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# Laundry routine and resource consumption in Australia

## **Abstract**

Inconspicuous consumption, the habitual use of resources in daily routines, poses a challenge to achieving sustainable consumption. For example laundry is often the most environmentally demanding stage of clothing's life cycle, consuming significant quantities of water, energy and chemicals. Laundry thus provides a prime example of routine everyday consumption, from which to consider sustainability transitions.

This paper presents the results from surveying 263 Australians about their jeans, laundry habits and resource consumption, to build a picture of the expectations and actions surrounding the performance of cleanliness in everyday life. These surveys are triangulated against in-depth interviews with people who had not washed their jeans for three months revealing qualitative insights into influences of laundry practice. This paper documents how and why people perform laundry. An interesting finding is that people can not-wash and still be socially acceptable, suggesting that cleanliness is a cultural construct, the pursuit of which wastes water, energy and chemicals.

## **Key words**

Australia, cleanliness, consumption, dirt, everyday, inconspicuous consumption, laundry, practices, routine, sustainability

## Introduction

The way people use clothes has a significant environmental impact, consuming water, energy and chemicals. There is mounting consensus that laundering is responsible for the majority of environmental impacts over the life cycle of a garment (Laursen et al., 2007; Rigby, 2010; Fletcher, 2008; Allwood et al., 2006; Laitala et al., 2011). Resource intensity of garment maintenance arises from water used in washing, energy needed to power machines and chemicals used to remove soils and stains. "Maintenance is often the most energy-demanding stage during clothing's' lifecycle" (Laitala et al., 2012: 228) and depending on garment up to 82% of energy use and 66% of solid waste and over half of the emissions to air (83% carbon dioxide) stem from washing and drying (Fletcher, 2008: 78). Laundering is also responsible for a large portion of domestic water consumption, 21% in the USA and 12% in the UK (Shove, 2003a: 117). Research from Ireland also finds that personal washing routines are the most water intensive household activity (Doyle and Davies, 2012). Though physicality of clothing has some bearing on the way it will be maintained, even if a garment does not have visible dirt or perceptible odour it is likely to be washed regardless, due to structural factors that shape user habit and routine. Not only the environmental impact of laundry, but also the limited understanding of how and why people maintain clothes in certain ways needs further exploration.

A historical exploration of cleanliness practices show that expectations have varied considerably. Laundry is influenced by accepted conventions of cleanliness; as such understanding cleanliness is critical in understanding the environmental impact associated with laundry practices. Concepts and practices of cleanliness have changed across time and culture and are implicated in notions of moral and social hierarchies (Shove, 2003a). Standards of cleanliness are not based on health and science, but rather on cultural conventions. The current convention of daily washing has only emerged since the late 1800's, accelerating rapidly since the 1950's to the current resource intensive standards of today (Shove, 2003a; Vigarello, 1988; Ashenburg, 2007; Douglas, 1999).

There is quite some research that suggests that technological improvements are reducing the water, energy and chemical consumption required to achieve 'cleanliness' see (Easter, 2007; Klepp, 2003; Hustvedt et al., 2012). Innovations in washing machines and detergents are reducing the total environmental impact per wash (Laitala et al., 2011). Yet even the most advanced washing systems are constrained by the humans who use them, thus understanding the context of routines and expectations of the people who perform laundry holds potential to radically reduce resource consumption. Shove and Pink both suggest that people perform laundry because of "conviction" rather than any rational reason (Pink, 2005: 279; Shove, 2003a: 150). Within the International Journal of Consumer Studies community there have been repeated calls for further research into everyday practices of consumption: "Further information regarding consumer clothing maintenance habits and the reasons for their choices is required in order to study the possibilities for influencing consumer behaviour towards more sustainable practices."(Laitala et al., 2012: 229). And "further research is needed in order to assist exploring routine

practices and their chances as well as obstructions for sustainable development in more detail.” (Wahlen, 2011: 512). Exploring resource consumption through laundering, could shine new and useful insights into unsustainable consumption patterns.

This aim of this paper is not to provide an extensive review of historical laundry innovations, this has been thoroughly examined by previous sustainable consumption researchers, notably Shove 2003 and Laitala et. al. 2012. Rather, this paper aims to contribute to sustainable consumption discourse by providing new empirical research into laundry routines in Australia, and also exploring some of the qualitative reasons that motivate consumer laundry practices. This multi-level data set includes both a survey of laundering habits in Australia, and thirty in-depth interviews with Australians who have reduced laundry practices. This paper also documents a range of alternative laundry practices that are prolific in everyday life, but have not yet been captured by the academy, for example not washing bra's, freezing jeans, and alternating wearing days to give the impression of washing between wears. The combined data set provides an honest and original account of laundry routines, potentially valuable in considering reducing resource consumption in everyday life.

## Methods

This paper is based on research completed during a Master of Philosophy thesis at The University of Melbourne. To contribute some understanding of how people perform laundry routines, both statistical and interpretive data on laundering was gathered with the aim of documenting cleanliness expectations and how everyday people act to address these expectations. To narrow the scope of the study jeans were chosen as a case study garment. Denim jeans are an inclusive garment; international and intergenerational (Miller, 2010), and are already on the cusp of social acceptance for not washing, due to denim aficionado culture e.g. Nudie Jeans (Nudie, 2008).

