In a May 2015 essay on "The User, the Learner and the Machines We Make" my co-panelist Alex Gil asserted that "minimalism is in the eye of the beholder" and argued that design decisions that "eliminate clutter" frequently ignore the more critical question of "what do we need?" Often this more empathetic and generous user-centered framework for digital design facilitates more understanding of participants' lived practices and more thinking about infrastructural conditions without relying on the myths of technosolutionism or autonomous empowerment. For example, the digital humanities project for a Latin American cinema database in Havana, Cuba that I visited a few weeks ago was hampered by 2MB upload limits to its Canadian mirror site, routing of its film fan Facebook presence via Mexico, and the lack of availability of large format scanners manufactured abroad. Potential hometown users of this database generally access the Internet with their cell phones from public wi-fi hotspots using scratch-off cards and experience frustration with the government as a utility provider, given power outtages and pricing surges. These users might prefer more robust messy assemblages rather to sleek and sanitized futurist fantasies of disintermediation.

In my brief remarks I would like to take Gil's question about necessity to its limits and think about the cell phone that all of you are probably carrying somewhere on your persons as a potential device for survival. Given the tendencies of this scholarly body to focus on eloquent and ambiguous texts, this interest in the platforms for blunt force messages like "help" or "I am safe" might seem inappropriate for researchers of language and literature. But I would argue that it is important to make our digital rights agenda explicitly one that engages with human

rights if we truly want to have a "big tent" digital humanities. Furthermore, it is important to acknowledge the many kinds of rhetorical performances that vulnerable people do to either make themselves visible or invisible to their families, their communities, the authorities, and interested others.

There's one other aspect of my provocation that seems important to foreground. Usually a speaker at a podium like this one expects the audience to sit quietly and passively during a talk. Doodling, drawing, cutting, or glueing are generally frowned upon activities for adults in academic environments. But as we consider ways to imagine possible platforms for minimal computing in the digital humanities, I'd like to challenge this assumption and encourage you all to spend the next few minutes thinking about survival kits, life support systems, and the user interfaces of mobile phones, and to do so using non-digital tools.

Of course, the technique of rapid prototyping has a long history in the tech sector. At NASA's Jet Propulsion Lab, creative strategist Jessie Kawata facilitated paper prototyping as part of the design process for planning space missions during the Obama administration. In the 60s lunar rovers were mocked up with erector sets. More recently solar panels were prototyped in origami. But what about humans attempting to survive harsh conditions here on our own planet?

As digital humanists, members of UCSD's Electronic Disturbance Theatre have long been interested in engineering survival tools as speculative design projects. For example, the Transborder Immigrant Tool for finding water caches in the desert repurposed discarded mobile phones for survival in the US/Mexico border region. Survival has been a key theme throughout the work of micha

cardenas, including fashioning garments that exploit the technological affordances of mesh networks and bulletproof materials in social justice digital humanities work intended to protect people of color – particularly queer and transgender people – from both street violence and police brutality.

Inside this convention center room, the everyday objects that you carry in your pockets, wear on your wrists, or lug in your bookbags at some point were speculative prototypes whose functions were still to be fully imagined. Teams once tested out different shape shifting possibilities for these objects on members of the public and also on themselves. In providing an initial tangible platform for the potential mediation of human and nonhuman actors, these disposable iterations might seem ephemeral, disposable, and even superficial or deceptive shells. But such prototypes can also be powerful examples of the res publica. For example, Alan Kay's 1968 Dynabook computer was once a hollow cardboard model deployed to make his argument about universal access to computational media. In thinking about what a cell phone could be if it were something other than the kinds of blackboxed gadgets that we have today, perhaps you might imagine something with modular open hardware components like the Ara Spiral, which could allow your device to be easily outfitted with a new screen or night vision. Perhaps the apps you activate from its interface anonymize participants assembled in protest and consequently put at risk, particularly as live streaming to public social media networks becomes a more common practice in digital rhetoric.

