
# Patchworked Creative Practice and Mobile Ecologies


# PATCHWORKED CREATIVE PRACTICE AND MOBILE ECOLOGIES

by

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*Design has become the most powerful tool with which man shapes his tools and environments (and, by extension, society and himself).*

- Victor Papanek

*"Decolonization is […] about reshaping, turning human beings once again into craftsmen and craftswomen who, in reshaping matters and forms, need not to look at the pre-existing models and need not use them as paradigms."*

- Franz Fanon

# ABSTRACT

As the use of mobile technologies, consumer electronics and the internet expand, there are more opportunities for young visual designers around the world to gain access to design industries. Yet differences in infrastructure and spatial configurations create distinct obstacles and opportunities for emerging designers from marginal contexts, as often these infrastructures are not designed with them in mind. Employing a practice perspective, which brings together concerns around identity and infrastructure, I used ethnographic and exploratory methods to understand the creative practices of a group of young, resource-constrained, aspiring creatives from Cape Town, South Africa, who are enrolled in design courses. This thesis explores tensions between authentic creativity and continuity, as well as notions of democratization in visual design practices.

Off campus, young people predominantly appropriated mobile devices as infrastructure for creative practices. They used data frugally, grabbed media in patches and snippets, and used multiple free applications together to forge creative work, participation and distributions. These practices, which include mobile-based photography, design and branding, were situated in particular creative worlds, which revolved around distinctive visual styles. Instead of vast networks with flows of data that connect infinite nodes, these creatives experienced the web and digital media as an assemblage of technologies and tariffs for mobile data. Thus, these media-related practices were more 'patchworked' than networked.

Once enrolled in design courses, a very different repertoire of protocols, standards, materials, technologies, concepts and ways of being became infrastructural to these young people's participation in formal visual design practices. For many participants, an enduring distance separated them from those embodied, technical and spatial requirements for later professional participation in the design industries. These tensions demonstrated how very particular configurations of resources are infrastructural to visual design practice associated with formal industries. Infrastructure and practice are thus dynamically and asymmetrically mutually constituted.

This thesis employs improvisational jamming to make the role of infrastructure visible, along with specific mobile design practices. Many of these mobile systems were

standardized and encoded with cultural norms, giving creatives second-hand discourses from which to build their own creative artefacts. These case studies draw attention to the global standardization of infrastructures for creative practice, which threatens to flatten the cultural richness of local creative voices.

[Keywords: participatory culture, youth and media, digital creativity, digital media, infrastructure, digital design, visual design, cultural production, digital practices, creative practices]

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# PLAGIARISM DECLARATION

I, *Marija Anja Venter*, declare that *Patchworked Creative Practice and Mobile Ecologies* is my own work, that it has not been submitted for any degree or examination at any other university, and that all the sources I have used or quoted, have been indicated and acknowledged by complete references as confirmed by *Turnitin*.

Signed: Signed by candidate Date: August 14, 2017

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*In memory of Gary Marsden, who planted all the seeds.*

*Chapter 1*

# INTRODUCTION

*Sitting in a small two-roomed shack, Neo flipped through the photographs on his Samsung Galaxy S II – a gift from his grandmother. He was the first of his family to attend a University, and she gave him the phone as a token of celebration. The photographs were mostly of his drawings – 3 years' worth of them. He had to decide which picture he wanted to use to advertise his services as a portraitist among his contacts. He desperately needed the extra money for materials in class. The lecturer gave him a final warning that he had to paint with gouache and not the cheap powder paints he was trying to use as a substitute. She told him in front of the whole class. Even though he couldn't afford gouache, he also couldn't afford another embarrassing moment like that.*

*Looking at old photos reminded him of how much he had improved over the years. Even though the older photos were much lower resolution than those he could now take on his new camera, he still noticed how awkward his line work was back then. Neo did not study art at school, so he had to teach himself. The first few months in the visual design course were a difficult adjustment for him, and he very nearly failed a design theory exam in June. He spent every moment he could on the computers next to their studio on campus, researching. Yet even the computers were hard to get used to – they didn't have any computers at his high school. He only ever used computers at the public library, and then his use had a time limit. Now, at university, whenever he didn't know what the lecturers were talking about, he would run and Google it – there was lots to become acquainted with in this new world.*

*He chose a picture of his friend Kuhle who is in his class. The image was of her with long braids wearing a shirt designed by another friend of his from class, Onwaba. Onwaba has his own clothing brand called "Kasi Squad". Kasi means the hood: the township[1]. The graphic on*

[1] In South Africa, a "township" refers to urban areas that were formally designated for people of colour, in their distinct socio-linguistic groupings (separated as black, Indian and coloured) under law in apartheid South Africa. These areas are built on the periphery of cities, are typically undeveloped and consist of low-cost and informal housing.

*the t-shirt showed a breakdancer mid-spin, clothed in traditional beaded Xhosa[2] attire. Akhona's room couldn't fit a desk, so he used a clipboard to press down on and draw. He used the phone as a reference, and perched it on the far corner of his make-do art board.*

*He then took a picture of his drawing, opened the file in a mobile application called PicsArt and edited the photo. He pushed the contrast, upped the brightness (so the image looked flat and crisp), and cropped it. Using a different application he painted his latest design moniker "NeoArt" at the top of the image with his finger. He then opened another application called Studio Design and added text – "custom portaits between R50 – R300[3]" and his phone number. He tapped the share button, selected Facebook, and hoped there was enough data left on his prepaid simcard to post his advertisement.*

Neo (22) is an aspiring graphic designer who lives in Gugulethu, a township on the margins of Cape Town, South Africa. He is one of 18 young aspiring creatives enrolled in design courses that I observed, interviewed and spent time with to uncover how digital media was supporting their creative practices and participation in creative worlds, on and off campus.

In the wake of a history of apartheid[4] access to specialized arts education is rare among young people of colour[5] (Booysens 2012). The exclusive skills and tools required for participation in cultural fields such as graphic design, media production, industrial design, and fashion design, to name a few, have resulted in cultural industries that remain unrepresentative, untransformed[6] (Noakes, et al. 2014, Lochner 2011, Pretorius 2015) and lacking in any significant diversity (Nyamnjoh 2008, Nyamnjoh 2005). In well-resourced

[2] Xhosa people are the second largest ethnic cultural group of South African people. They have a distinct cultural identity, customs and language.

[3] 50 – 300 South African Rands (R) are equivalent to roughly $3 - $22

[4] The system of institutionalized racial segregation and white supremacy that was enforced in South Africa between 1948 and 1994.

[5] I use the term "people of colour" to describe the grouping of black (or black African), 'coloured', and Indian creatives. While race is not necessarily fixed biologically, I use these terms to refer to the legacy of racial classification that was defined by the South African Population Registration Act of 1950. In contemporary South Africa, it remains standard practice to use these descriptors for the purposes of redressing inequalities. While umbrella terms for groups who were disadvantaged under the structural white supremacy of the apartheid government have been difficult to articulate (previously disadvantaged has been a firm favourite in policy documents), I prefer the term "people of colour" as it has become part of the discourse used by university protestors, and emphasizes shared experiences of systemic racism, while implying an intersectional approach to gender, ability, culture and ethnicity.

[6] The concept of "transformation" in South Africa refers to the corrective measures that have been put in place to dismantle structures that perpetuate inequalities in society.

contexts, the potential role that digital technologies can play as infrastructure for new and existing forms of creative practice and participation in cultural and creative industries, however, are well documented (Jenkins 2006, Jenkins and Bertozzi 2008, Jenkins, Ito and boyd 2016, Ito, et al. 2009, Kafai and Peppler 2011, Tacchi 2004).

Smartphones are becoming affordable to a larger portion of the South African population (Statistics South Africa 2017, DeLanerolle 2012), and might signal an increase in visual cultural production – allowing a new generation of visual creatives a platform for networked artistic expression and visual design. Smartphones provide a ticket for participation on the "visual web" (Jain 2015) – the new dominant form of web-based content that is anchored in visual media. Such participation also offers young people the means to compete in the "attention economy" (Webster 2014) – the limited resource of human mental engagement (or amount of "eyeballs") that consume and place value on such digital content. The attention economy has been theorized as a driving force behind international creative economies (Araya 2010, Smiers 2003). Few studies explore how young people from poor and working class families are appropriating networked digital technologies for creative production. As personal digital ecologies in South Africa most commonly consist of mobile-centric or mobile-only media ecologies (Donner, Gitau and Marsden 2011, Donner 2015, Walton and Donner 2012), this dissertation explores the role that digital technologies, particularly mobile devices, are playing in providing alternative paths to creative participation and cultural production for young people like Neo.

Taking a practice approach, I employed ethnographic methods and formulated "creative jamming" sessions to make the role of infrastructure visible. I contribute empirical case studies that show how, off campus, these young people "grabbed" (Senft and Baym 2015) what I have termed as 'digital takeaways' and employed a frugal configuration of resources. These creative practices were more 'patchworked' than networked. On campus, students experienced tensions between their own contexts and the embodied, technical and spatial requirements for later participation in the design industries. I argue that infrastructure and practice are dynamically and asymmetrically mutually constituted. This research demonstrates how there is a global standardization of infrastructures for creative practice, which encode cultural norms and threaten to flatten the cultural richness of local creative voices.

In this chapter I give an overview of the history of visual design in South Africa to contextualize the socio-historical continuum within which this study takes place. In turn, I articulate the promise of digital technologies in extending participation in visual design industries, and provide a snapshot of Information and Communication Technologies (ICT's) in Cape Town. Thereafter I reflect on my positionality in conducting this particular research project, identify my research questions, and give a brief overview of the chapters that follow this one.

**A brief history of Visual Design practice and participation in South Africa**

This study happened against a contextual backdrop where many young South Africans do not have economic, epistemological, social, cultural or material access to visual arts and design education. This foundational education offers well-trodden paths that lead to employment in visual design industries today. Most of the participants in this research came from contexts where there was marginal economic activity, shaped by a social situation that is creating what has been labeled an "underclass" (Seekings and Nattrass 2006) that are excluded from much of the economic mobility and opportunities South African society. A malfunctioning education system is playing a central role in this social situation, where access to good educational facilities and infrastructure are still affected by racialised policies that were put in place under apartheid (von Schnitzler 2016). The state of visual arts, design and the cultural industries in South Africa today are also part of a complex history of racial exclusion.

In 1948, the National Party (NP) won the national elections in South Africa lobbying for apartheid: a "harsher codification of colonial segregation" (Bester 2001). Toward this objective the NP passed the Group Areas Act of 1950 – a policy that would see racial groups geographically segregated. People of colour were separated based on socio-linguistic groupings, forcibly removed and relocated to designated 'group' areas. White people, without exception, had access to established and developed spaces, whereas everyone else was "assigned to the more rural outskirts of the major metropoles, far from work and essential facilities such as hospitals" (Bester 2001, 2). Under apartheid, formal arts education was largely inaccessible to people of colour, along with the materials that facilitated artistic practice (Lochner 2011, 1). Yet a number of community arts centres, which were funded by international benefactors, attempted to provide a space for artists of colour to develop their artistic practice.

In the early 90s as international investors saw their purpose realized in the impending fall of Apartheid and a change of discourse from struggle to development (Lochner 2011, 106). Walters (1993, 9) writes that between 1989 and 1991 alone, one hundred and two community organizations were closed down in Cape Town. Although a white paper was drawn up to foster growth in the arts and culture sector, other developmental goals took precedent over developing the creative industries.

After the fall of apartheid, emphasis was placed on the role that visual -design and -communication could play in the renewal of an inclusive national identity (Pretorius 2015, van Graan 2005). Yet, the "new visual language" of a hybridized "distinctly multi-racial" South African aesthetic (developed through visual design events such as the Design Indaba in 1995 and graphic design publications such as i-Jusi) was, quite ironically, conceptualized and designed by an exclusive canon of white male graphic designers, among them Peet Pienaar, Richard Hart and Garth Walker. These designers re-interpreted and appropriated 'traditional' African arts, developing a new vernacular style typified by "naïve illustration and hand-drawn typography" (Pretorius 2015, 10).

