition prompts the mirror image of such a crisis, engendering imaginaries of renewal, redemption, and individual and societal aspiration and success. The case study presented in this paper – the so-called denim drive – is an illustration of the way in which the handling/transformation of post-consumer material excess in a sense is productive of a particular worldview. After describing the drive in some detail I will address its socio-cultural, political economic and technical and material aspects in order to illustrate the complexity and multitude of ways in which this worldview is produced and sustained.

In 2005 Cotton Inc., the American cotton growers' and exporters' interest organization, launched their "Cotton's Dirty Laundry Tour". Part of a \$27 million ad and promotion push it intended to sow loyalty among young consumers by positioning cotton as a versatile, easy-care option that is ideally suited for the demand of young American college students. Organized as one-day campus events at 14 colleges across the country, and spiced up with music, fashion shows and games, the tour provided basic information and activities about cotton garments and their care to American youngsters who, according to the organizers, "may be doing their own laundry for the first time in their lives.

The tour was repeated in 2006, 2007 and 2008, the number of campuses visited and jeans collected increasing each year, and is scheduled for 2009 as well. But since 2006 it has included an additional campaign under the trademark name of "Cotton. From Blue to Green." Also known as the "denim drive" the idea of the campaign was simple: students were asked to donate a pair of old jeans to the campaign and in return are given a five dollar discount voucher that can be used in local participating clothes stores when purchasing a new pair of jeans. The 14,000 pairs of jeans collected in the campaign were subsequently turned into Ultra Touch, a so-called eco-friendly insulation material and sent to the Baton Rouge branch of Habitat for Humanity, a Christian charity organization, who used the insulation in the construction of houses for families whose homes were destroyed by the hurricane Katrina in 2005. Through this campaign Cotton Inc., according to a press release, showed its commitment to the environment by "producing and participating in...special projects that communicate the importance of minimizing harm on the environmental footprint by being natural, sustainable, responsible and renewable." By creating this opportunity for college students to donate their jeans, a representative explained, the denim drive "shows students the benefits of a natural,

renewable fabric as well as how easy it is to do something for the environment and contribute their own bit.”

In 2008 the denim expanded to include retail partnerships. On April 8th 2008, veteran retailer national Jean Company and Earnest Sewn hosted a fashion show in New York – admission granted to those who donated a pair of jeans at the entrance – to mark their Make and Earnest Difference five day charity denim drive in National Jean Company’s New York stores, inviting jeans donations from customers who in return received a 20% discount coupon toward any new pair of jeans at National Jean Company. The campaign culminated with in-store events at National Jean Company’s Long Island and Manhattan locations – described as a “further incentive to drive in-store denim donations and awareness of the Cotton. From Blue to Green denim drive initiative” – on the following weekend where fashion experts and celebrities offered advice and played judge for various fashion games for customers hoping to win a national Jean Company gift cards. The retailer partnership also included Guess by Marciano, another well-known jeans etc. company that, throughout April 2008 gave a 10% discount towards the purchase of new jeans to all customers donating a piece of old denim at any of the store locations. Guess by Marciano’s campaign to help meet its goal of 5000 donated pieces of denim, according to a spokesperson for Guess, “symbolizes our commitment to the people and groups we interact with...it illustrates the Guess by Marciano brand’s true DNA as being more than just about fashion.”

As concerns over the future and state of the environment have increased over the last many years, so have corporation’s need to maintain a good public reputation – and demonstrating environmental concerns is a popular way of nurturing such a reputation. I’ll return to this later on but for now – keeping in mind O’Brien’s... I want to briefly mention the cultural im-

aginary – and to point out what seems to me to be quintessentially American aspects (besides the strategic philanthropy of CI) – of the denim drive. Firstly, it is quite tempting to point to the ritual connotations of the drive – the fact that it takes place every year for one thing, but perhaps also for the way in which the recycling or actual material conversion/transformation of jeans that are turned into ultra touch that does take place is – is supplemented or dramatized in the drives by the conversions of old jeans for new jeans, i.e. when students hand in one pair they get another – in a sense articulating a different cosmological notion of recycling in which consumption is positing as the natural fundamental cycle of life. Equally interesting is the format chosen for the drive. I haven't found anyone writing about this – they mainly write about corporate philanthropy – but having lived in the US for a number of years I have always been struck by the way in which charity and leisure often coalesce in e.g. bike races for charity (always with t-shirts). In this case, charity is not simply for the homeless victims of Katrina but also “for the environment,” being anthropomorphized in a sense, but also struggling to convey how a particular worldview is being recycling in this process (how the donation and transformation of denim materialized and sustained a particular worldview – so many different strands of American society and culture come together here).