To document how laundry is performed, two hundred and sixty-three jean wearing people were surveyed during August 2011 in well-known Melbourne destination, Federation Square. The survey contained multiple-choice questions and Likert scales, gathering information within predetermined confines. The sample of respondents was concentrated in Melbourne with some respondents from other Australian cities. 55.4% of respondents were males while 44.6% were female. 7.0% of respondents were aged under 18, 50.4% were 18-30, 26.0% were 31-45, 14.7% were 46-65 and 1.9% were aged over 65. The median household size was 2.9 people with a standard deviation of 1.5. Further statistical data was also gathered from an on-line newspaper article about the research, where readers were asked to vote on whether or not they would wear jeans for three months without washing them. Surveys do not provide completely objective information: respondents tend to give 'desirable' answers rather than truthful ones, and a similar study in Norway found that respondents tend to under-estimate the frequency of their laundry (Klepp, 2003). Notwithstanding the imperfect nature of the survey instrument, the data gathered provides an easily accessible snapshot into current laundry behaviour.

Data was also gathered from a Melbourne style blog. Over the course of a year sustainable fashion blogger,

Lara McPherson, photographed nineteen local fashion identities and interviewed them about their outfits (McPherson, 2011). One of the questions in the interview asked how often respondents washed their clothes. McPherson collated the results in an article published in October 2011, including general observations and direct (anonymous) quotes. Comments from other web articles on washing jeans are also included. Jeans washing is often implicated in clothes laundering practice so the two are discussed together in this paper: jeans are used to build some inferences on laundry and cleanliness expectations and practices.

This documentation of laundry practice lead to questions about *why* laundry is performed in certain ways, a question which is explored through interviews with thirty-one people about their washing routines. To heighten awareness of cleanliness conventions, participants were asked to wear the same pair of jeans for at least five days a week during a three-month period without washing them. This research was carried out under approval and supervision from The University of Melbourne Ethics Committee. The participant group was selected from seventy-nine potential participants who were attracted through the author's social media network. The purposeful sample included fifteen females, sixteen males, the youngest being eighteen, the oldest fifty-six and the average age was thirty-one, the author also joined the study. Respondents are referred to using pseudonyms to protect their privacy. At the commencement of the study participants were provided with a new pair of jeans at a one-hour briefing session, where the researcher presented the background to the study as well as some ideas about sustainable consumption and denim styling. During the three-month study respondents shared their experience via a private facebook group. At the conclusion of the study participants were interviewed using an unstructured in-depth style (Minichiello et al., 2008). Transcripts were coded in NVivo qualitative data software to allow themes to emerge. The data shows the way that respondent were able to reflect on their laundry practices, and experience of adopting alternative ways-of-doing. It also gives some indication of the way that laundry habits change, providing insights into how laundry habits form, persist, propagate and desist. This provides interesting foundation from which to explore why people perform laundry in the ways that they do.

The aim of this paper is to share this data with the sustainable consumption research network, by providing a snapshot into laundry practice in Australia, and make some initial speculations into reasons for washing with implications for other routinised consumption practices.

### **Results: How people wash**

Laundry practice is discussed using information from the surveys, interviews and blog posts. Statistics from the surveys provide a general idea of *how* people perform laundry, the participant interviews provide deeper insight into *why* people perform laundry. Less tangible aspects surrounding laundry practice emerged from the data including reasons, influences and the way that people make sense of laundry.

### Current practice

Currently laundry is a frequent activity. British washing machines are used two-hundred and seventy-four times per year, and three-hundred and ninety-two times per year in the USA (Shove, 2003a: 117).

Domestic laundry accounts for 21% of American domestic water use and 12% of domestic water use in the UK (ibid). The surveys in this study revealed that Australian households did an average of 2.5 loads of washing per week, 15% did one load, 21% did two loads, 22% three loads, 17% four loads and 25% did five or more loads of laundry per week, see figure 1. The relationship between loads of washing per household and number of persons in household was not significant with a 0.37 correlation, some big households washed infrequently, while some small households did many loads of washing.