The new African National Congress (ANC) government invested R50 million into art centres to foster the democratization of the arts in 1996. However, these were disused by 2002 under mismanagement, signalling a drastic decrease in art education among previously disadvantaged individuals [7] who relied on these centres for materials, community and instruction. In a speech on the state of the South African cultural industries in 1991, Mike van Graan noted that,

Development priorities such as housing, health care, infrastructure, etc. which deny the importance of culture generally and art in particular...still regard people in two-thirds of the world as essentially physical entities with little, if any, emotional, intellectual, aesthetic or psychological needs (van Graan 1991).

In post-apartheid South Africa, participation in the visual creative industries has been slow to transform (Pretorius 2015, Booysens 2012, Noakes, et al. 2014). While there have been attempts to re-introduce arts and culture as a subject in schools (Joffe and Newton 2007),

[7] As mentioned in an earlier footnote, the concept of "previously disadvantaged individuals" (PDI) is used in policy documents to describe people of colour after the dismantling of apartheid.

these subjects are generally taught by non-specialists (Noakes, et al. 2014). Consequently, a minority of South Africans has access to any form of media or arts education at primary and secondary school level. According to the most recently available statistics, as few as 26% of schools in the metropolis of Cape Town offer these subjects at a senior certificate level (van Graan 2005, Joffe and Newton 2007). A further fraction of high school graduates have the opportunity to gain accreditation in these fields owing to the limited intake of tertiary institutes (Noakes, et al. 2014), despite the fact that media and cultural industries count among the fastest growing, and most sustainable, fields of employment in the country (Oyekunle 2014). As a result, jobs in graphic design, industrial design, surface design, web design, game design, film, television production and architecture still predominantly belong to a minority, mostly white, population, many of whom benefited from the exclusive privileges apartheid afforded them (The Human Sciences Research Council African Micro-Economic Research Umbrella 2010). Today, Cape Town remains one of the most racially, culturally and economically segregated cities in South Africa (Booysens 2012, Geyser Jr and Mohammed 2016).

In 2015, 21 years after apartheid was dismantled, the first generation of South Africans who grew up free from institutionalized racism demanded retribution for a lack of transformation in the new South Africa. In March, Chumani Maxwele symbolically poured a bucket of excrement on a statue of British Imperialist Cecil John Rhodes – then prominently displayed on the façade of the University of Cape Town – calling for the physical and ideological decolonization of the institution. Maxwele's act of defiance set off a series of events that broadcast the plight of young South Africans of colour to the world, through movements such as #RhodesMustFall and later, #FeesMustFall (Pillay 2016, Naicker 2016, Nyamnjoh 2016). South Africa is still plagued by remnants of its apartheid past, and inequality cuts through divisions of race (Nyamnjoh 2016). These massive student-led protests brought attention to racial inequalities within university structures. Popular politics began to engage with struggles around exclusionary fee structures, a lack of social mobility, voice, agency and cultural representation. Dialogues revolved around the repercussions of a broken education system that has left the majority of young South Africans on the margins – unable to prosper. These inequalities were thrown into sharp relief when the city was selected to be the "World Design Capital" in 2014. Popular dialogues emerged that highlighted design industries and visual-cultural

'scapes' that were decidedly non-representative, oftentimes oppressive and potentially alienating to large portions of the city's population (Brown 2015, Wainwright 2014).

However, many young people are hacking out novel pathways for themselves in design (Noakes, et al. 2014, Venter 2015). Such novel pathways are increasingly needed, as faith in higher education institutions to effect transformation are decreasing (Naicker 2016). Political scientists such as Smiers have argued that diverse and inclusive participation in the media production of visual artefacts (digital and physical), as with other cultural production, is crucial in promoting cultural diversity in an increasingly globalized world (Smiers 2003). While new visions of South Africa are continually constructed through emerging youth cultures, popular media representations, and expanding access to digital media, it is important to interrogate how participation in this image-making enterprise works.

In the following section I relate how a "creative consensus" (Perkel 2011) among scholars of youth and media (Burn 2009, J. P. Gee 2005, Ito, et al. 2009, Jenkins, Ratto and Boler 2014, Kafai and Peppler 2011, Kuznetsov and Paulos 2010, Leadbeater and Miller 2004, Shirky 2008) have argued that increasingly available consumer electronics are democratizing participation in cultural production, and offer alternative pathways to creative careers. I interrogate this consensus and test it against the experiences of young creatives in Cape Town.

**The creative consensus and a discourse of 'democratization'**

Over the past two decades, there has been a distinct theme emerging among many media and communication scholars who look at young people's media practices: that young artists and media producers, using digital and network-oriented technologies, have developed new cultural practices, as well as new concepts of creativity (Perkel 2011). Perkel has coined this phenomenon the "creative consensus", which he summarizes with the formula: "New Technologies + New Generation = New Cultural Practices and Conceptions of Creativity" (Perkel 2011, 2).

Perkel's formulation of a 'creative consensus' revolves around the social and cultural implications of technologies grouped under "web 2.0", "social media", "social software" and "applications" (Perkel 2011) that give rise to "user-generated" content, labeled as "prosumption" (Beer and Burrows 2010), "produsage" (Bruns 2007, Bruns 2008) and

"pro-am" (Leadbeater and Miller 2004, Bruns 2010). This broad range of media scholarship shares a concern with the changing relationship between people, organizations, media and distribution systems owing to the emergence of networked technologies.

Scholars from the United States, the United Kingdom, Europe and Japan, mong many other well-resouced geographic locations, who present a particularly celebratory account of these shifts in media production, see them as signaling a 'participatory turn' – leading to a 'participatory culture' (Delwiche and Jacobs Henderson 2013, Jenkins and Bertozzi 2008, Jenkins, Ito and boyd 2016, Ratto and Boler 2014). For such scholars, informal modes of creativity are linked to 'media literacies' (Buckingham 2013, Burn 2009) that revolve around the creation of original visual content. These literacies support informal interpersonal genres based around, for example, social visual communication (such as sending a selfie to a friend) but are also linked to a wide range of visual design disciplines involving digital media production (such as visual design, web design, fashion design, animation, game design, or social media, to name a handful), where full participation requires extensive visual and computer literacies. Claims as bold as "No longer must one have large budgets to finance production and the necessary influence to get past gatekeepers when attempting to disseminate one's work" (Hargittai, 2000 in DiMaggio, et al. 2001) and "the result is grassroots creativity operating on a scope and scale that would have been unimaginable at earlier moments (Jenkins and Bertozzi 2008, 175)" are relatively commonplace in 'participatory culture' literature (Delwiche and Jacobs Henderson 2013). For scholars who exemplify these perspectives, new digital technologies "lower barriers to participation and provide new channels for publicity and distribution" (Jenkins 2006, 152): new technologies, in other words, are *democratizing* the means of production and distribution. As argued earlier, this promise of democratization is particularly welcome in South Africa, where creative industries have been marred by unequal participation.

In view of this consensus, I set out to identify the ways in which this literature frames participation as manifesting through new digital infrastructures. In other words, I asked: how do these scholars frame digital technologies and tools as extending inclusivity in visual creative practice? How do technologies like network connected mobile 'cameraphones', smartphones, social networks, creative software and editing applications change what it means to be a visual creative? In the following sections I frame how scholars such as Jenkins, Gee, Ito and boyd, among many, have promoted this view of digital technologies

as infrastructure for increased creativity and democratic participation. According to these arguments access to new digital technologies have lead to new creative identities, practices, organization forms, and learning opportunities. While I am careful to share these scholars' optimisms – as I counter many of these universalizing arguments in the following section – I relate these points here as they become integral to my analysis later in this thesis.

***Amateur Professionalism: New practices and careers***

Literature that sings the praises of a participatory culture often cite the "rise of the amateur professional" (Kuznetsov and Paulos 2010, Leadbeater and Miller 2004, Bruns 2010). In this framing, young people are increasingly moving away from what established institutions had previously defined as legitimate "art" and "design" in favour of their own creative paradigms (Jenkins and Bertozzi 2008). These young people are, with the help of networked technologies, able to leapfrog over institutional accreditation, and directly enter the workforce (Jenkins and Bertozzi 2008). According to Jenkins and Bertozzi a new generation of young people are armed with an extensive list of software, and produce videos, designs, photographs, music and interactive experiences, recreating the workflow of a professional production house from their bedrooms (Jenkins and Bertozzi 2008). This connection between newly accessible technologies and independent youth media isn't wholly new to the digital age. For example, the "video guerrillas" of the 1960s used Portapak video cameras to undertake a radical new practice of video making (Boyle 1997). "Riot grrrls" in the 1990s were able to use widely available photocopy machines to copy and staple punk zines, which ushered in a new wave of youth feminism (Dunn and Farnsworth 2012). Yet Jenkins and Bertozzi argue that these new digital creatives are unprecedentedly well networked, "mov[ing] along similar, and often identical circuits as commercially produced works" (Jenkins and Bertozzi 2008, 148).

From this perspective, well-resourced young media producers can use online networks to distribute content widely (Gross 2009, 67). Jenkins and Bertozzi's example cite creatives making the most of these new "circulations": ways of distributing content through blogs, podcasts, vlogs, tutorials, streaming and new media platforms (Jenkins 2009, xii). According to these arguments artists can, for example, directly sell their works to followers on Instagram using Paypal, musicians can set up direct payments for digital downloads from Bandcamp, fashion labels can create brand identities and facilitate sales via Facebook

and Shopify, and gamemakers can gauge the captivation of their gameplay by releasing and selling their works-in-progress in 'open access' on STEAM or itch.io.

Jenkins and Bertozzi argue that, much like the video guerillas (Boyle 1997) and riot grrrl movements (Dunn and Farnsworth 2012), emergent media technologies give rise to new aesthetics, genres and communities (Jenkins and Bertozzi 2008) surrounding cultural artefacts such as electronic fanzines (Ratto and Boler 2014), mobile art (Hjorth 2015), glitch art (den Heijer 2013), punk games (Harvey 2016) and virtual reality films (Fitter 2015), to name a few. According to these case studies, young people are not just able to participate in existing media industries such as visual design and fine arts, but also have the ability to appropriate and redefine what these fields of interest constitute.

As a result, these new creative practices enable new professional identities and organizations (Balsamo 2011). For example, many young people start their own businesses; freelance from co-working hubs; and work collaboratively in loose collectives with like-minded creatives (often across vast geographic distances), re-defining creative genres as they go. The increased mobility of digital devices has also been credited with the rise of creatives who can do their work from nearly anywhere, giving rise to a class of "digital nomads" who perform digital work independent of work locations (Richards 2015). According to a democratization discourse, the notion of "climbing the corporate ladder" in the design industry has given way to the employment of contract specialists and freelancers, offering new self-defined class identities to young creatives who carve out independent and innovative niches for themselves (O'Connor 2015).

### *Informal Learning: Affinity Spaces, Remixing and Genres of Participation*

For scholars such as Jenkins and Bertozzi (2008), networked participation also means that creative skills are no longer solely being cultivated in highbrow, exclusive design schools. Instead, online networks are providing interested creatives the resources to teach themselves. Gee built on the concept of a participatory culture (Jenkins 2003) and particularly referred to the spaces for participation as "affinity spaces" (Gee 2005). In Gee's framing online and offline affinity spaces offer groups of people who share interests a place to play and create together – informally learning from one another around shared interests. Wanting to distinguish his concept from the comparable theorization of "communities of practice" (Lave and Wenger 1991), Gee argued that his focus was on the

spaces that facilitated interaction, and not the communities. According to him, the notion of communities conjured up images of membership, whereas his theorization drew attention to the ebbs and flows (Gee 2005) of diverse participation within these spaces.

Gee's theorization resonated with my own (middle class) experiences of participatory culture. As an active MySpace participant in the mid 2000's I learned about the web design language CSS by customizing the look of my homepage – tweaking it by adding glitter gifs and songs. I found many other people on digital forums who were also interested in learning CSS to customize their sites. Here I could remix the work that others had done, by copying and pasting strings of code from a wide selection of websites and comment threads. The goal of visually constructing my identity online motivated me to learn the skills that would allow me to do so. This also laid the foundation for my interest in web design, which I now sporadically do in exchange for payment, as part of my repertoire of moneymaking skills.