Feminist scholars in science and technology studies and media arts practice tend to bring a different ethos to questions about how to design tools and how to

imagine interactions with non-human participants. They are often extremely skeptical about embracing popular narratives of instrumentalism; they are aware that new solutions often create new problems; and they are curious about how the dominant myths of technology divert attention from the responsibilities of care and repair, from the maintenance of infrastructure, and from mess. The FemTechNet collective has identified a number of theoretical touchstones as a way to approach the work of speculative design and cultural critique, which I will enumerate here as a way to think about our work together in these moments brainstorming, crafting, and prototyping.

Technology assumes tacit knowledge practices (although it is often presented as transparent)

Technology promotes particular values (although it is often presented as neutral)

Technology is material (although it is often presented as transcendent)

Technology involves embodiment (although it is often presented as disembodied)

Technology solicits affect (although it is often presented as highly rational)

Technology requires labor (although it is often presented as labor-saving)

Technology is situated in particular contexts (although it is often presented as universal)

Recently many digital humanists have turned to the work of African-American science fiction writer Octavia Butler as a way to conceptualize the

field's ethical obligations to the marginalized and dispossessed and the importance of resisting the temptation to colonize and appropriate their discourses. Moya Bailey, Bethany Nowviskie, and the authors of *Queer OS: A User's Manual* have all credited Butler's ideas as inspiration. Furthermore, we know from the artifacts in Butler's archive that she frequently utilized markers, tape, and scissors as design tools.

Certainly Butler gave a central role to tools for survival in many of her stories, particularly for people reduced the conditions of bare life and Agamban's homo sacer. Characters experiencing forced migration in Butler's novels often had their woes compounded by the travails of racial profiling, rape culture, slavery, and many other forms of structural injustice. For example, Lauren Olamina, the protagonist of *Parable of the Sower* depends on an assemblage of tools and resources, including weapons, currency, sustenance, disguises, maps, contraception, reference works, and supplies for hygiene, health, and shelter. As she acquires items in her inventory, her communal vision redistributes the survival kit's materials and redesigns its economic function as property.

Because Butler invites us to empathize with those who suffer forced migration, it is worth considering how the subjects of the Syrian refugee crisis are often depicted by the dominant culture as picturesque victims lacking agency, even when it isn't difficult to see their survival own inventories in the background. Many years earlier, Susan Sontag had complained that Sebastião Salgado's dramatic *Migrations* series aestheticized suffering in panoramic images. According to Sontag, Salgado rendered people's troubles as "too vast,

too irrevocable, too epic" so that "compassion can only flounder – and make abstract" (78). By grounding her refugees' stories in their access to particulars -- nuts, matches, knives, sleep sacks, lip balm – Butler lets us understand both the tenacity and the tenuousness of subject-object relations located outside of the circuit of conventional consumer commodity fetishism. The refugees trip to the Hanning Joss megastore where vendors sold "everything from gourmet food to delousing cream, prostheses to homebirthing kits, guns to the latest in touchrings, headsets, and recordings" (173) represents a perverse parody of the market-driven spectacle. As her protagonist Lauren writes, "I could have spent days just wandering through the aisles, staring at the stuff I couldn't afford."

Often refugees must make for themselves, like these scissors from a refugee camp in the Southeast Asian Archive at UC Irvine. Vernacular substitutes might not be elegant design solutions, like this wearable shelter produced by Royal College of Art students, but they may speak to more immediate needs and preserve certain dignities, even if situated actions may be more important than planning in dire situations.

As you continue working on your prototypes, perhaps consider the work of Kate Coyer at the Keleti Train Station in Budapest, Hungary when this ongoing crisis was most visible in mainstream media coverage. Coyer understood that cell phone chargers and wireless hubs might be more useful survival tools for refugees than designer gadgets and pet projects. We should also consider potential unintended consequences for people at risk like the Drones for Refugees live streaming project. In other words, how can we create both a more

capacious and a more cautious digital humanities to support those at the center of real-time crises both in other places in the world and here at home.