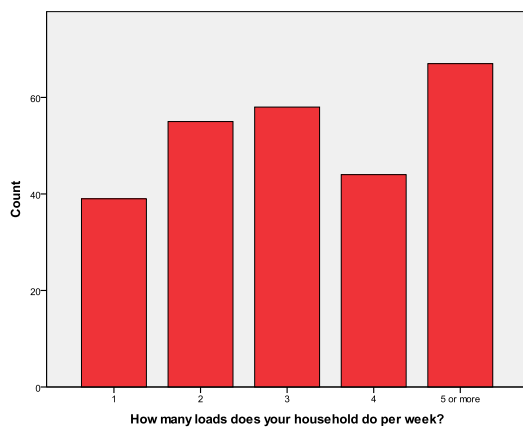


Figure 1

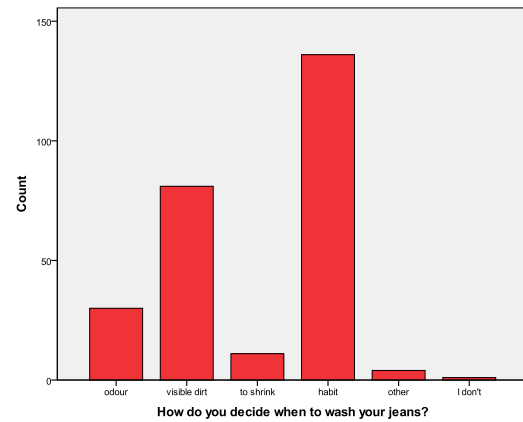


Figure 2

In deciding when to wash, respondents cited habit as the major precipitator (52%), with 31% citing visible dirt, 11% odour, 4% to shrink, 1% other and 1% did not wash, see figure 2. Washing temperature was mainly cold, 56% of respondents washing cold (0-30°C), 30% warm washed (30-60°C), only 1% at hot (over 60°C), and the other 12% weren't sure what temperature they washed at, see figure 3. Most respondents (64%) line dried, 18% tumble dried and 17% dried on a wire rack, 1% did not wash jeans, see figure 4. The 'average' Australian jeans, as revealed in the survey, were cold washed and line dried.

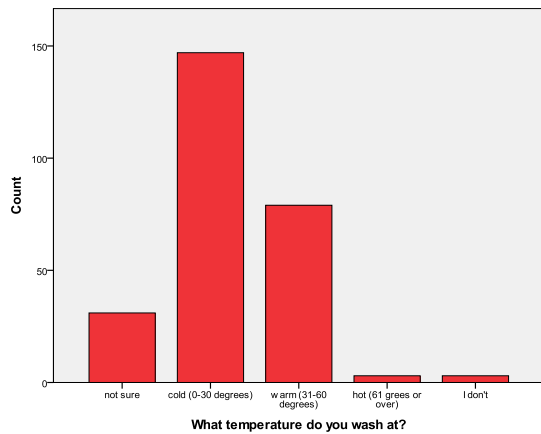


Figure 3

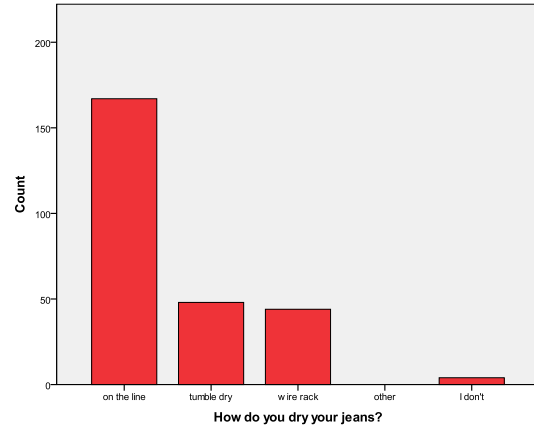


Figure 4

Nearly half (45%) of the Australian everyday people surveyed washed their jeans every 2-3 wears, 29% washed them every 4-10 wears, 14% more than 10 wears, see figure 5. Only 11% washed their jeans every wear, and only 1% never washed their jeans. Most (96%) of respondents washed their jeans in a machine, 2% washed by hand, 1% dry-cleaned and 1% did not wash jeans, see figure 6. When washing by machine 6% washed only jeans, 5% small load, 35% medium load and most people (51%) reported washing full loads, see figure 7. Weight in kg was included in the questionnaire to guide responses to 'small' (up to 1kg) 'medium' (1-4kg) or 'full' (4-8kg).