In many of the cases that Gee cited, such creative practices often emerged from fan culture, where young people contributed media to popular visual culture franchises, visually remix existing digital artefacts or produce fan art (Jenkins and Bertozzi 2008). Yet, I found that much of Gee's theorization tended to obscure the important role of both bodies and materialities in participation. For me, accessing MySpace[8] in 2005 involved going to the student computer centre multiple times a day, being aware of personal safety while walking there late at night, carefully keeping an eye on how much data I was using to go onto various sites, and dealing with sluggish internet speeds. While I was involved in multiple online affinity spaces, I was aware that my experiences of these spaces were quite different to those of my UK and US-based counterparts. Their internet was faster and they had access to the latest gadgets. Thus, even though Gee's conceptualization of affinity spaces rang true in some ways, his focus on spaces didn't match my own experiences of embodied practice. In this dissertation, I found it important to draw attention to the role that infrastructure, spatiality and embodiment played in young people's participation.

[8] Myspace was one the largest social networking sites worlds, particularly among young people. The site was most actively used between 2003 and 2008.

While Gee focused on the notion of spaces for learning, Ito, Baumer et al. (Ito, et al. 2009) drew attention to the diverse ways in which young people participate in such spaces. They distinguished, in their long-term ethnography, a number of ways in which users were appropriating personal media in either 'friendship-' or 'interest-driven' modes of participation. The former revolves around "hanging out" with your friends, flirting, keeping in contact, sharing content, or negotiating forms of identity. This could include chatting with your friends over social networks, sharing images over mobile messenger, or helping a friend capture a new profile picture on their mobile camera.

The latter, "interest driven" modes of participation, were more closely associated with 'geeky' or creative practices. Here, young people rally around interests such as fandom, gaming, art or other specialized interests. The social network DeviantArt[9], for example, was where I would view and comment on many of my MySpace friends' art. As an aspiring artist myself, I shared this interest with many of my online friends. We would use the features of the site to socialize around art that we produced. In Ito et al.'s (2009) words, young people "mess around" while becoming more serious about the skills relating to their interests, or fully "geek out" – diving deep into a specialized area of interest.

In the case of DeviantArt, messing around might have involved posting an image of a drawing that I had made. And geeking out would include finding technical tutorials to follow to better align my practice with those of professional artists. Ito et al.'s study contend that young people's identities and activities are fluid – different motivations, levels of commitment and intensity of use frame their use of media tools and affinity spaces (Ito, et al. 2009). However, across the board, those who were particularly interested in creating their own creative artefacts were far more likely to fully "geek out" with the resources at hand.

As this thesis focuses particularly on young creatives, who have already decided on their field of interest, the participation of young people in remixing existing media forms, and learning through such activities, are particularly of interest. Jenkins sees these appropriations from commercial media as "a kind of apprenticeship phase" (Jenkins and Bertozzi 2008, 156) to becoming a creative practitioner. In Jenkins' theorization young

[9] DeviantArt is a longstanding social network that revolves around user-generated artwork. The site can be viewed at http://www.DeviantArt.com

aspiring creatives in the US and UK "learn what they can from the stories and images that are most familiar to them" (Jenkins and Bertozzi 2008, 156). This raises questions about the experiences of young people for whom design and artistic industries, and the media produced through them, are culturally unrepresentative.

Beyond the question of learning, affinity spaces (Gee 2005) are also conceptualized as a place where creative manifestations become appreciated (Engholm 2002). This can be seen in the emergence of participation around cultural artefacts such as memes (Knobel and Lankshear 2011), mash-up culture (Sinnreich 2010), YouTube "poop" (Gow 2010), "Let's Play" YouTube channels (Smith and Sanchez 2015), "loop culture" forms such as GIF's (Poulaki 2015), and many others. In this framing, members of interest communities can search for like-minded individuals, comment on each other's work, and share information. As a frequent Instagram user, I am able to follow a global network of artists. The features of Instagram have also connected me to appreciators who follow my posts, like and comment on my work, and purchase my art.

### *Do it Yourself: Making, Voice and Celebrity*

For other proponents of digital democratization, social media has lead to a growth in 'Do-it-yourself' (DIY) culture (Ratto and Boler 2014, Tanenbaum, et al. 2013, Kafai and Peppler 2011, Jenkins, Ratto and Boler 2014). For Ratto and Boler 'DIY' refers to 'non-expert making' (as opposed to hiring an expert, having accreditation to practice, or consuming ready-made products). As a term DIY is loaded with diverse associations (from punk rock, to indie productions, home improvement projects, and technology modifications, among many). As a catch-all term it refers to modes of production or learning that are self-sufficient, but it also describes an ideology that prioritizes ideals such as agency, thriftiness, resourcefulness, individuality, collaboration, customization, independence and emancipation from limitations that are embedded within readymade designed systems or artifacts (Tanenbaum, et al. 2013, Ratto and Boler 2014). For a certain school of theorists, digital DIY is associated with notions of "critical making" which is concerned with issue of citizenship and voice (Ratto and Boler 2014). "Voice" in this regard, refers to the agency that individuals have to give an account of their experiences, to express themselves on their own terms, and speak to larger socio-political configurations (Burgess 2006). Voice is also about being heard and recognized (Dreher 2010).

The practices that Ratto and Boler cite are diverse, and range from video production to tinkering with open source code. In general, such critical practices revolve around people having the ability to "engage and innovate" (Ratto and Boler 2014) around generative systems (Zittrain 2006). The concept of generativity is best exemplified by the open source movement. The movement contends that there is a democratic, emancipatory and liberatory dimension to sharing software code, so that others can access this code for free (Star and Bowker 2006). In such cases people are able to look under the hood of systems and reconfigure elements to better suit their own needs. Thus generativity is "the ability of a technology platform or technology ecosystem to create, generate or produce new output, structure or behaviour without input from the originator of the system" (Zittrain 2006, 1982).

According to Zittrain generativity is a function of a technology's capacity for leverage, adaptability to various tasks, ease of mastery and its accessibility (Zittrain 2006, 1981 - 1982). A technology has capacity for leverage if it makes difficult tasks easier to do. The easier it makes the task or the greater the variety of accomplishments it enables, the more generative is it (Zittrain 2006, 1981). Technologies increase in generativity the more adaptable they are to various tasks. Generativity also increases, the easier a technology is to master. This reflects how easily a broad range of people are able to make use of a technology's leverage to conduct the work they care about. As Zittrain asserts, this can happen "regardless of whether the technology was designed with those tasks in mind" (Zittrain 2006, 1981). The ease of mastery also contribute to how readily people will deploy or adapt a technology. And finally a technology's accessibility greatly contributes to its potential generativity – obstacles might include the expense associated with acquiring or using a technology, where the technology is situated, or the knowledges required to pick up a technology.

Turner argues that the concept of DIY can also be applied to modes of self-representation, as is the case with, for example, 'DIY celebrities' (Turner 2004) - 'ordinary people' who become celebrities through their own creative efforts. These efforts are also connected to "voice" and are framed as bringing more diverse subjectivities to broader publics (Burgess 2006, Kafai and Peppler 2011).

### *The symbolic and economic value of digital tools and data*

For scholars such as Negroponte the 'newness' of a networked participatory culture was related to the ephemeral nature of digital goods. As online communities grow, and digital artefacts (as opposed to "physical" artefacts) become the norm for creating, sharing, selling and storing culturally significant goods, these "bits" (as opposed to atoms) gain newly negotiated symbolic and economic value (Negroponte 1995). Beyond digital creatives producing purely digital artworks and designs as deliverables to clients, there are now entire industries, and related economies that are built around digital sales. For example, filter sets for animation and editing software, brushes and plug-ins for graphic editing software, stock images, editable vectors, and, for those who create the visual aspects of games – any number of in-game digital objects for purchase. Creatives, who have access to the right tools and platforms, can thus make a profitable something from a digital 'nothing'. However, according to the definition of infrastructure (Star and Bowker 2006) this notion of a digital 'nothing' is severely problematic as all digital goods are in essence material and require a very real set of infrastructures. In the next chapter I expand on the theorization of infrastructure that I use in this dissertation, and describe how it brings these material dimensions to the fore.

Despite the tacit and emotional differences of owning, for example, digital or physical photographs, designs, books, magazines, and other possessions, Brynjolfssen and McAfee have argued that the world is nonetheless becoming increasingly digitized (Brynjolfsson and McAfee 2014). Companies and individuals are migrating to digital platforms as sales channels and digital delivery methods (such as Netflix, Steam, itch.io, society6, Shutterstock, and Vectorstock) are becoming increasingly secure and easy to use. When comparing the typical material repertoire of a visual designer prior to the popularization of desktop publishing in the 1990's (which included expensive specialist materials such as tilt drawing tables, exacto knives, layout boards, proportion scales, chemical solvents, print rollers, film, colour stats, technical pens, and letrasets, among many) digital goods are far less taxing in processes of creation, repurposing, manipulation, remixing, reworking, storing, broadcasting, sending, sharing, collaborating and publishing. However, digital goods emerge from very real, very material, infrastructure (Star and Bowker 2006). As explored in the next section, this particularly apparent in a South African context, where people's access to digital infrastructure are highly unequal.

The ubiquity of digital goods is closely tied to the emergence of cloud computing as an "invisible" home for data. Odom, Zimmerman and Forlizzi argue that digital goods are "placeless, spaceless and formless" (Odom, Zimmerman and Forlizzi 2014, 989). According to this argument they are placeless, because digital files which are stored remotely in the cloud can be accessed nearly anywhere, allowing them to be present in multiple locations. They are spaceless in that while material possessions take up space, digital possessions can "grow invisibly" as people are not entirely sure what they have in vast cloud back ups. And finally, they are formless, because material possessions can age, and show their history through chafes and stains, while digital materials can stay preserved in one state, and can be infinitely reproduced. The findings presented in this thesis refute claims of placelessness, spacelessness and formlessness.

While those who have contributed to a creative consensus are optimistic about the role that digital technologies can and will play in extending creative practice, critical accounts (Schäfer 2011, Zittrain 2006, Goggin 2011, Walton and Donner 2012, Walton 2014), particularly in South Africa, have curbed this enthusiasm. In the following section I relate some of these critical accounts, arguing that media consumption, production and distribution are tied to particular material configurations – which are themselves entangled with issues of class, race, context and culture.

### *Critical Perspectives*

While many accounts of networked creativity have drawn attention to the democratizing new possibilities offered by networked digital technologies (Odom, Zimmerman and Forlizzi 2014, Jenkins 2006), that lead to new creative identities (Balsamo 2011, Kafai and Peppler 2011), practices (Jenkins, Ito and boyd 2016, Jenkins 2003, Kafai and Peppler 2011), organizational forms (Delwiche and Jacobs Henderson 2013, Ito, et al. 2009), and learning opportunities (Gee 2005, Jenkins and Bertozzi 2008), others have challenged these claims of 'newness' (Perkel 2011). Scholars such as Schäfer, Goggin and Zittrain have drawn attention to the capitalistic and hegemonic commercial powers that pervade digital media industries, platforms and tools (Schäfer 2011, Goggin 2011, Zittrain 2006). Whereas scholars such as Couldry have complicated the notion of 'voice' (Couldry 2009) – echoing long held beliefs by Gayatri Spivak who argued that the question of "who should speak?" is a far less crucial than "who will listen?" (Spivak 1990, 59). In this view, a

discourse of democratization has given more attention to the power of production than its dependence on reception.

Mejias takes this skepticism further, by questioning the very logic of "the network", arguing that there is no such thing as the network, and that our participation in a multitude of divergent and overlapping networks are "variegated and complex" (Mejias 2013, xiii). Additionally Mejias critiques the political economy of the network, which, he argues, has become the dominant operating logic of late capitalism (Mejias 2013, 4). This logic is a "nodocentric" template, which organizes and describes the world in terms of nodes and links. In other words, only nodes can be "mapped, explained, or accounted for" (Mejias 2013), rendering a social reality that privileges nodes while discriminating against anything anodal. From a nodocentric perspective, progress is tied to becoming a part of the network – bridging "digital divides" (Bornman 2016), and filling in "participation gaps" (Jenkins, Ito and boyd 2016). Yet becoming a part of the network involves playing by a set of rules which commodify social labour, privatize social spaces, further the project of mass surveillance, and can reproduce social inequalities (Mejias 2013, 4).