However, I'm equally interested in the way in which the material propensities of the garment in question sustains this worldview. Research on cotton fiber products in the social sciences tends to focus on its applications as cloth and clothing, and the sociological significance of clothing is conventionally seen as inhering in/belonging to the semiotic messages transmitted by clothing or their embodiment of subjectivity and social and cultural values. However, from an engineering point of view cotton fiber is a material with a number of properties, giving it potential, as I shall discuss further below, for a number of applications that are not li-

mitted to (conventional) textile production that are equally capable of facilitating and sustaining socio-cultural processes.

The main constituent of cotton and other vegetable fibers is cellulose, a polymer, or macromolecule, (one more sentence on its chain-like character). It is the particular arrangement of these polymers into long chains in a fiber that determine its chemical, physical and mechanical properties such as strength, elongation and absorbance. A fundamental property of cotton fiber (and other vegetable fibers as well as the protein fibers wool and silk) for textile applications is that these fibers have sufficient length, strength and flexibility to be turned into yarn, which, broadly speaking, is an assembly of fibers twisted or otherwise held together in a continuous strand. To give an example, like rayon, a manufactured cellulose fiber, cotton has excellent absorbing qualities and is commonly used in the fabrication of disposable care items such as baby diapers, cotton tips, tampons, paper towels and facial wipes.

When a garment ceases to have use value for a consumer and is discarded, and when garment production generates large quantities of trimmings and clippings with no utility for production, and thus are classified as waste, from an engineering point of view such discarded items remain a fibrous material and therefore have potential for further applications. Cost is often paramount to these applications. Although the range of applications are limited by the fact that the fiber have been used for clothing, they often constitute a cheaper material than virgin cotton fiber and therefore are valuable in cases where the novelty of the fiber is not crucial. The best-known use of castoff clothing is of course its use as second-hand clothing. Alternatively, when garments are unsuited for continued use as clothing their absorbing qualities can be capitalized upon by cutting them into smaller patches of fabric and selling them as industrial wipes, where utility and cost, rather than aesthetic considerations, are paramount.

In other cases, such as with pre-consumer waste which often consists of clippings whose shape and size make them unsuited as wipes, the unleashing of its economic and material potential often involves returning them to their original fibrous state. The fabrics are subjected to the action of disintegrating machines which pull the rags apart and break them up more by a tearing and shredding operation than by cutting, following by a succession of garnet machines of increasing fineness whereby the threads that composed the original textile are unraveled into their constituent fibers. This process, however, compromises the mechanical properties of the fiber making it unsuited for yarn production unless it is mixed with other fibers and at least in the US means that they are used for applications exploiting a variety of cotton fibers' other properties. Such applications include stuffing in mattresses and pillows, carpet underlay, floor padding and geotextiles. Many of these applications involve processing the reclaimed fiber into a so-called nonwoven, that is sheets, webs or bats of fibers that are bonded to each other by other means than knitting or weaving. These means of bonding include adding an adhesive such as resin, fusing fibers thermally or chemically or by stitching them. Similar to woven textiles, different fibers can be mixed, and the material can be given chemical treatments, to tailor particular qualities of the final product. They can be produced as roll goods and, as is often the case in the automotive industry, they can be produced in large moulds designed for their particular application as for example insulation in a car door.