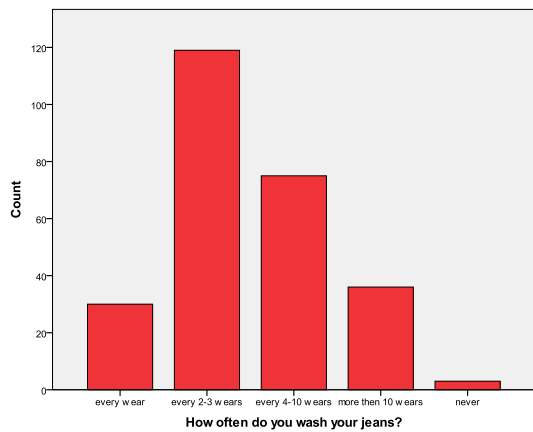


Figure 5

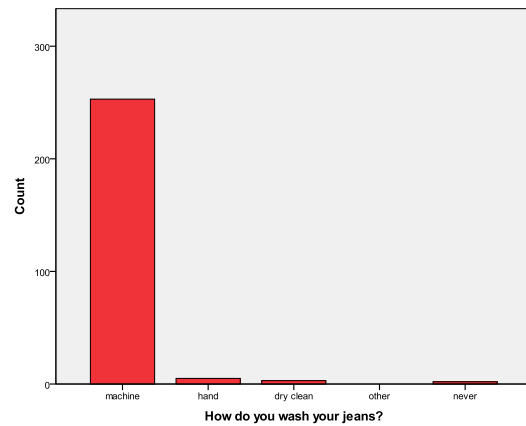


Figure 6

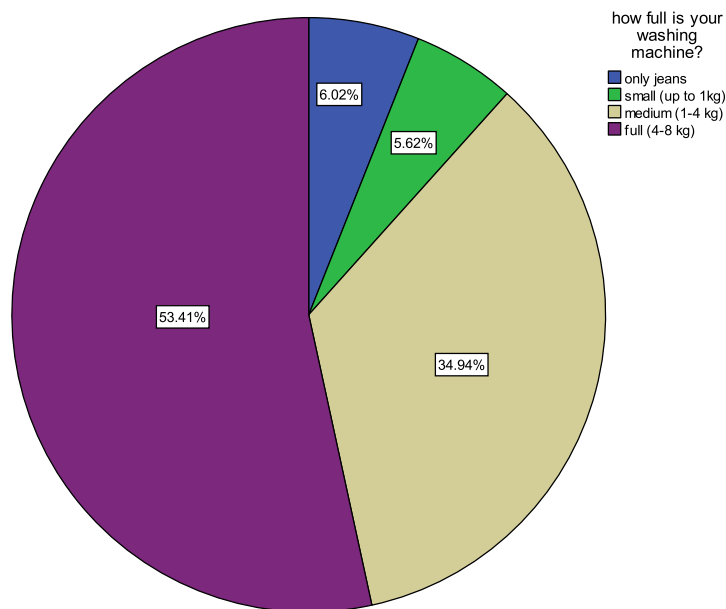


Figure 7

There is variety in jean washing frequency, usually precipitated by either routine and/or running out of clothes. Some people washed frequently, a comment from the Web Article 'How to Freeze Your Jeans': "I am the kind of person who washes everything and anything after wearing it once even if I only wore it for a couple hours." Some people washed infrequently, from McPherson "Depending on fabric and item, I don't wash anything (besides my undies!) more than once in two weeks. I try to air everything as much as possible."

Many people washed in a combination of routine cycles and on a per need basis. Brenton "Three times a week I wash, just a little bit." Alexandra "My normal washing habits would basically be washing everything once a week." Leonie "We're on a fortnightly cycle here, which is how long it generally takes two of us to fill the laundry basket and/or run out of underwear." The alternative approach was doing laundry when needed. Emily "once I run out of underwear I do laundry." Simon "when I've run out of undies, which I definitely only wear once, then I may as well do everything else as well. I'll never do a small load in the washing machine, it's always a large load."

People do not wash every wear. Many of the comments on the internet illustrated that respondents washed less frequently than once per wear, which supported findings from interviews in this study. Some of the comments broke wash frequencies down to garment type, showing that inner items are washed more frequently than outer items. "Tops two full day wears, jeans when they become lose and soft, bottoms (pants and skirts) generally five full day wears, dry clean only items generally get dry-cleaned once a year." There were big differences in washing frequencies for different garments, from McPherson "Undies – every wear! T-shirts etc – probably every third wear. Everything else, probably five to ten wears



depending what it is." Bre "my jumper gets washed maybe once per winter, my bra I'll wear maybe four days before I wash it and a top maybe a couple of times, undies every wash." Ted "Things that come into contact with skin I tend to wash more." From McPherson "Depending on fabric and item. I don't wash anything (besides my undies!) more than once in two weeks. I try to air everything as much as possible." "three or four wears." "Skirts: usually after three wears. I have a lot of pleated skirts so I dread having to hand-wash them each time! Tops: one-two wears (in the washing machine unless made out of silk). Coats: once a year (dry clean). I own one pair of jeans which I wash in the washing machine every few months." "I wash most of my clothes every 3 to 4 wears. I have only washed my grey top (it's wool) once, by hand, and have worn this maybe thirty times. I have washed my cardigan twice, with a machine, and have worn it approximately thirty-five times. Jeans, every six weeks or so, machine wash." There was some indication that people could use their discretion when deciding to wash: "One if they're wiffy, or ten times if it still smells fresh." "About three times unless it's been hot or I have dropped food on them." "I wash my clothes when they're dirty or smelly. Which is not all that often." "I generally will wear things three to five times before washing them." Australians not washing every wear resonates with Uitdenbogerd et al.'s finding that the average Dutch garment is worn for between 2.4 and 3.1 days between washings (Fletcher, 2008: 76). Given the variety of frequencies of laundering, the general consensus from these wardrobe insights, is that washing is performed when needed, not necessarily every wear: inner layers are washed more frequently than outer layers.

There was a strong preference for doing full loads of laundry, this was evident in the interviews and also the survey where 51% of respondents reported washing full loads. Responses from the interviews gave some insights into the preference for full loads. Bre "If it's not a full load I won't do it unless I really need to use the clothes." Jonathon "I hate doing half loads, usually you can find a few things, or towels and add them in." Luke "I would never do a small load of washing." Simon "I'll never do a small load in the washing machine, it's always a large load." The strong preference for full loads may reflect public education campaigns on saving water (for which Australia is renowned), or perhaps washing full loads is reported as it is a desired behaviour, and at the intersection of convenience and sustainability.