The celebratory accounts that Mejias critiques have produced a false sense of homogeneity in respect to available technologies and the connected practices of users. In response critical scholars (Kruitbosch and Nack 2008, van Dijk 2009, Schäfer 2011) have asked whether these abstract universalizing depictions actually match empirical reality. Gitelman argues that when we write broadly of "media" such as "the web", "the internet", "the camera", or "the mobile phone" we naturalize, essentialize and cede agency to an entity that is by definition plural (Gitelman 2006, 2). Doing so casts technologies as if they are unchanging objects, with self-defining properties "around which changes swirl, and to or from which history proceeds" (Gitelman 2006, 8). In the context of this study, it is especially important to avoid such a perspective, and instead particularize technologies as infrastructure (Star and Bowker 2006): contributing to particular embodied experiences that reflect particular social, historical and cultural experiences of meaning (Gitelman 2006, 8).

Scholars such as Perkel have offered empirical case studies which show the diverse ways in which digital technologies and the web are implicated in media consumption, creative practice and distributions, which are tied to particular technologies and social worlds

(Perkel 2011). He cites examples that explore the work of Swedish music fans (Baym and Burnett 2009), and the divergent ways that different communities use YouTube (Burgess and Green 2009, Lange 2010). In a South African context, research on Hip-hop artists' use of ICTs (A. Schoon 2011, A. Schoon 2014, Pritchard and Vines 2013, A. Schoon 2016) for music production and distribution also offers contextual cases that demonstrate how practice and infrastructure are intricately connected. Schoon's ethnographic study showed how Hip-Hop heads who operate from a township in South Africa (and faced distinct challenges related to race, class and culture) appropriated second-hand computers and microphones to record their music in small backyard shacks. She described how this music was distributed on a translocal "ghetto internet" which consisted of platforms such as Datafilehost (where media has limited visibility online) and was then shared offline in co-located spaces via Bluetooth (A. Schoon 2016). This thesis contributes also contributes such an empirical case study that complicates the discourse of democratization tied to digital technologies and creative practice.

In the following section I draw attention to the particular configurations of digital technologies in South Africa and why it is important to take a socio-technical approach to them, which recognizes the centrality of materiality and embodiment in understanding creative practice.

**On participation 'gaps', 'digital divides' and the 'mobile miracle'**

As digital technologies shape, and are shaped by, contemporary creative communities and industries, scholars have raised concerns around the inequity of technological access and the resultant asymmetries in cultural participation (Jenkins, Ito and boyd 2016, Burgess 2006). For those who subscribe to "digital divide" discourse (Bornman 2016) there is a gaping chasm between those who have "access" and those who don't – "implying that what's at stake is limited to access to high-quality tools" (Jenkins, Ito and boyd 2016, 67). This "divide" is typically cut along positions of social standing, which are often related to dispositions of geography, age, race, class, education and gender (Carpentier 2015). According to this argument the solution to increased participation in cultural production is bridging the divide by making sure that everyone has access.

Participatory culture literature has typically framed these divides not in terms of access, but in terms of participation, problematizing the occurrence of "participation gaps". A

recent volume on participatory culture written as a conversation between stalwarts of the concept – Henry Jenkins, Mitzuko Ito and danah boyd (2016) – accede that earlier conceptualizations of "participation gaps" have relied on the assumption that "access to technology would give access to privilege when in fact that causality was flowing more decisively in the other direction" (2016: 70). In other words, access to digital technologies does not necessarily lead to new opportunities or grant the participant power, but in certain cases it could, in tandem with a broader constellation of resources that includes factors such as social connections, space, time, and mentorship. Considering this, the metaphors of 'gaps' and 'divides' are less than useful.

Mobile phones have often been hailed as the device that will connect Africa to the global information economy (Aker and Mbiti 2010), in some scholarship (such as the field of ICT4D) it has even been dubbed "the mobile miracle" (Loudon 2015). According to the latest statistics, South Africa has more than 100% mobile penetration. Nearly 65% of users in the Western Cape metro are able to access the internet using their mobile devices (Statistics South Africa 2017) – a staggering 20% higher than merely two years before (Statistics South Africa 2015, 52). Instead of framing this increasing mobile access as filling gaps and closing divides, Donner has offered the concept of "digital repertoires" to describe technology use in terms of both the technologies that a person has access to, and their capabilities in using them (Donner 2015). Having studied mobile technologies in South Africa, India and other developing contexts for an extensive period of time, Donner has found conceptualizations of "mobile devices", "mobile internet" and "mobile networks" severely problematic. He argues that these concepts obscure the diversity of configurations, modes, and gradations that manifest in particular embodied experiences of mobile devices and the internet (Donner 2015, 37-52). A "digital repertoire" refers to the "devices, networks, and services" users have at their disposal to "manipulate digital information", as well as their "skills to do so" (Donner 2015, 105). This repertoire determines the "effective use" of technologies. Donner's framing is particularly useful in complicating the optimism around mobile technologies in South Africa.

Thus, while the fuel of increased adoption might feed the hype about 'the mobile miracle', the realities are different. Donner (Donner 2015), for example, draws attention to the gradations of smart, feature and basic phones, and how they offer very different possibilities for action. 'Smartphones' are powerful handheld computers, which run

powerful operating systems and have the ability to run applications. 'Feature phones', while also being able to store and display media, and typically connect to the internet, offer far more limited options than smartphones do. And lastly, 'basic phones' are typically not internet enabled, and rely on USSD protocols to exchange data. While the distinctions of basic, feature and smart will shift, and capabilities of the devices will also change, Donner (2015) argues that there will always be such technical gradations which affect what people can and cannot accomplish with their phones in hand.

Consequently, when exploring the relationship between digital technologies and creative participation, it is important to be cognizant of the particulars. In the following section I introduce the theoretical approach I take in this thesis as a practice perspective, which brings together concerns around identities and infrastructure.

**A practice perspective: creative worlds and infrastructure**

Undertaking this research involved an investigation of people, their identities, activities and technologies in relation to one another. To do so I adopted a theoretical approach that sees practices (Lave and Wenger 1991) and social structures (Strauss 1982) as mutually constituted (Perkel 2011). This understanding of practice is attuned to both social and material contexts and draws upon a socio-technical understanding of infrastructure (Star 1999). In this view systems that enable creative activities are imbued with the social and institutional norms of practice. Thus, there are particular standards that determine the legitimate or authentic participation of creative practitioners in a broad spectrum of creative worlds.

In order to bring these concepts to bear on creative practices it was necessary to make a commitment to observing people's "real-life" practices, and an approach to seeing these practices as embedded in social structures (Perkel 2011). The concept of infrastructure is particularly useful in bringing together concerns around identity, social worlds, and practice; along with material technologies, their standards and conventions (Star 2002, Star 1999, Star and Ruhleder 1996). Visual creatives use, act, interact, relate, imagine, articulate, select, mute, enforce, and create through the elements around them - in other words, they 'practice' visual creativity. These systems provide infrastructure (such as people, communities, values, policies, rules and technologies) within particular situated contexts. Increasingly creative infrastructures include a wide range of digital technologies: hardware

such as MacBooks, scanners, tablets, modems, smart phones and hard drives; software such as the Adobe Creative Suite and visual design apps like PicMix; social media networks such as Gmail and Instagram; underground cables that transmit data in packages, from server to server or via cell towers or Wi-Fi routers. Creatives shape and configure their situated ecological conditions, and these conditions shape and configure the nature of their cultural production and participation. When an element in the system is absent, reduced or removed this affects how creative practitioners might need to configure their particular ecology to create and participate. From this perspective, technologies are both shaped in practice, and constitute the infrastructures of practice that are shaped in and between social worlds (Star and Ruhleder 1996).

Star argues that infrastructure is a relational property – it permeates the functions of any system and impacts on practice. Thus, the question is not just "what is infrastructure"? but "when and how the complex arrangements of technologies, practice, conventions, institutions, ideologies, and so forth become infrastructural to practices and social worlds"? (Perkel 2011). The particular affordances (Evans, et al. 2016, Nagy and Neff 2015) and composition of these technical systems and resources also shape how people learn and know to create, how their hands sweep over interfaces or press down on multiple keys, the 'ways of their hands' (Sudnow 1978) are guided by raw materials that, through processes of bricolage (Fuller 2006), give form to their creative expressions (Ingold 2012, Ingold 2013, Ingold and Hallam 2007).

In the following Chapter I extend this theorization of practice to show how particular technologies are infrastructural for participation in particular creative worlds. First, I would like to introduce who I am, and why I chose this particular research project. As Donna Haraway asserted, research and its findings do not appear out of a transcendent "conquering gaze from nowhere" as objective fact (Haraway 1988, 581). Seeing things in this way, she contends, is "an illusion, a god trick" (Haraway 1988, 582). In presenting this work from a critical constructivist stance (Kincheloe 2005) – a stance that sees knowledge as mutually produced between researcher and researcher, which I thoroughly account for in Chapter 3 – I would like to acknowledge my position and make explicit the perspectives I carried into this research project with me.

**Positionality: Counteracting the 'god trick'**

There are many reasons why I pursued the very particular topics of visual creativity and mobile digital media as the subject matter for my PhD. Among the most influential of these factors is where I am situated: for most of my post-graduate career I have occupied a desk in the Centre for Information and Communication Technologies for Development (ICT4D) at the University of Cape Town. The Centre in ICT4D comprises a multi-disciplinary group of researchers who are focused on harnessing information and communication technologies (ICTs) to create solutions for socio-technical problems in South Africa and other developing regions. The work produced in the centre scaffolds research into existing technological practices and the design of new technologies, exploring and designing for developmental issues. Since the early 2000's, the centre, like many other research centres based in Africa, has privileged a focus on mobile technologies owing to the rapid and widespread adoption of mobile handsets in African contexts.

During my MA project and for my PhD I was among a minority of Media Studies students stationed in the centre, producing this work as part of a larger project funded by Nokia (later Microsoft Mobile). The project was an interdisciplinary exploration of mobile content creation: using media ethnographies as the starting point for design projects, students worked toward re-conceptualizing mobile applications to facilitate creativity and digital participation "beyond consumption" of media. Nokia's research in Africa was an example of funding from corporate entities that target developing countries as emerging markets (Loudon 2015, 18 - 19).

As a PhD candidate in Media Studies, and a practicing visual designer, my focus for this project was to explore the imaging capabilities of mobile technologies, and the opportunities that these devices offered for participation among young people with limited access to resources. My research questions emerged from a review of literature that offered celebratory accounts of the role that "Web 2.0" and ICTs played in creative media production (Jenkins and Bertozzi 2008, Shirky 2008, Jenkins, Ito and boyd 2016, Benkler 2006) – what Dan Perkel (Perkel 2011) has described as the "creative consensus". I wanted to find out how mobile devices and applications intersected with the creative practices of young aspiring visual designers from low-income households in Cape Town, and whether this 'mobile miracle' was connecting more young people to creative communities of practice and learning, which I had personally experienced in my own

development as a designer. For my MA thesis (Venter 2012), and a number of research projects in which I participated as a research assistant (Walton and Donner 2012, Venter and Walton 2011) I explored the role of mobile technologies as a resource for learning and participation.

As a practicing visual creative myself, I appreciated reading Henry Jenkin's theory of 'participatory culture' (Jenkins 2009, Jenkins and Bertozzi 2008, Jenkins 2006) during my enrollment as a Masters student in Media studies, as it helped make sense of my own experiences as a practicing visual creative. Today, as the visual web proliferates on web platforms such as Facebook, WhatsApp, Behance, DeviantArt, Tumblr and Instagram; and visual design practice is synonymous with software such as the Adobe Creative Suite, Blender, ZBrush, Cinema 4D, Unity and ToonBoom; digital technologies, software, platforms and networks have become a vital part of the infrastructure that supports visual design communities and practices in the world. On a personal level, I consider myself to be a member of these communities and a practitioner of these creativities.

I learn about new techniques and tools over YouTube, gain inspiration from other artists over Instagram and Behance, follow a global flow of information over Facebook, Twitter, Vimeo, and discover new punk, and geek communities on Tumblr daily. I make games, digital paintings, comics, advertisements, music videos, animations, and a multitude of other things, on my computer, connected to the Internet, anywhere I go. I have a revolving and loose set of job titles, many of which did not exist pre-internet. Much of what I make, is inseparable from the technologies I use to make it.

The questions posed in this thesis have emerged from my own subjective experiences as a visual creative. Working in both mainstream and independent visual design industries in the city of Cape Town (from transnational advertising agencies, small digital games communities and running my own online business via Instagram and Shopify), I have noticed a marked absence of people of colour in these 'scenes': an absence which correlates to the statistics presented in a number of governmental reports (The Human Sciences Research Council African Micro-Economic Research Umbrella 2010, Human Sciences Research Council 2008, Department of Arts and Culture 2016). An assessment issued by the department of Arts and Culture in 2010 reported that 82% of visual artists in the Western Cape were white, revealing the slow transformation of visual industries (The

Human Sciences Research Council African Micro-Economic Research Umbrella 2010) post 1994. As ethnicity and class are intricately tied together in South Africa, owing to a history of apartheid, I set my focus on young people of colour who came from low-income households as a strategy to explore this absence from a systemic vantage point.

This research is based on my fundamental belief that creative worlds are a powerful force in our contemporary, increasingly globalized, cultural "scapes" (Appadurai 1996). I can see the value of creativity as a source of income, personal empowerment, establishing identities, for joy, for living meaningful and culturally rich lives and most importantly, a source of cultural change. If I possess a blatant optimism around the potentials and influence of visual media in how we see and understand the world and each other, it is because this optimism is influenced by my own experiences of place-making, coming-of-age and learning about the world through representative visual media.

While I was an insider as a fellow creative practitioner, I was also very much an outsider in conducting this research. A major limitation of this research is my position as a white person in South Africa who has little understanding of the everyday subjective experiences of young South Africans of colour. I only speak English and Afrikaans, and come from a middle-class household where language, culture, schooling and infrastructure has invisibly supported and affirmed my position in the world. For this reason, I present this research as stemming from a critical constructivist paradigm – where meaning was shaped between myself and research participants. I employed a number of strategies to foreground my own subjectivities in this work, a discussion to which I return in Chapter 3.

## Naming

Naming, in the context of my methodological approach, was a significant factor: readers will see subjects of this research referred to as 'participants', 'students', 'creatives', and, as explored in the following section, 'jammers' and 'kasi[10] creatives'. While at times unavoidable, I opted to not refer to participants as 'disadvantaged' or 'deprived'. I also steer clear of the broad classification of 'youth'. All three of these labels are loaded with politicized racial connotations: used to either describe individuals as disempowered, or, in the case of the latter, associated with delinquency or criminality, especially when prefixed

[10] I intentionally do not italicize words that are used in everyday South African spoken language. I define these words on their first use, and thereafter use them unmarked throughout the text.

with 'black'. I prefer to use naming in this dissertation that frames participants as active, creative social agents whose modes of identification are fluid. In keeping with a critical ethnographic approach, I predominantly use terms that participants employed themselves, or framed them in relation to their participation within this research.

For example, when needing a better descriptor than 'working class and poor creatives' to describe participants outside of class, I asked participants who remained in contact with me for an alternative collective noun. The term 'kasi creatives' emerged. Without exception these students hailed, or were now stationed, in neighbourhoods that were previously demarcated 'townships' under Apartheid rule. Colloquially, many students used the term kasi to describe these areas. Kasi is a South African slang word, which originated in Tsotitaal[11], and is derived from the Afrikaans word "lokasie" (meaning "location"). The term was once used to talk about areas that South Africans of colour were forced to live under the apartheid regime. Today the concept of "kasi style" refers to "certain social aspects of life" (Schwartz 2009, 74) in the township. It articulates a distinct way of life that is, at times, marked by the harshness of poverty, crime, substance abuse and promiscuity (Schwartz 2009). But it also articulates a way of being cool in youth cultures that live in the kasi[12].

While this term was proffered by a particular group of students who I introduce in Chapter 3, I can imagine that many students would not self-identify as 'kasi creatives' for a wide array of reasons. While the term is by no means a perfect descriptor, it simply describes where these young people are *from,* even as it does not entirely serve to frame their identities as creative practitioners.

**Research Questions and Objectives**

Given the above exposition, in this thesis I set out to understand how mobile devices intersect with creative practices in a particular social context in Cape Town. To do so, I asked the following research question:

[11] Tsotsitaal, also known as Iscamtho, is a 'criminal language' that dates back to the 1940s and 50s in Sophiatown, and was used to ensure secrecy among gangs. The language has become increasingly mainstream, with many phrases and words embedded in everyday South African speech.

[12] I have made a strategic decision in this dissertation to not italicize non-English words that are native to South African English, as a small but meaningful contribution to the decolonization of academic texts that come from South Africa. I describe these words on their first use, if not inline, then as a footnote.

1. How do aspiring creatives appropriate digital technologies, particularly mobile devices, as infrastructure for creative practices?

2. How do these practices change within the university context, and relate to professional creative worlds?

As my research sites were located on university campuses, I struggled to observe practices that took place outside of the university, particularly creative processes that took place within the intimate bounds of mobile technologies. Thus, I also asked,

3. What research methods can be used to supplement a classroom ethnography and understand how the materialities experienced by these young people might be shaping their creative practices?

**Summary and Overview**

In this chapter I set out to introduce the problem space that underpins this thesis: there is a lack of participation in cultural production among young poor and working class people of colour, whom have been severely disadvantaged by the institutional, educational, and cultural remnants of a system of apartheid. Recent studies have celebrated increased access to mobile devices among such previously disconnected people. In tandem with studies that have highlighted how digital technologies can assist in extending participation in creative practice, I wanted to see whether these newly available technologies were, indeed, contributing infrastructure for creative practice, and if so, in what way?

In Chapter 2 I describe the theoretical viewfinder that frames how I see practice, infrastructure, technologies, identities and social worlds as mutually constituted in distinct creative worlds, which embody particular ways of knowing, being, aesthetics, tastes and values.

In Chapter 3 I introduce my approach to this research as stemming from a critical constructivist paradigm – where meaning was created between participants and myself. I introduce my field site, which was based in two Extended Curriculum Programs (ECPs) for visual design in Cape Town. I observed 64 participants in class and interviewed 33 of them. I also introduce the 18 young people who became by key informants whom I dub

the "kasi[13] creatives". I observed, interviewed and spent a great deal of time with these young people to understand how their practices intersected with digital technologies, inside and outside of the university context.

While I employed ethnographic methods to generate data, I found that observing mobile creativity was particularly tricky. In many instances, students used their phones creatively outside of class, or had relied on them more prior to attending university. In order to explore how mobile devices act as creative tools, I devised an experimental method based on the tradition of the "game jam", which I re-purposed to formulate a "creative jam". In this chapter I also expand on how data was gathered, analyzed and presented as case studies in Chapters 4, 5 and 6.

In Chapter 4 I explore the creative practices of kasi creatives outside of university. For many of these young creatives, their childhood media consumption strongly reflected the lack of African voices in the South African media-scape, yet many were active agents in ascribing their own meanings to the stories and characters they had encountered through creative fandom. During formal schooling, visual arts practices were seldom supported, and many students only gained exposure to visual artistic practice or digital creative skills outside of their formal schooling. In this context, mobile devices offered a powerful tool for young people to gain exposure to creative worlds and generate their own creative artefacts. Mobile technologies, particularly built-in cameras, allowed students to forge their own representations (through practices such as documentation, selfies and image editing), and communication (via a 'pavement internet' where information is shared over free or low-cost chat services). In certain cases, students would grab 'digital takeaways' such as videos, where media was downloaded and consumed offline. I use the concept of a media 'patchwork' to contrast these collections of contained and curated personal media, and the systems used for creativity, with cloud-based, Web 2.0 networks. These networks, which underpin the 'creative consensus' and consist of users who are able to access and see nodes as constantly transmitting and receiving communicative flows (Mejias 2013), were in stark contrast with my observations. Yet despite these anodalities (Mejias 2013) these young people still found ways to participate in creative visual cultures.

[13] 'Kasi' is slang for "townships" – low-income areas established under Apartheid for people of colour – but also describes a distinct aesthetic and cultural style.

Students describe starting up small brands where mobile devices served as their prime mode for advertising to, and communicating with, their clients. In such cases creatives employ innovative distribution systems to conduct their business. These case studies epitomize how infrastructure and creative worlds are mutually constituted. Mobile devices are infrastructural to a certain range of creative practices that 'live' in a media ecology of free and low-cost applications and workarounds – patched together. In turn, these media patchworks constitute the backbone of particular creative worlds.

Chapter 5 relates how participants experience the relationship between technologies and practice within the university. From the case studies presented it becomes clear that for participants to be 'legitimized' within formal industries they have to have access to, and master, a very particular, exclusive and specialist range of infrastructure. Material needs become a source of discomfort and stigmatization for students who hail from low-income households. Thus, there is an enduring distance between the technical equipment, spaces and mentoring opportunities available to students outside of the university context and those available within the university context.

In Chapter 6 I dig deeper into the affordances of mobile technologies observed 'up close' by relating findings from a creative jam. During this session, I explored the potentials of mobile devices as authoring tools for a select group of kasi creatives. Through a period of focused creative work, we discovered how mobile applications were only generative for particular productive activities. Mobile ecologies present interactions that are build on a set of infrastructural standards and revenue models that limit their creative appropriations.

In this sense, I argue that the discourse of democratization as celebrated in the 'creative consensus' should be approached critically. While providing creators with an extended toolbox, Web 2.0 technologies such as visual design software, applications and platforms also encode existing cultural norms, which can impede on creative agency and threaten the richness of local creative and cultural practices. In light of recent calls for decolonization, this research points at new intersections for research and development.

*Chapter 2*

# A PRACTICE PERSPECTIVE

In the previous chapter, I highlighted a scholarly consensus that claim pervasive consumer electronics are connecting young people to creative worlds where they can express voice, participate in the attention economy that drives global socio-economic agendas, and build creative careers. I outlined how this notion of democratization is especially welcome in the city of Cape Town, where current socio-cultural debates revolve around asymmetries of power in cultural production and participation. However, there is a need to empirically investigate how digital technologies, such as widely available mobile media, intersect with creative practice, in order to ascertain whether there is any merit to these universalizing claims. While quantitative data shows a marked increase in access to information communication technologies, there are few qualitative studies that show whether, and how, this phenomenon is related to increased participation in creative cultural production. In this section I build a vocabulary to holistically investigate the relationship between digital technologies and creative worlds.

Below, I paint a different picture of creative participation, by theorizing an understanding of creative *practice* (Lave and Wenger 1991, Wenger 1998) as the participation of practitioners who *identify* as creatives, are legitimized within distinct *social worlds* (Strauss 1978, Strauss 1982, Strauss 1984), through their *embodied knowledges* (Ingold 2013, Ingold 1996), which are mutually constituted with *infrastructure* (Star and Ruhleder 1996, Star 1999). I offer the term *creative worlds* to describe a broad subset of creative practices that take place in artistic fields, and gain particular socially situated capitals (Bourdieu 1986, Bourdieu 1993) and social semiotic meanings (van Leeuwen 2005).

## Practice in Social Worlds

As Perkel argues, "*practice* is an ambiguous term" (Perkel 2011, 53): we use it colloquially to refer to people's everyday activities, but there is also a specialized meaning of the word. Here practice refers to a particular range of theories that "address the production and reproduction of specific ways of engaging with the world" (Wenger 1998, 13). Although theories of practice are also concerned with the everyday, they expressly emphasize the social systems of resources in which these practices are situated (Wenger 1998, 13). While

*practice theory* is not a unified concept (Perkel 2011, 53), conceptualizations have mostly grappled to transcend the agency-structure dualism in the field of social theory (Warde 2005, Reckwitz 2002, Postill 2010). This dualism represents two opposite ways of framing the person-society connection. Structure refers to the arrangements of society that shape the choices that an individual can make through socialization. Agency, as its counterpoint, is centred on the capacity that individuals have to act and make their own choices as autonomous beings. A practice perspective forges a middle ground. In this view, the everyday practices of individuals are partly constituted by individual agency and partly constituted by the "historical, socio-cultural character of the worlds they inhabit" (Perkel 2011, 54). A practice perspective is a dynamic one, where human activity sits in the middle between the subject and the social world – one continually producing and re-producing the other.

Synthesizing Lave and Wenger's concept of *communities of practice* (Wenger 1998, Wenger 2000, Lave and Wenger 1991) with the perspective of *social worlds* (Strauss 1978, Strauss 1982, Strauss 1984), Perkel works towards a useful theoretical description of "the worlds in which people engage, the relationships between these worlds and identities" and, of particular interest in my thesis, how these relate to "technologies of practice" (Perkel 2011, 54).

It is important to note that these terms are not simply interchangeable – while most communities of practice are social worlds, not all social worlds are communities of practice (Perkel 2011, 63). In my analysis of information communication technologies as infrastructure for creative practice, I follow Perkel's formulation: where *social worlds* are used as an alternative to *communities of practice* while incorporating understandings from the theoretical formulation from both.