Despite the importance of the properties of the particular fiber and the technological possibilities for tailoring them to particular ends, however, the possible applications clearly emerge within a socio-economic context, encompassing social values, supply and demand, and national and international legislation. In other words, while the selection of fibers to a considerable degree determines the properties of the final nonwoven product, they are se-

lected according to customer requirements, costs, and other factors. Wool, for example – because of its natural fire-resistant qualities – has received new interest and higher prices as stuffing as European flammability legislation for upholstered furnishings and protective clothing has demanded higher wool content. By the same token, the utility of reclaimed cotton fiber in various applications has changed continuously. For a while, cotton was a common content in carpet underlay and door panels, but went out of fashion after 1973 due to rising oil prices. The incentive created by rising gas prices prompted manufacturers to reduce the weight of vehicles. Synthetic materials thus became a cheaper option, and as the nonwoven industry in the US has made a number of technological advances they have been able to deliver highly specified nonwovens in a speedy, cost-efficient, and tailor-made manner, once again favoring synthetics over cotton for these applications. However, as the cost of landfill and the concern with environmental implications (and recycling) are rising, so are concerns to find biodegradable and recycled solutions in the automotive industry. One important reason for carpet underlay etc. is its sound-absorbing properties: noise inside passenger compartments can be reduced by attaching sound-absorbing materials to various components such as floor-coverings, package trays, door panels, headliners and trunk liners. One recent development has been the research into floor coverings using natural fiber nonwovens, among them waste cotton, whose acoustical absorption properties/performance are at par with existing products, but that are bio-degradable and therefore more environmentally benign (Parikh, Chen, and Sun 2006).

Okay, so having now explained a bit the properties and engineering potential of cotton fiber and pointed to the importance of socio-economic factors for these, I'm going to talk about Ultra Touch, the insulation material made out of the jeans that are collected in the Cotton Incorporated's denim drives. Ultra Touch is an insulation material made and patented by

Bonded Logic in Chandler, Arizona. The company produced a variety of fire retardant cotton fiber products for the OEM (Original Equipment Manufacturer) market. Bonded Logic supplies a wide variety of industries including automotive, appliance, acoustic and HVAC (Heating, Ventilation and Air Conditioning).

Ultra Touch is an (non-woven) insulation material that is made with 85% reclaimed cotton, often in the form of denim, mainly pre-consumer waste from the Mexican blue jeans industry that is processed by an independent American gartner prior to its manufacture at Bonded Logic's plant in Chandler, Arizona. The reclaimed cotton fiber is subject to a treatment process that treats each fiber with a fireproofing solution (borate - a natural biostat that also inhibits mold, mildew, bacteria and fungal growth and works as a pest inhibitor). The fibrous material is then mixed with polyolefin fibers (one of the major - but relatively unknown - synthetic fibers) which, when the mixture is heated, melts and bonds it together as a bat. The material is then extruded for the engineered density and thickness (by carding it into a web) prescribed by the so-called R-value, a measurement expressing its insulation properties as its ability to resist heat flow/to slow down the flow of heat (the higher the value the better thermal resistance).

For most (if not all) conventional insulation materials for building construction (such as fiberglass or cellulose foam (??)) it is actually the air trapped within the material by the fibers that is the primary insulation, and the goal in designing (and installing) insulation materials is to keep air as still as possible. Consequently, it is the amount of still air that can be trapped amongst the fibers that determines the effectiveness of an insulation material.

While Ultra Touch has the same thermal qualities as conventional insulation material, as well as superior acoustical qualities, it is 30 to 50 % more expensive than such conventional materials. As in the case with cotton insulation for automobiles, the key to its utility is found in the growing environmental concerns in the US and elsewhere. While there is a general concern with using renewable and sustainable materials in constructing, there are also persistent rumors that fiberglass manufacturers are aware of, but also choosing to put a lid on, in-house research documenting their product's carcinogenic effects (it contains formaldehyde and other toxic elements believed to trigger asthma and allergies). While such concerns are shared by a growing number of individual consumers, prompting them to purchase "greener" if more expensive products, the growing emphasis on public reputation among institutions and corporations has also meant that a number of these very deliberately are using eco-friendly building materials in the construction of new buildings and promoting themselves as therefore environmentally concerned. To give but a few examples, A growing number of American colleges are now using their environmental awareness as a way of attracting incoming students, and in 2005 Lewis and Clark College – a private liberal arts college (?) in Portland, Oregon – used Ultra Touch insulation, among a number of other eco-friendly building materials, for its new top-of-the-pop social science building as did University of Texas School of Nursing and Student Community Center. A perhaps more interestingly example because of the product they sell is the Organic Valley headquarters in Wisconsin and insulated with Ultra Touch, which they advertise as showing their commitment to the environment across the line or beyond organic dairy. And Hackensack University Medical Center made sure to include in its press release announcing the construction of its new Women's and Children pavilion that it was made with blue jeans insulation, demonstrating their holistic approach to health care.