### **Alternative practice**

Interviews in this study revealed a variety of ways to keep jeans fresh without traditional laundering, using less water, energy and chemicals. Alternative practices can be used at different stages, responding to different situations, and alternative techniques were used simultaneously.

One approach well documented on internet chat forums is freezing jeans. This purportedly kills bacteria, although there are also comments to the effect that freezing only temporarily suspends bacteria. Claire "I've occasionally put them in the freezer." From the group forum "I've tried the freezer thing with a pair of

jeans that I didn't wash and I thought it almost gave them the smell, you've gotta dry them out, that's my theory." Comment on How to Freeze your Jeans "The freezer does not kill bacteria, it puts into dormancy, washing gets rid of bacteria!" Comment on How to Freeze your Jeans "Sweat is salty, skin has oils on it (and I have dry skin), oils attract dirt. Freezing isn't going to break down the oils." The reason for the prolific discussion of jean freezing was not evident (there are hundreds of comments on freezing), but the majority agrees that freezing jeans is not effective. Freezing also consumes energy, which is contrary to the aims of sustainable consumption.

One of the most favourably reviewed alternative practices was airing the jeans, there was near consensus that this was the best method for keeping jeans fresh. Web comment "leaving them inside out in direct sunlight for a few hours takes care of it every time." Bill "I aired them and I was surprised that airing really works really well, it's a wonderful cleaning tool, air." Brenton "I hung them up on my chair every night so they got aired." Lotty "my jeans have had a few mornings in the sun and are feeling very clean and nice." Emily "I aired them quite a lot." Morgen "I was airing mine out every night." Jenny "Every time they got a bit smelly I'd turn them inside out and put them in the sun for a day and they were fine." Luke "I hang them up by the belt loop on the back, sometimes inside out, if I think it needs it at night. If you fold it up and put it away in the cupboard any smells get worse, but if you air them out they get better." Nicky "Airing, airing and more airing, in the night, out the back, making sure they got a real breeze through, because the smell dissipated." Airing is a simple energy and water efficient technique that received positive reviews as an alternative low resource laundering technique.

Applying substances to the jeans can help to freshen them; talcum powder, tee tree oil, perfume, and vinegar were seen to combat odour. Alexandra "I would just spray a little bit of perfume on them." Julianne "I'd hang them inside out and spray the crotch with vinegar." Emily O "I poured bicarb-soda all over them then put them in the freezer and it [a stain] totally came out, I don't know why." Lotty "I sprinkled the inside with tee tree oil which made me feel cleaner." Lotty "Tried sprinkling the inside of my jeans with talcum powder, but this just made me feel (and smell) like a granny." There was no clearly favoured application of substance; it was more of an unrepeated, novelty approach.

Stains on jeans come and go. Some participants left stains there, or scratched them off with fingernails, and others purposefully cleaned spills. Spot cleaning strategies depend somewhat on the type and severity of the stain. Liss "I finally got most of the gum off my jeans using eucalyptus oil. It worked well." Michelle removed a paint stain with a butterknife "I had a butter knife and I started scraping it and it came off fine, it was really easy. It worked like a charm." Bre "When I spot cleaned them I didn't spot clean them with a cloth or anything. I just licked my finger or whatever and just wiped it off, or just brushed it off with my hand." Jeremiah "I was surprised about how the stains disappeared visually. Motor oil and stuff like that. I'm not sure if it just burrowed through to the skin, but it sort of disappeared." The most popular method seemed to be just leaving stains to disappear by themselves.

Dave K was the only participant to wash his jeans during the study, soaking them in bath water. "I got a bucket of water out of the bath I was in and just tossed my jeans in the bucket of bath water over night then dried them on the line the next day... Just soaking them in the water seemed to help a lot. Part of it's psychosomatic." This was on the eve of a new job, Dave K discussed washing as part of the ritual of preparing for it. This aligns with Shove's thoughts that "freshness is in essence a state of mind: knowing things are clean, people feel good about wearing them" (Shove, 2003b: 402). Rather than analyse each garment after wearing to determine if it meets social standards, it is easier to err on the side of caution and wash. Knowing garments have been washed gives a sense of security, giving a wearer heightened social confidence.

Jeans stay clean even when unwashed: wearing the jeans and keeping them active make them acceptable to wear, as long as this fact is not perceptible to others. An "I didn't air my jeans or anything at all." Bre "I was quite surprised that three months down and I haven't done anything at all." Claire "I'd kinda just take off my jeans and put them on the floor, then put them back on the next morning." Erin "I'm not sure if there's something in wearing jeans that makes them less smelly as well. Maybe because they get out more." Jeremiah "Just the wear and the stains and things seemed to fade. A couple of days ago I got them covered in motor oil and two weeks later I wouldn't really see it." Tim "Wearing them every day is in a lot of ways better than folding them up and putting them in a drawer cause they'll sit there and fester. Wearing them around getting fresh air on them is like an air wash." Luke "as long as you keep wearing it, it smells fresh." Steve "Jeans clean themselves as you're wearing them because they're getting constant contact with things." Erin spoke about a new housemate who only did a load of laundry once a month "She barely washes at all, she always looks impeccable and amazing, the dress that she would be wearing would be worn five or six times before she washed." Doing nothing made some participants feel self-conscious about colleagues knowing they continually wore the same jeans, so they alternated the wearing days to give the impression of washing between wears. Bill "I wore them five days per week, Monday, Tuesday, Friday Saturday Sunday, to hide the fact from my work mates." Erin "Eugenes are getting used to the weekly program: Monday on, Tuesday off, Wednesday on, Thursday off, Friday, Saturday, Sunday, on, on, on." Macca "I'm changing them so the people at work see me in different jeans and probably think that I'd washed them." This resonates with Gram-Hansen who found that Danish teenagers who did not wash clothes, alternated days so that their class mates would assume their clothes were washed between wears (Gram-Hanssen, 2007: 19).

By describing current laundry practice, above, the foundation is now laid for considering the influences of practice. Reasons and motivations for washing, as well as reasons for not washing are examined below including survey results and comments from the wearing, aiming to explore *why* people wash.

## Discussion: Why people wash

Reasons to wash, as indicated by the survey were habit (52%), visible dirt (31%), odour (11%), to shrink (4%), 1% other and 1% did not wash (figure 2). Participant interviews provided an opportunity to go beyond these surface level descriptions and explore deeper motivations. Motivations are discussed in four subsections: *physical* reasons, including odour, visible dirt and to shrink them; *habit* routinised ways of doing; *emotional* reasons, including freshening and showing affection; and respect for others, a *self-auditing* process. Respondents commented on the physical reasons easily. Emotional reasons were less obvious to participants, who acknowledged motivators to wash beyond physical dirt or smell, but found these motivators hard to identify or describe. Habit is a complex reason to wash; ritual is an important part of human behaviour, particularly in a multi-cultural secular context which has dispensed with religious rituals. The last reason to wash, respect for others, community censoring and self auditing, is even more complex but potentially very powerful in shaping laundry practice. Reasons not to wash were less complicated than reasons to wash. The three main reasons were *convenience*, *mortality* of clothes, and *preserving* emotional experiences. This discussion section is concluded with an exploration of the influences of laundry.

### *Physical motivators*

Of all the reasons to wash, physical dirt and smell is the most easily comprehensible, and was discussed without much probing during the interviews. Chris "If it's dirty, if it's a stain on a light coloured top or pants or an obvious mark ... then I would be inclined to wash it." Emily "if I've spilled something on them, or got sweaty and dirty in them I'll wash them." Luke "My cue to wash them is if stains get that caked in that I start to look like I'm struggling." Matt "Jeans would get washed more when they are obviously dirty or a bit more stinky, but they don't tend to get stinky anyway." Ted on odour "the clothes need to be washed, cause it starts to smell, even if it's food, not just underarm smells or hair. Any smell." Participants also spoke about washing clothes to restore their shape. Claire "T-shirts and shirts start to hang differently because they're softer. Once you feel that in them I tend to wash them." Comment from the web "Jeans with baggy knees and a baggy butt look dirty and worn." Julianne "a lot of the time I do it as a substitute for ironing. Most of the times I've washed jeans in my life it was because I wanted them to look crisp." Leonie "That's generally when I wash my jeans as well, when they stretch too much." Tim "the only reason I would wash my jeans is to shrink them back down when they get baggy." Washing due to physical reasons visible dirt, odour and shrinking was an easily identifiable reason to wash.

### *Habits*

In the survey 52% of respondents cited habit as the main reason to wash (figure 2), to understand this in more depth respondents were encouraged to reflect on their laundry habits during the interviews. Most interviewees agreed that habit was a significant motivator to wash. Matt "I haven't washed those for a while, maybe I should throw them in the wash, rather than they're dirty or stink." Alexandra "these work pants that I wear to work don't really need to be cleaned, I'm just doing it out of habit." Brenton "It's just a habit that people get into and we don't need to wash them." Tim "people wash them really regularly cause they think they should." On self-reflection participants were able to identify and critique habit as a reason to wash. Simon liked "getting myself out of an irrational habit. I like not doing things just because they're a habit, or culturally the right thing. It's funny that it only takes one piece of clothing to do that. You don't have to reformat everyone's whole cultural system and perceptions from this laying on, you don't have to say 'look at all this logic' and this, because it felt internal. It felt like it was my decision based on the clothes, the piece of clothing that I was wearing." Habits create momentum for washing routines, ingraining resource consumption, but are useful in everyday life, reducing decision-making and conserving effort. The interviews did witness people becoming aware of their own and others' habits and are open to critiquing habits, but it is not yet clear how this moment of reflection could translate back into their everyday lives. Habit is a compelling washing motivator; understanding habit is imprecise, and more discussion of habit is explored in the following sections on influence.

### *Emotional and sensual*

Washing is performed for emotional reasons; to freshen, remove history, prepare for new situations and show affection. Liss "every time I got my period, I just wanted to wash my jeans. It wasn't that I'd got them dirty, afterwards I was just like... mmm... time to be clean." Michelle "I have to admit there is something nice about fresh laundry. I actually like that." Ted "for me what's comforting is picking up fresh towels and smelling the towels they're fluffy clean fresh airy and they have a very nice smell, that's comforting to me." Dave K speaking about washing his jeans before starting a new job said "That really helped to me, made me much more comfortable in my new job." People in relationships and families washed more, Michelle "my mum used to do my washing when I was living at home and there was something nice about her washing it and folding it and giving it to me." There are emotional motivators to wash, but they are less obvious than physical reasons to wash, and differ between people and context.

### *Community censorship*

Respect for others, community censorship and self-auditing emerged as a reason to wash, but these intangible elements were not easy grasp, or to discuss openly. Jonathan "[being dirty and smelly] it's

something that puts others off, it's not considerate." Matt "you're not rude to people verbally, in the same way I don't like the thought my presence would be rude or offensive to other people." Ted "clean is not so much to be hygienic but to be very polite. It's a courtesy." Bre "it's almost a common courtesy, not smell bigger than your... I don't want to sit in a four seater opposite you and be able to smell you." Community censoring is hard to define, and hard for participants to find specific examples of, but seemed to form an underlying motivation to laundry practice.

### *Convenience*

Not washing is convenient: avoiding a mundane chore, saving time and saving money. Alexandra "It wasn't hard not washing, it was great I loved it. It was something you didn't have to worry about." Bre "you're so rarely home, you actually have to schedule your washing." Chris "once you wash them and have to wait for them to dry, you can't wear them for a day." Jenny "My black silk dresses I wear four or five times to save on dry cleaning cause I think it's a waste of money, it's expensive." Liss "Mostly it's laziness." Luke "I really try not to wash things. Also just out of sheer laziness, the hassle of having to separate everything out." Macca "It's probably more laziness than anything else." Tim "I'll always leave it as long as I can, I'm always wearing my clothes as much as I can, it's a laziness thing." Despite laziness usually being seen as a socially undesirable trait, it may be construed as an attractive message when advocating alternate washing practices to the community. However, to arrive at the mindset of not washing and convenience, participants had gone through the process of trialling not washing, a cognitively intense process outside of 'normal' everyday life.

### *Longevity*

Clothes eventually wear out, but washing them less makes them last longer. Luke "I'm of the belief that the more you wash clothes, the more you damage them." Angela "you get a lot more wear out of clothes if you don't wash them as much, it's a longevity thing." Emily O "It wrecks the fabric too, things will get degraded by being laundered." Comment from Web Article "It's better not to wash your jeans after each wear. It takes wear and tear on your jeans. By not washing frequently, you're extending the life of the jeans." Erin "It's going to make things last longer if you don't wash them." Washing clothes is commonly understood to reduce the lifespan of clothes.

### *Preserving emotions*

Some participants did not wash to preserve the feel of, or memories attached to, their clothes. Some thought that clothes were not the same when washed. Some disliked the smell of chemicals, and some

wanted to preserve good memories. Emily A “I hate washing jeans, when you wash them they never come out the same, so with all my jeans I only wash them when the absolutely have to be washed.” Macca “I also don't wash my jeans very often. I like the way they feel after you've worn them for a long time.” Nate “When you wash your jeans they're stiff, so they look better not washing them.” Simon “when you wash clothes they become stiff again and sterilised.” Bill “If I washed them I'd feel like I'd washed away the history, washed away the essence of them.” Erin “You wear them in, you put your heart and soul and sweat to wearing them in then they fit all nice, then you have to wash them again.” These interviewees showed affinity for the tactile and emotional senses of not washed jeans.

### *Influences*

Family was expected to be a strong influence on laundry practice, however it was a very unpredictable indicator: some participants reported washing the same way their parents washed, while others said they were the opposites. Simon “I grew up with mum washing things every week. At the end of the week it was washing time, let's be efficient and wash as many clothes as possible. Once you have that culture beat in you by observation. You don't really question it. You become complacent with it.” Conversely Tim reported washing completely differently from his mother, even to the pegging out of garments. This suggests that people develop their own practices, and that there is some degree of reflexivity in the construction of everyday life routines.

Construction of routine is influenced by a variety of factors across the technical and social domains. Convenience of laundry facilities influences washing practices, the more convenient, the more likely frequent washing is to occur. Bre spoke about the laundry at her college “The laundry was so far away, you just minimised, you had to plan it.” Matt “Now you don't have a laundry day, you have a laundry second... I throw it in the washer and hit the button and things just follow from there.” Convenience also lead to a disassociation from the cleaning practice, Steve “you walk away and you wait for the washing machine to beep, and go back.. It's out of sight out of mind.” Technological advances in laundry systems have lead to the water and energy efficient machines, yet unintended side affects can be that people, feeling that they are washing in an environmentally friendly way do more washing thus cancelling, or even exceeding, any benefit. This effect was also observed Sedlacko et al. performing Causal Loop Diagrams on different sustainable consumption policies (Sedlacko et al., 2012) and Greening when examining energy use in energy efficient households (Greening et al., 2000). Technical systems cannot always dictate ways of doing; an understanding of the people and their expectations is paramount to enabling pro-environmental routines.

Differences between the expectation of not washing and the actuality of not washing were observed. From the survey Likert scale to measure how acceptable or repulsive not washing was, most responses fell towards the repulsive end of the scale, see figure 8. The Herald Sun survey confirmed this social

preference; nearly two thirds of respondents said they would not wear jeans for three months without washing them (figure 9). However, participants in the not-washing study found that the jeans never developed a socially challenging level of odour, and the participants felt a sense of anti-climax. Erin "It was a bit underwhelming." Simon "What I suspected would happen, never actually happened. My concern was bigger than the practical implications." Emily A "It kind of made me think, how dirty I actually get, as opposed to what I think... like how dirty I actually am, or how dirty clothes get, as opposed to how they actually are." This was further confirmed through social reactions of friends who were disgusted at the thought of not washing, but found that the 'dirty' jeans looked fine. Tim "I make people smell my jeans and they were like 'actually that's not so bad.'" Leonie "When I told them they were really surprised with a look of horror on their face, but going 'they look really good and you don't smell!'" An "I did find it amusing, sometimes when I told people they jumped back and went 'you're kidding', but when they looked down they were like 'yeah it's not that dirty at all.'" Ted "The actuality is always fine, it's just the idea of education and cleanliness that is very hard for them to change." Overcoming preconceived ideas of dirt appears to be a far greater challenge than actually pursuing a low wash lifestyle. People perceive not washing as repulsive, even though in practice there was no socially challenging visible dirtiness or odour. Ideas of what *should* be done are a powerful influence on the way actions are carried out; in this case a significant waster of resources consumed to meet these ideas.

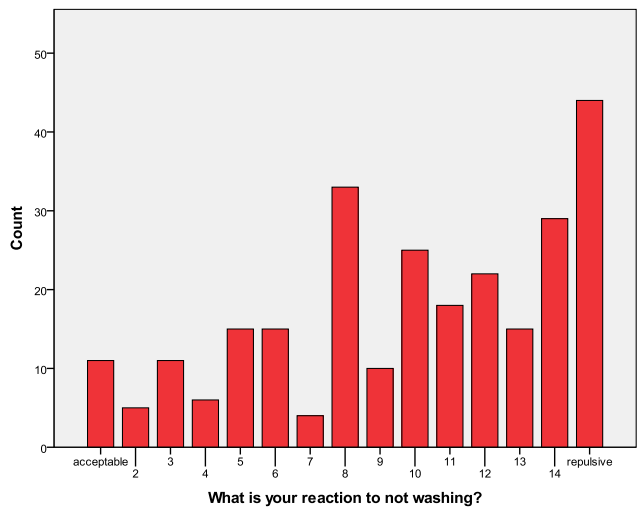


Figure 8

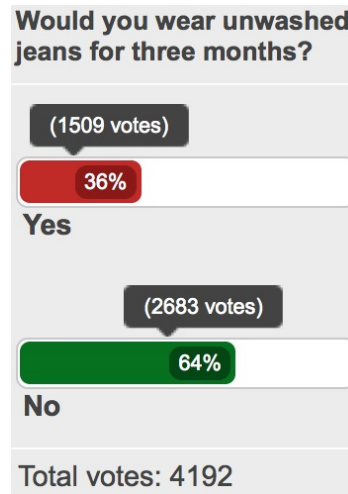


Figure 9



## Conclusions

This paper has shared research on how and why laundry is performed, and documented several of the many different ways that people achieve cleanliness expectations. Findings include a wide variety of washing frequency between different garments, and users. These findings could be used to suggest alternative, resource-efficient cleaning strategies like steaming or spot cleaning that include the human element of cleanliness systems, and could be useful in guiding more efficient ways to achieve cleanliness. However, there is a far more pressing need for a reinvigorated focus on cultural constructs that lead to the wasteful pursuit of conventions, that do not necessarily add wellbeing to everyday life, rather than simply proposing more efficient ways of achieving these cultural constructs.

People perform cleanliness rituals for myriad reasons, and physical reasons while being the most tangible are not the strongest motivators. The jeans worn by participants for three months without washing did not become socially challenging with either visible dirt, or detectable odour. Social standards of cleanliness are not explicit in everyday life and people tend to go above and beyond basic sanitation requirements, wasting significant quantities of water, energy and chemicals in pursuit of these undefinable and ever-increasing cultural constructs of cleanliness. The *concept* of washing less proved to be worse than the *actuality* of washing less, therefore focussing only on the technical systems of delivering cleanliness, ignores potentially significant opportunities to reduce resource consumption by lowering cleanliness *expectations*. This paper has provided some data that takes a small first step in understanding cultural structuring of everyday inconspicuous consumption, however deeper understanding of consumer motivation in everyday life is needed to tackle future challenges of sharing resources in a finite world.

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