In such an understanding of communities of practice (COP), the focus is drawn away from the "baggage" of the term "communities" (Perkel 2011, 55), due the lack of specificity of how the term should be understood, and is instead framed as the "social locus in which a practice is sustained and reproduced over time" (Duguid 2005). Here, the concept of "social worlds" (Strauss 1978) widens our perception of this "social locus".

According to Strauss (1982), social worlds are bound by networks of communication, but not reduced to them; they are fields of interests that can revolve around various categories

or industries. You can broadly speak of, for example, *art worlds*, as Becker (Becker 1982) does, where 'Art', stemming from the Romantic era in the 18th century, is defined within the context of a particular historical continuum (Perkel 2011). Or, in a more contemporary view, you can speak of the social worlds of, for example, YouTubers.

Defining social worlds is difficult, they are by definition amorphous (Perkel 2011, 56) and range from formal occupational industries where institutional standards are literally the law, to youth subcultures – where listening to the right music, and dressing the part, gets you in. In both cases, participants need to *legitimize* their activity.

Yet social worlds are constantly defining, defending and challenging how such legitimization happens (Strauss 1982). Whether that involves a degree, or an encyclopedic appreciation of a movie franchise, depends on the social worlds under question. A central concept that Strauss calls upon to help with this fuzziness is the idea of *authenticity* (Strauss 1978, 123) – whether someone is genuine or fake, moral or immoral, legal or illegal, and so forth. These social judgments forge the boundaries of social worlds, and are fundamentality nebulous and plural. As these judgments of legitimacy and authenticity cut through social worlds they become segmented, form *sub-worlds* (Strauss 1978), and might *intersect* with other social worlds. When simply looking at the social worlds of *YouTubers*, for example, these can include sub-worlds of "haul girls" (Petridis 2014) – whose video-diarized shopping hauls are an exercise in both "conspicuous consumption" (Verblen 1899) and the crafting of youth lifestyle brands (Petridis 2014). Haul girls, in turn, could also have identities as "Beauty Vloggers" (Banet-Weiser 2017), for example, where a different focus and practice underpin their participation.

These worlds are constantly in flux. Changes in technologies, spatiality and organization, constantly shift the goal posts in how these worlds work, and how one has to go about gaining legitimation in them. I will return to the importance of these factors in my discussion of *infrastructure* later in this chapter.

Despite this, according to a practice and social world perspective, one's *identity* is something that is "formed and transformed through ongoing social and historical practice" (Perkel 2011, 58). In, for example, the creative worlds of YouTubers, it is "formed out of individual action in social worlds that shape what it means to be creative" (Perkel 2011, 65). Wenger's account describes identity as a "pivot between the social and

the individual" – as a process of their mutual constitution (Wenger 1998, 145). Lave and Wenger (Lave and Wenger 1991) see the formation of identities as a process of *learning,* where people follow a trajectory from "newcomer" to "old-timer" through *legitimate peripheral participation* (LPP). By acquiring knowledge or skill, through legitimate practice, a person gains an increasing sense of identity as a practitioner (Lave and Wenger 1991, 111). In Wenger's theorization there are three "modes of belonging" that participants can follow in forging their identities: they *engage* in the process of meaning-making that defines the world, they *imagine* how their own experiences compare to other participants, and they *align* their own practices to fit into this world which they have engaged with, and given imaginative space to (Wenger 1998, 173-187).

Strauss' formulation of legitimation has a lot in common with Wenger's (Wenger 1998) notion of *participation* and *reification*. Participation is "the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises" (Wenger 1998, 55) and reification is the "process of giving form to our own experiences by producing objects that congeal this experience into 'thingness'" (Wenger 1998, 58). In other words, participants produce the meanings that constitute the social worlds in which they participate, forging the discursive and material dimensions of their participation. In a following section, I introduce the concept of infrastructure (Star and Bowker 2006) to describe how various systems also serve to reify particular envisioned practices.

Another concept that Strauss offers that helps us understand how participation operates is the notion of *standards* – whether spoken or unspoken – that participants have to embody (Strauss 1982, 181). While standards are also in flux, they can be made explicit through formalization – through coaches, lecturers, teachers, reviews, policy documents and so forth. In the case of University accreditation, as explored in chapter 5, these standards are crystallized in a curriculum. Whereas, when it comes to more informal creative practices or communities, these standards can be a lot more fluid. Yet, in both cases there are metrics for measurement - the currencies of these creative worlds. In these social worlds, accreditation, prestige, popularity, money or visibility, to name a few examples, are what is "at stake" (Bourdieu 1993, 30).

**The currencies of creative worlds**

While the previous section introduced my understanding of practice, as mutually constituted with distinct, albeit amorphous social worlds, and formations of personal identities as creative practitioners, this section will expand on the currencies of creative worlds – that is, how practices are valued, particularly as these capitals move between creative worlds. To formulate such a theorization, I have borrowed from the sociology of art, including theories by Becker (Becker 1982) and Bourdieu (Bourdieu 1986, Bourdieu 1993, Bourdieu 1977). While I use Bourdieu's concept of capitals, and Becker's notion of resources and distribution systems, I speak of these physical and symbolic goods as *currencies* – to draw attention to the ways in which these mediums of exchange change in value as they travel between creative worlds.

Accounts of a prevailing *participatory culture* in the previous chapter spoke about the increasing dismantling of so-called *art worlds*, and as such, in this chapter, while I apply these theorizations, I draw them out to be applicable to a broadening concept of *creative worlds*. My definitions of creative worlds can be seen as an umbrella terms that pulls together social worlds that are oriented around distinctly visual creative practices – whether that includes photography, design, art, sketching, sculpting, making, video-editing, self-portraiture, self-expression, fashion design, visual content curation, and so forth. These could include national or transnational social worlds of (capitalized) Art or Design, but they also include the social worlds of smaller niche, or sub-world creative communities, such as sub cultures, media fandoms or participation oriented around a particular website, such as DeviantArt (Perkel 2011) or YouTube (Burgess and Green 2009).

Bourdieu's theorization of a social *field* (Bourdieu 1993) is a useful roadmap to follow when discussing particularly the structure of *artistic* social worlds, or *creative worlds,* as I will refer to them moving forward. Bourdieu would pull together creative worlds as examples of "fields of cultural production" that revolve around the "production, circulation, and consumption of symbolic goods" (Bourdieu 1993, 9). They are comprised of a "structured space of positions in which the positions and their interrelations are determined by the distribution of different resources or *capital* (Bourdieu 1993, 9). Bourdieu's theorizations include a wide array of terms and concepts which I use throughout this dissertation to point at the *capitals* of different creative worlds: how they intersect, are distributed, compare or manifest within divergent creative worlds.

In relation to his concept of the *field,* Bourdieu introduces the central concepts of *habitus* to describe "the set of dispositions, and dispositions as permanent structures of perception and evaluation which govern how people act" (Maanen 2009, 58). Dispositions, which are active within a person's *habitus*, can be achieved through a process of learning, which Bourdieu sees as an accumulation of *symbolic capital*. In his understanding of capital, it "governs success in the field and the winning of the external or specific profits which are at stake in the field" (Bourdieu 1993, 30). What this "success" or "winning" entails is, of course, relevant to the social world in question. In terms of contemporary creative worlds, these might include visibility, prestige, and celebrity, or measured in metrics such as social media followers.

Bourdieu distinguishes between three distinct forms of capital: economic, social and cultural. The first is the most materialized form of capital, *economic capital* that can be turned into money and owned (Maanen 2009, 59). As opposed to *social capital* and *cultural capital,* which are "capital in a symbolic form" (Maanen 2009, 59). Social capital consist of the resources that stem from a network of relationships, where the forms of capital owned by the members of these networks are implied to be at the disposal of the person who has access to these relations. Today, we might call these "contacts"– a pillar of Benkler's asserted "*wealth* of networks" (Benkler 2006), and central thesis to the colloquialism, "it's not *what* you know, but *who* you know".

Cultural capital, in turn, is a form of knowledge that equips the individual with "appreciation for, or competence in deciphering cultural relations and cultural artefacts" (Maanen 2009, 59). Cultural capital, in Bourdieu's theorization, exists in three states: it can be *embodied* or *incorporated*, in the sense that an individual has a particular disposition in which cultural capital is intrinsically obtained. This form of capital is often veiled in that it is accumulated over years in the form of socialization, through for example, education or upbringing. Secondly, cultural capital can also be found in an *objectified* state – in the shape of material belongings such as paintings, devices, tools, instruments and so forth. And lastly, cultural capital can be found in an *institutional* state – where degrees, diplomas, titles and other forms of recognition represent the admission of the qualified person to specific parts of the labour market. In this way, the capitals of a creative world can potentially transform, from social to cultural to economic, and so on.

In this section I articulated the currencies of creative worlds and how symbolic goods are valued in context, whereas the following section brings such a theorization back into the tangible world. In Bourdieu's view participation in creative worlds is always intricately connected to material and symbolic capital, whereas Becker's (1982) articulation translates these ideas into the palpable 'stuff' that constitute practice: *resources*.

**Technologies of practice**

Becker's theorizations of resources include *human resources*, such as teachers, apprentices, peers, and so forth, and *material resources* that include the technologies, spaces, and supplies that a creative needs to produce their work. These include *media* such as "brushes, paint, canvases, computers, digital tablets, software, instruments, paper, and so forth" (Perkel 2011, 71), but also the networks that connect these practices.

Becker's view overlaps with Wenger and Lave's conceptualizations of the 'technologies of practice' which embody in part, the history of practice, but also carry with them the history of the cultural heritage of a practice (Perkel 2011, 61). As this thesis revolves around the appropriations of technologies for creative and cultural practices, these cultural heritages are a significant factor. Strauss would argue that those who are most experienced within a social world are also experts in the technologies that shape that world (Strauss 1982, 180). Technologies are neither developed outside of the social, nor are they completely deterministic in forging legitimate practice; people, institutions and so forth form them over time. As Perkel notes, in Wenger's terms "technologies are reified forms of participation in social life" (Perkel 2011). In Bourdieu's terms technologies constitute the objectified cultural of creative worlds.

Exploring how technologies of creative practice are shaped in the first place, Human-Computer Interaction (HCI) scholar Jeffrey Bardzell articulates three theoretical traditions of creativity that can frame the relationship between authors, creativity and authoring tools or media.

Firstly, from a HCI perspective, designing creative tools are seen as the rationalistic and intentional evolution of tools that "better serve" the creative process (Bardzell 2007) – in terms of its "professional discourse" (Schneiderman 2002). Such a theorization echoes Wenger's notion of technologies as reified forms of practice. Thus from an HCI perspective the "ecology of creativity" is legitimized through particular "expert practices"

– as professional productivity or meaningful vocation (Bardzell 2007, 15). Yet, Bardzell contends that while such a view greatly simplifies the design of systems, it defines creativity "*a priori* in cybernetic terms more friendly to computers than to the culturally diverse and rich practice of creativity" (Bardzell 2007, 13).

Secondly, Bardzell identifies a post-structuralist view of creative tools, which emerges from Michel Foucault's seminal essay "What is an Author?" (Foucault 2000). Here the author of a creative work is seen in terms of their "author-function" - their ability to manifest the "discursive set" through which their work will be constrained (Foucault 2000, 211). For example, if a newly found work of art were identified as a Picasso, or Matisse, these works would be read through the larger body of works, the artist's biography and history, and as such affects our understanding of the work. In relation to digital authoring technologies, we might associate particular media forms with particular creative worlds. Take, for example, the visual discourse that are associated with capturing video on a GoPro cameras. Typically this would involve strapping the camera to a rig on a moving person, object, or animal. GoPro has developed a distinct way of filming high action scenes that, in turn, have become a recognizable visual style for a particular genre of contemporary video. GoPro video, with its extremely wide "fish eye" lens and high frame rate, are synonymous with extreme sports photography and film. All GoPro footage can thus be read as GoPro footage to the discerning eye. In tandem with this understanding of the author self, a theory of creativity follows: that creative work is not done at the level of the individual, but at the creation of new discursive grammars – new sets of rules that others might transgress in their own creative processes.

Related to this work is Barthes's concept of "intertextuality". In Barthes's theorization, all creative work emerges from already existing cultural systems (Barthes 1977, 142-148). The filter sets that are available in Instagram, for example, simulate the effects of old analog film cameras, and thus evoke a kind-of aesthetic nostalgia. This view of creativity has informed more recent theories of media, such as Bolter and Grusin's (1999) notions of "remediation" – where "new media", such a digital technologies, is seen as the refashioning of "old media", a genealogical evolution of print, photography, television and film. Bardzell (2007, 17) argues that a post-structuralist view of technologies of creative practice see them as

> *the juxtaposition of sign systems (in which authorial identities are implicated), which occurs in the context of play, and results in artifacts that are significant not for what they say, but for the ways they materially contribute to the generative capacity of the discursive rule-set from which they operate.*

Thus, visual authoring tools provide particular sign systems that operate from particular discursive rule-sets.

Lastly, Bardzell articulates a technologically determined theory of creativity, as read through the philosophies of Ellul (2003) and Benjamin (1968). In this view the creative is "conditioned" by technology (Bardzell 2007, 18). Changes in technology change the techniques of production, and by extension transform how creative practice is experienced, its meanings, and thus "the nature of culture itself" (Bardzell 2007, 18). McLuhan shares this view of media as "extensions of us", as "prosthetic technologies" which replace our sense ratios, and thus form our basis of knowing, understanding (McLuhan 1964) and creating (Bardzell 2007, 18). This work echoes the more recent claims of Lev Manovich, a stalwart of "software studies", that new visual languages of digital creativity are made possible "by certain forms of productive convenience" built into authoring tools, such as Adobe After Effects (Manovich 2006).

Manovich argues that while authoring software have interfaces that emerged from its analogues to traditional design and are thus remediated, (for example, early Photoshop mimicked the functions of a darkrooms) it is evident for him that software applications are moving toward the "logic of computing" (Bardzell 2007, 26). In Manovich's view, this logic manifests in authoring software that now have characteristics that loan more from automation, interoperability, vectors[14], and so forth, than, for example, simulating the texture of drawing charcoal. Manovich specifically looks at the standardizing powers of interfaces such as the Adobe Creative Suite to "herd" procedural creativity in pre-determined ways. Although these programs now offer dozens of functions, which, in

[14] Vector graphics represent images as polygons consisting of nodes in computer graphics. Vector nodes have defined positions in relation to each other and can thus be rendered at any resolution without losing any image fidelity. Vector graphic are standard in visual design as the file sizes are relatively small (rendering images as mathematical curves) and easily adaptable.

combination, are capable of thousands of processes, the fundamental properties of these functions are designed.

In all three of Bardzell's cited approaches to authoring tools, they are inscribed with power – whether they gain their shape from so-called 'professional' practice, the creators of the discourses of authoring functions, or the determinative nature of tools that shape the outcome of creativities. In the 'creative consensus', many scholars have paid close attention to the proliferation of authoring tools, and their powers to extend creative practice. Scholars such as Schäfer, Goggin and Mejias, however, have paid attention to the politics of power and control inscribed in these systems (Schäfer 2011, Goggin 2011, Mejias 2013), and how these shape the agency of creators. From a decolonial perspective one might be pressed to ask: Of which visual histories and cultural heritages are these automations continuations? And how might these choices shape the creativity that emerges from the discourses that these technologies provide?

Returning to Becker, his discussion of *distribution systems* follows a similar slant. In his theorization, creatives "produce what the distribution system can and will carry" (Becker 1982, 129). Becker sees these distribution systems, which we can extrapolate to include digital distribution systems in contemporary creative worlds, as playing a powerful role in not only what creative worlds see as legitimate, but also in terms of what creatives will even attempt to create. Take, for example, Facebook, which only recently has allowed for the upload of 360 degree videos. Users can now upload videos in this format, and share them with others, whereas previously the standards of the platform would not allow for it. However, Becker's stance is not a determinative one, he adds that in cases where work "does not fit, and thus stand outside the existing system" (Becker 1982, 130) creatives might attempt to start completely new distribution systems, forging alternative creative worlds. As a digital games enthusiast and occasional video game maker, I am part of a community of both amateur and expert game designers who are passionate about short, experimental and collaborative games. In our community of practice, we create short conceptual game prototypes and also produce our own hardware with which to play these games. Given the social dimension of these games, and the lack of existing spaces within which others could appreciate them, we devised our own pop-up arcade[15]. Now, a few

[15] The event is called Super Friendship Arcade

times a year, we display our games for others to play and create revenue by charging entrances fees.

Technologies of practice and distribution systems are thus both reified forms of participation, "whose meanings are produced and reproduced in ongoing social practice within and among multiple social worlds" (Perkel 2011, 75). However, while this section's focus technologies in relation to the social worlds have been useful to position, for example, authoring tools as reifications of practice, such a focus can obscure social and organizational dimensions. Bowker and Star's (Bowker and Star 1999) concept of *infrastructure* is especially handy in navigating the complex role of technology as a *socio-technical* system.

**Infrastructure for Creative Worlds**

Speaking of *infrastructure* might conjure up images of the technological and material substrates of social life – we think of plumbing, highways, optic fiber cables, railroads, and so forth. But along with such typically envisioned hardware, infrastructure as a scholarly term also includes policies, conventions, and other political-economic elements (Bowker and Star 1999). Infrastructure is a relational concept: socio-technical systems only *become* infrastructure in relation to practice (Star and Ruhleder 1996, 113). And as Star argues, the majority of social and historical analysis that revolves around visual arts has "neglected the details of infrastructure within which communities of artistic practice emerge" (Star and Bowker 2006, 233).

For Star, understanding technological systems as infrastructure starts with a consideration of the mundane (Star 1999, 379): the switches, the plugs, the buttons, the wires, the standards, the settings, and so forth. Considering the invisible *master narratives,* the "the voice of the unconscious centre" of a technology (Star 2002, 119), that are inscribed within infrastructural components opens up the work of research to a "more *ecological* understanding of workplaces, materiality and interaction" (Star 1999, 378). This micro-focus, on the pulleys-and-levers of everyday life may also generate "social justice agenda[s] by valorizing previously neglected people and things" (Star 1999, 378).

Parenthetically, the metaphor of *ecology* is frequently employed in Star's theorizations of infrastructure, and is used to describe the immersive and environmental dimensions of media and information communication technologies. While technologies become

infrastructural in practice, the ecology metaphor is useful to describe how human bodies, on a social, cultural and psychological level, experience media. I will expand on this metaphor in the next section.

Working towards a relational definition of infrastructure, Star and Ruhleder (1996) proposed a number of qualities that can define infrastructure. Firstly, the technicalities of infrastructure are embedded into social practice; it is "sunk into and inside of other structures, social arrangements and technologies" (Star 1999, 381). The use of Photoshop as a design tool, for example, consisting of a software package, that runs on a hardware system within an operating system, powered by electricity which is wired into a home or office, transmitted from a local base station, is not a property of digital creativity alone, but rather embedded in the nature of computer-supported work broadly.

In addition, Infrastructure is transparent in that it invisibly supports tasks (Star 1999, 381). Yet technology systems that support visual communication might work as infrastructure for some groups and not for others. A designer who works in an air-conditioned advertising agency wouldn't necessarily question how much data or electricity it costs to download readymade design elements from an open source website, or question whether they would be able to edit the files with the software on their machine. A low-income designer who generates digital artefacts on their phone would carefully ration data and electricity, and their devices might not be able to open the file. In this sense, what is infrastructure works for some, presents an obstacle for others. In this way, artefacts have politics. Star cites the examples of a city planner in New York who made the policy decision to make the height of the automobile bridges that crossed over the Grand Central Parkway low. This rendered these bridges too low for public transport buses to pass under them. This would effectively bar poor people from accessing the richer New York suburbs – "not by policy, but by design" (1999389).

Furthermore, infrastructure is used beyond a single event or site (Star 1999, 381) – digital design is one function that is supported by technology systems that serve a multitude of other functions. Mobile devices might support capacitive touch-screen systems that support drawing, but this same infrastructure supports, for example, the more rudimentary need to capture signatures at a bank.

As mentioned before, in relation to technologies of practice, the infrastructure of visual design is learned about in a community of practice (Lave and Wenger 1991, Star 1999, 381) for use within particular social worlds. In this way, infrastructure both shapes and is shaped by the conventions of the community under question (Star 1999, 381).

Infrastructures embody standards. Socio-technical systems, platforms, hardware, software and conventions plug into other infrastructures and tools in standardized fashion (Star 1999, 382). Scholars such as Lev Manovich (Manovich 2006), for example, have explored how certain functions in Photoshop are established, categorized, and used as the basis for future developments and functions. These functions in themselves are organized around compatibility and optimization of computational structures – such as standards in graphic cards and operating systems. Infrastructure is thus fixed in modular increments, building bits and pieces over time, a careful negotiation, always in conversation with the other systems that pertain to the social worlds under question. While built on what came before, infrastructure also inherits the strengths and limitations of the systems upon which it is built (Star 1999, 382).

Though infrastructure is invisible, it becomes visible when it breaks: the typically invisible innards of systems make their functions known when in dysfunction. Take, for example, a desk at the library – when a student attends the library and works from the desk, the desk is an invisible support. Yet, when the desk becomes rickety, or a leg breaks, the student is forced to realize his or her dependence on the function of the desk to work comfortably. As infrastructure changes, so do the social worlds built upon them, and in turn, the standards for legitimation change too. Framed through an infrastructure lens, my objective in this thesis is to understand how information communication technologies are *infrastructural* to various creative practices for a group of young people in Cape Town.

**Creative worlds, materiality and embodiment**

Thus far, I have theorized how creative practice is mutually constituted with participation from creative practitioners in overlapping social worlds, where technologies and materials are infrastructural to participation, which is negotiated through standards and conventions, and measured in distinct material and symbolic currencies. Yet, studies of digital technologies and creative worlds have perhaps skimmed over the most significant trait of 'being creative' – that visual creativity is an embodied condition.

Creativity, and visual creative practice, emerges from subjective positions, driven by divergent motivations, psychological states, inspirations, and a wide variety of factors that form part of the full cognitive suite of being human (Ingold 1996). In this section I draw attention to the embodied and material dimensions of visual creative practice, and employ the metaphor of ecologies to describe media and material as environments that offer affordances for creative action.

Erstwhile theorists and philosophers (see Thomas Carlyle, Friedrich Nietzsche, and D.H Lawrence, to name a few) believed that creativity was something that was divinely bestowed upon a creative person: Talent and genius were thought to originate from the emotional sources or cognitive achievements of an individual (Tanggaard 2012). However, newer research into creativity and creative practice has shifted gears in our understanding of creativity. Tanggaard argues that creativity "exists in the dialectical relation between individuals and materials in social practices" (Tanggaard 2012, 24). It is no wonder, then, that the majority of legitimized talented artists and so-called geniuses fell into the upper classes in Bourdieu's France. From this understanding the ability to participate within such esteemed high-culture spheres "presuppose not only dispositions associated with long establishment in the world of art and culture but also economic means...and spare time" (Bourdieu 1984, 75).

Tanggaard (2012) formulates such a socio-material theory of creativity based on three theses: creativity is an everyday phenomenon; that creativity happens through humans and material tools; and that there is a close relationship between *continuity* in creativity and renewal (Tanggaard 2012). For Tanggaard, people are creative in their every day tasks by making objects function in new ways. However, one cannot make something within a vacuum: we create from the *affordances* of the materials around us to shape anew – they offer us resources (Becker 1982).

Donald Norman first coined the term *affordances* to refer to the "perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used (Norman 1988, p.9)". Affordances represent a "relational approach to understanding how people interact with technology" (Evans, et al. 2016, 35), and make apparent "possibilities for action" (Evans, et al. 2016, 36). Affordances neither belong to the technology/medium, the individual's perceptions, nor the environment; but

the relationship between them. While the materialities of creative technologies can shape creativity (as argued earlier in this chapter), individuals also have agency it their use of such technologies.

Much of Tanggaard's thinking around creativity as an innately material practice is an extension of the communities of practice model (Lave and Wenger 1991, Lave 1996) and stresses "a truly relational understanding of the processes of thinking, learning and creativity". For practice theorists "cognition is a matter of understanding practice", and "learning involves changes in participation in social practices" (Tanggaard 2012, 22)". Creative practice thus gains form from a *medium*, through hands and eyes (Ingold and Hallam 2007), and embodied knowledges that are cultivated through repetition and practice. The *ways of our hands* (Sudnow 1978), and our capacity to create, are also situated and environmental – subservient to the spaces and places in which we find our bodies. As Star and Bowker have argued our bodies can also be infrastructure for practice (Star and Bowker 2006).

An expert on the matter of hands, anthropology, and making, Timothy Ingold has written many books and articles on the subject of creativity (Ingold 2012, Hallam and Ingold 2007). For Ingold, all cultural production happens within material constraints, through processes of 'making' (Ingold 2013). He defines *making* as a process of improvisation with the media 'at hand' – that which is available to the creative practitioner within their embodied state. This idea has long been taken as a given in theories of situated learning and communities of practice – "learning is a matter of *understanding in practice* rather than *acquiring culture"* (Jean Lave, 1990, in Ingold, 2013. Emphasis added). For Ingold, creative epistemologies are cultivated through "the generative currents of the materials" (Ingold 2013) and the physical body. A medium gives our skills and embodied knowledge a "habitual setting for practice" and provides "a locus for expression" (McCullough 1998, 192-193).

McCullough formulated a description of creative practice as the relation between our hands, eyes, minds and the ecology of media that are at hand. Hands, "by pointing, by pushing and pulling, by picking up tools" act as our conduits for expressing our will into the world (McCullough 1998, 1). But this conduit also flows in the other direction: "hands bring us knowledge of the world. Hands feel. They probe. They practice (McCullough

1998, 1)". In this approach to creative practice knowledge is experiential, and comes to an individual through the acquisition of skill: that which is learned by doing, following demonstration, and "sharpened by practice" (McCullough 1998, 3).

In this framing, creative *mediums,* not only have inscribed in them implications for how and why things are made, but also how creatives *know* to make: creatives follow the flow of "intuition in action" (Ingold 2012). While Ingold predominantly unpacks these ideas in relation to traditionally "physical materials", McCullough (McCullough 1998) argues that these ideas can be extended to think about digital media as materials (Dourish and Mazmanian 2013) through hands in much the same way. Digital media does not exist in the conceptual domain "because [they] provide hard constraints and affordances in much the same way as physical artifacts do" (Leonardi 2010).

The metaphor of *ecology* in relation to media was first introduced in North America among communications scholars: 'Medium theory', as coined by Marshall McLuhan (Lum 2006), has very recently experienced a revival (Scolari 2012). Neil Postman officially introduced the metaphor in 1968, using it to define the study of 'media as environments'. For Postman, the introduction of new forms of media would always reconfigure the existing state of relations, much like Strauss has argued that changes in technologies, spatiality and organization can shift the boundaries of legitimate practice within social worlds (Strauss 1982).

Yet this particular brand of the theorem was highly criticized by a broad spectrum of scholars for its narrow view of media as somehow divorced from cultural and social factors – especially from those in the *mediatization* paradigm (Hepp 2013). This paradigm sees media as shaping and framing the discourse and processes of political communication, as well as the societies in which that communication is embedded. Scholars such as Livingstone and Lunt claim that as media changes, so too do their effects on institutions and practices in society (2014).

Those in the "social shaping of technology" school of thought also found media theory too technologically determinist in it's view of media-human relations (MacKenzie and Wajcman 1999). Trete and Mattoni contend that this scholarship argued that "technologies do not directly generate social consequences, but they operate, and are

operated upon, in a complex social field" (Trere and Mattoni 2016, 293). In this regard technologies are shaped socially, and social practices shape technology.

However, the use of the ecology metaphor in the study of information and communication technologies particularly, and digital media broadly, has evolved since its inception in the late sixties. More recent ideas, such as Nardi and O'Day's perspective of "information ecologies" (Nardi and O'Day 1999) have extended the metaphor to make up for some of these shortcomings. For Nardi and O'Day the ecological framework makes sense of "the interactions among actors, practices and technologies" (Nardi and O'Day 1999, 293). According to them, information ecologies are "systems of people, practices, values and technologies in a particular local environment […in which] the spotlight is not on technology, but on human activities that are served by technology" (Nardi and O'Day 1999, 49). This view of the ecologies metaphor reintroduces human agency as well as the networks of "relationships, values and motivations" (Trere and Mattoni 2016, 293) that are involved in technology use.

In the previous chapter I introduced Jonathan Donner's concept of digital repertoires (Donner 2015) as a means of describing media ecologies in terms of individuals' access to, and skills to use, them. In my analysis I have found it useful to return to metaphors that stress embodiment. For this reason I use the concept of ecology to describe the environmental resources that are available to young people, and infrastructure to describe these resources in relation to practice.

In Europe, the Dutch designer and theorist Matthew Fuller spearheaded an independent revival of the term, inspired by the work of Felix Guattari (Fuller, Media Ecologies 2005), which takes a more materialist view of digital technologies and other forms of media. For Fuller, the metaphor of ecology had become especially useful in understanding the "dynamic interrelation of processes and objects, beings and things, patterns and matter (Fuller, Media Ecologies 2005, 2)" when investigating artistic and activist practices. However, in Fuller's view, the notion of media ecology as an environment denotes a stability that he seeks to theorize away from. For him there is a sort-of radical dynamism in media ecology "that goes beyond the physical systems to include social relations and the production of subjectivity (Trere and Mattoni 2016)". For the purposes of this thesis, my conception of a media ecology that I intend to take forward is most closely aligned

with Fuller's vision: I too see media interacting materially to offer new potentials. And like Fuller, I employ experimental methods, such as the 'creative jam' (Chapter 6) to observe these relations and potentials.

Despite their divergent approaches, these scholars share a number of underlying assumptions that revolve around the ecologies metaphor, and these assumptions are useful to note in my analysis going forward:

Firstly, all of these scholars reject technological determinism and media reductionism. Secondly, these theorizations focus on a holistic picture of technologies that include old and new media, online and offline modes of communication. Thirdly, these modes have their diachronic perspective in common. That is, that media is "not a fixed thing, but a dynamic, fluid, unpredictable process" (Trere and Mattoni 2016, 302). And fourth, viewing media as ecology comes with an innate consideration of how political factors shape technologies and technologies shape the political.

Thinking through these theories of embodied knowledge and practice evoked in me the memory of watching Edmund Carpenter's journeys as an anthropologist in the documentary "Oh, what a blow that phantom gave me!" (Bishop and Prins 2003). Carpenter recalled his anthropological expedition with the Aivilik, Inuit people of Southampton Island between 1950-55, when he was stationed at their hunting camps. The traditional participatory carving of ivory among these people fascinated him. The materials that they used for these carvings were relatively commonplace, and members of these tribes would,

> *pass them around, stand them up…imitate cries of birds and different things. And they pass them from hand to hand, and people admire them or ridicule them. They can be tough critics. And then, somehow, the thing just gets lost…it's like a song that's been sung. It's over. The fun was in the carving and releasing the form and welcoming the form back, and passing it around (Prins and Bishop 2001, 208).*

Carpenter was surprised at the amount of craft and skill that went into producing these storytelling objects, when they were so easily discarded. After creation, the objects ceased to entertain or be of value: the carvings were a single use experiential form of symbolic

creativity. For hundreds of years, ivory provided the raw materials that invited the cultivation of skills among these people; their culture informed what that skill looked like, how this knowledge was passed from old to young, when and how these artifacts were valued, and larger ecological conditions dictated the lifespan of this practice.

Carpenter later took many of these historical artifacts into traditional western museums and art gallery spaces, where they were likened to surrealist pieces – the closest comparison admirers of such objects within these curated 'high-brow art' spaces could find. Carpenter's observations stuck with me, predominantly because it offers an example of visual creative practice as situated and embodied. It demonstrates the relationship between ecology, infrastructure, identities, social worlds and practices. It also perfectly captures how creative artefacts can be differently valued when they move from one context to another, where tastes and cultures are differently configured.

In the following section I expand on this last point, and build a theorization for understanding the role of culture, taste, aesthetics, and semiotics in my analysis of creative social worlds in this thesis.

**Creative Cultures: Taste, aesthetics and semiotics**

My theoretical viewfinder casts technologies of practice as reified forms of practice in distinct social worlds, where conventions and standards legitimatize participation. Yet, such a framing de-emphasizes the significant cultural dimensions of creative practice, in particular how tastes and aesthetics are expressed in practice, reified in technologies of practice, and performed as subjective identities.

Tastes, broadly, can be understood as a person's preferences in their consumption of cultural goods in terms of fashion, food, art, media and so forth. In Bourdieu's framing of artistic fields, *taste* is a marker of social distinction, but also a force of *cultural hegemony* that ensures the social and cultural reproduction of the ruling class (Bourdieu 1984), and always inextricably implicated in a class struggle for dominance. While Bourdieu's theorization of taste as related to a person's social origin and education still holds true, his framing is not entirely adequate to capture the complexities of cultural consumption in our contemporary globalized society. The boundaries of elite and working class tastes are blurring as mass and popular culture feeds formerly highbrow tastes to the lower classes, and lowbrow tastes to the higher classes, and many global consumers are now cultural

'omnivores' (Maguire 2015). However, in South Africa, class and ethnicity are strong indicators of consumer tastes. Artifacts of cultural production are thus loaded with social meanings (Dolby 2001).

When scholars speak of the cultural and social value of visual media, they often refer to the concept of *aesthetics* as an important constituent. The word aesthetics is derived from the ancient Greek word *aisthanomai*, which translates to "perception by the senses". The philosophy of aesthetics in scholarly writing refers to this sensori-emotional appreciation of symbolic cultural artefacts as beautiful, good or pleasurable (Loewen 2012), but in a more colloquial sense aesthetics may refer to the particular thematic *style* of a culture or creative world. Take for example, the visual culture of the Xhosa, which brings to mind a rich heritage of traditional beadwork, with repetitive motifs and geometric patterns. One might also speak of a punk aesthetic to describe the visual genre associated with a punk subculture, which includes leather, tartan, spray-painted motifs and safety pins. In either regard, a person's aesthetic appreciation is always subjective and culturally situated.

Understanding the complex meanings made through visual discourse is the project of the field of *semiotics*. Aesthetic style, as explicated above, as well as lifestyles, street style and individual style can also be 'read' as systems of signs (van Leeuwen 2005, 139-159).

Semiotics concerns the study of signs and signifying practices – contained in language, images, objects, bodies, and so forth – and are primarily concerned with the construction of meaning (van Leeuwen 2005). A sign in this regard can be any entity that refers to something else, as a significant part of communication. According to Rogers, signs are coded in social worlds (2005), where participants implicitly or explicitly agree on their denotative meaning. Agreeing on these meanings also contributes to the process of drawing boundaries for legitimation and participation. Signs thus also represent, evoke and require knowledge of the cultures in which they are embedded. In order to analyze the semiotic goals of young aspiring creatives in this thesis I look for cues in their *discourses, genres,* and *styles* (van Leeuwen 2005).

*Discourses* are the "socially constructed knowledges of some aspect of reality" and are resources for representation and knowledges (van Leeuwen 2005, 95). Discourse can be seen as the codified vocabularies of social worlds, and becomes meaningful in context. As such, discourse structures how meaning is communicated, and offers frameworks for how

people make sense of things. Discourses are both born from, and represent, our practices. Discursive visual vocabularies differ between creative worlds. Many digital video games, for example, need to re-skin their characters when they travel from Western markets to Eastern markets. In the game League of Legends the character of Karthus is represented as a skeleton in the west – denoting evil, death and danger. While in the Chinese version of the game, the character is donned in a full-faced mask. In China the use of skulls as meaningful symbols are 'read' as being offensive, as they trivialize death.

*Genres,* on the other hand, represent a particular type of communicated text. They have characteristics, which follow particular rules. When one thinks of, for example, film genres; westerns, comedies, thrillers, and so forth, might spring to mind. Yet, each of these genres, and their related rules, also change within different cultures or social worlds. Take, for example, the practice of branding: the same information might be encapsulated in a variety of signs, discursively molded to communicate the same information depending on whether this communication appears on, for example, a t-shirt, on a television commercial, or on a billboard. How we represent our information, and our understandings thereof, are determined by the genres of our practice or participation (van Leeuwen 2005, 117-138).

*Style* has become an increasingly important communicative device in our contemporary society, "as 'lifestyle' begins to replace social class as the main type of social grouping and source of social identity" (van Leeuwen 2005, 139). