

Juris Milestone, Ph.D.
Dept. of Anthropology
Temple University

Anthropologist as Tribologist

A motorcycle, like any other machine, is a composite of load bearing surfaces, or points of contact where friction must be managed - from the various needle bearings and bushings that allow for rotation of gears and crankshafts, to ball and tapered bearings that enable steering stems and wheels to rotate, and suspensions to flex, to the oil scraping and compression rings that create points of friction management encircling pistons within their cylinders, so they can extract movement from explosions, and separate fire from oil, to the friction surfaces of brakes that convert movement to heat, and the sacrificial surfaces that are tires, meant to maximize friction, unlike body fairings, designed to minimize the drag of air upon the whole of the machine as it travels through space. While traditionally we might think of mechanical and material engineers as having the specific expertise necessary to fully understand all these interacting surfaces, we should not forget that the tribologists among them are only part of the picture - mechanics, or the maintainers of tribological points in space and time, are equally important to managing friction. And while packing grease into bearings may not seem exciting, the symbolic meaning these maintainers produce through their work might offer a way to expose the 'otherizing' of maintenance and repair, and thereby decolonize innovation and design, ridding it of celebrity and commodification.

Among the motorcycle builders that I have studied as an observing participant, the physics of bearings are ever present of course, but remain relatively backgrounded, or largely intuitive, with the explicit attention of the mechanic anchored in the realm of application, or making sure the damn thing works! Still, I would submit that meaning is also made through the management of friction in these instances, not through scientific validation, or studies of efficiency, or through the Stribeck curves of friction regimes, but in terms of the symbolic power of cool - a kind of distinction, or integrity of experience. These mechanics grease bearings, to be sure, and understand their loads, but they're motivated by hearing an engine sound right and strong, and they're satisfied by the meaning and value made through investing the labor of their bodies into bikes. So, while the management of bearing surfaces does matter, to understand these maintainers, our task must be to open tribology to a socio-somatic understanding of friction, so that "interacting surfaces in relative motion" may include people and objects, not just bearings and their races. And in the day-to-day of custom motorcycle building we have some wonderful opportunities to see these two valences hybridize - social and mechanical - into new meanings and significances, meaningfulness that can also challenge dominant notions of maintenance, repair, design, and innovation.

Imagine if you will, the effort to combine pieces and parts from five or six different machines into one cool ride! One might want to have a different look for a bike, improve its performance, or simply "cannibalize" several machines that don't work, to make one that does. These efforts often produce what is known as the "custom" or sometimes, "garage-built," bike. Individual parts can express this notion as well, and this is often realized through the term "one-off." The one-off is a piece made for a specific purpose

or application that exists in no other instance, usually because the particular conditions or purpose for its making are unique: a bracket made from raw metal to attach a guard where there was none before, or a headlight nacelle cut open and sculpted to accept a tachometer originally made for another bike. These “one-off's,” express a kind of anti-mass manufacturing innovation, in that they create a new set of parts and relationships that are decidedly not in the service of manufacture by mass production. Rather, a one-off is expressive particularly of the inverse, a piece made by a singular person for a singular purpose. And when a bike that embodies these ideals is appreciated, much of the adoration comes in the form of recognizing the significance of these singular objects and what they mean (a whole bike can embody this notion as well). This produces the satisfaction of being unique, or “cool.” The parts or the bike are appreciated and praised for how the knowledge of their making counters the anonymous, materialistic, and mass produced item. They are home-made parts, and they produce a singular expression of a person (or set of persons) and a time to which they are anchored.

For that mass produced item there is yet another term: the “bolt-on.” Bolt-ons are generally acknowledged with something between derision and ambivalence. They are parts obtained from a catalogue of parts, manufactured new, even if sometimes copied from previously manufactured parts (a reproduction or “re-pop”). Sometimes they also carry the heavy symbolic weight of chrome - seen as a superficial coating of pizzazz, or “bling.” Being new, or new re-pops of old designs, these parts (and whole bikes and cars made this way) are derided for having simply been bought, and bolted together. Purchased out of a catalog, these parts are seen as having only the value of their cost, not the value of time, history, or creativity. Old parts found through swap meets, chance meetings, or personal ties take on extra value from those contexts. So, a bike made from the work of fabricating one’s own parts, or fabricating new relationships between old parts (piecing together several different bikes into one) is seen as more “cool,” or having a greater level of integrity, than a bike made by the factory (stock) or even pieced together from re-produced (bolt-on) parts. Of course, there is appreciation for a bike with a great deal of material investment in performance or quality of materials, but this appreciation is also often dismissed as having been made through the magic of wealth and not the magic of struggling under the constraints of limited circumstances. These distinctions also highlight the class divisions produced by commercial, corporate domination of “innovation” discourses.

Thus, I want finally to argue that the production of meaning embedded in what we might call the one-off mechanic’s experience, is a form of socio-somatic meaning making that binds the applied tribology of maintenance and repair to an innovation that resists commercialized mass production. An on-the-ground understanding of the bike builder’s championing of ‘old’ technology and one-off fabrication as cool and full of integrity can allow us to appreciate the pervasive presence of bearing surfaces and their maintainers, but also pull “innovation” out of the clutches of a newness-high-tech-obsessed techno-capitalism, to place it in the larger sociocultural and historical context of human interventions.

To understand maintainers, we have to understand what motivates them, how maintainers make meaning in their individual lives, and how that is in turn connected to larger structural frameworks and forces. In my experience, though the thought of fresh oil in an engine brings some sense of satisfaction, motorcycle mechanics are generally

not motivated by the hundreds of oil changes they do - this is in most cases the drudgery of the job. And while there are many reasons to be a mechanic, one actually is a love for machines. And in my field site, this love came in the form of appreciation for singular machines (not necessarily of high economic value) that made meaning for their makers and users.

Part of understanding how maintenance matters has to do with appreciating how maintainers come to care about something, how they create meaning in what they do, which in this case is through a socio-somatic experience of individuality, expressed in the whole and in the parts of a machine. Ethnographic methods and the culture concept, as practiced and understood by anthropologists, are well suited to explore these phenomena, and in the case of my particular field site, the one-off bike is a source of romantic, compelling motivation, framed, at least in part, by how it contrasts with a commercialized, mass produced commodity, and the mundanities of maintenance and repair. But, the punning of the word tribology in this paper's title is also instructive here. The kinship term "tribe" has come under scrutiny from socio-cultural anthropologists, mostly for how it hints of complicity in past paradigms, where exotic otherness to civilization's superiority, and the unequal relations of power in colonization went largely unchallenged. So, it is with some irony that I hint to the that history here, but not without purpose. In colonial paradigms, kinship terms like "tribe" worked to contain civilization's others, by the classification of a kind of social organization that fell outside the so-called civilized structures of nation-states. Therefore, "tribe" served well during the civilizing operations of colonialism. Of course, the engineer's tribology is something different, but I want to draw inspiration from that specialization, and propose that the socio-somatic version of trib(e)ology could allow for a critique of the colonization of innovation by commercial forces. And with ethnographic insights into meaning making, and anthropological efforts to link the day to day with larger structural forces like capitalism, class, and culture, we can critically analyze how the domination of innovation and design by the social institutions and logic of consumer-capitalist economism have otherized maintenance and repair, much like the way tribes were otherized as non-state social organizations, and then both physically and symbolically colonized to be mined for their material value.