Cotton Incorporated's use of Ultra Touch to align their reputation with environmental concerns reflects similar concerns. One press release related to the drive explains – in passing – that in-house consumer research had showed that many of their consumers were keen to do something for the environment, but were unsure how to do so (uniquely desirable qualities – quality, comfort, value). And while the way in which they chose to align themselves with green concerns is far more creative – and perhaps efficacious – than the companies I just mentioned, the denim drive is also much in line with the promotional efforts that have characterized the organization from its very beginning in the 1970s. Thus, the emphasis on cotton as natural lies in direct extension of Cotton Incorporated's concerted/deliberate marketing effort to build a market for cotton by emphasizing its uniquely desirable qualities which until recently were comfort, quality and value and aligning them with sentimental qualities as well. In fact, jeans have always been a major target for these efforts as Cotton Incorporated has identified the continued popularity of jeans as crucial to securing a demand for cotton. According to research, the average American owns nine pairs of jeans, and – coming back to the point about cotton embodying central values – another bit of Cotton Incorporated in-house research showed that two out of three women felt most comfortable about themselves when wearing jeans. Thus, aligning one's product with environmental values through the interactive spectacles of the denim drive could be said to be highly successful achievement. Firstly, with nine pairs of jeans in the closet most people will have a pair to spare. Secondly, the association of the material qualities of jeans with important values such as quality and comfort etc. makes jeans the ideal garment to give away, in a sense a garment with a number of connotations that fit very neatly with a cosmology of recycling.

But there are is another fascinating aspect of the materiality of the fibrous phenomenon that account for the success/existence of these campaigns and that are directly linked to the material properties of denim.

As mentioned earlier on, the “trick” of insulation material is trapping air within the non-woven bat. A crucial property of the fiber for doing this is the length and the fineness of the fiber, allowing them to form interconnected loops and curls that will trap the air. This prerequisite favors the use of denim and other fabrics with a relatively small number of rather tightly twisted fibers in their yarns. Additionally, extracting the fibers of such coarser and less twisted yarns is less costly than is the case with yarns with more and finer fibers in their cross-section.

Denim isn't is the only fabric containing fibers with these qualities. Many wool fibers, for example, have similar qualities, and so do a number of the cotton fibers in other fabrics. But whereas 40% of the world production of fibers is cotton, as opposed to a mere 3% wool, supplies of cotton waste are larger and cheaper (need reference). Moreover, the need to control very specific properties in order to engineer the necessary properties of the insulation material favors the use of reclaimed fiber material with very similar qualities, a fact that favors using only one type of fabric waste and, consequently, favoring a fabric for which supplies are readily available in large enough quantities. Denim waste fits these criteria perfectly. Not only does the garment's popularity mean that a staggering number of jeans are produced annually, there is also currently a large number of jeans manufacturers in Mesoamerica, some of them producing more than 20.000 pairs of jeans a day, minimize transportation costs.

Right, to sum up briefly, as I think I'm running out of time, the denim drive – this ritual of jeans for charity – is remarkable for the way in which practices of disposal and divestment merge with and sustain normative ideas of individual affection and compassion as well as cultural ideas about the nature of environmental and cosmological well-being. An undeniable political economic component of the denim drive is of course the concerns of businesses such as Cotton Incorporated and others to retain their commercial success. Their successful self-alignment with environmental well-being, however, are equally sustained by the material propensities of the fibrous phenomenon in question. While the already existing environmental awareness sustained a market for Ultra Touch and thus provided a medium for a highly success campaign, the actual properties of cotton fiber is what enabled the product in the first place. But, ironically, the popularity of denim, the multivalence of its embodied meanings also ensures the necessary quantities of denim that sustains the production of Ultra touch.

Thus, as O'Brien suggests, to engage with issues of waste – and recycling as I suggested – inevitably involves fleshing out the complex, inter-connected ways in which material propensities, cultural values, technology and political economic factors merge in practices of disposal and divestment.

References

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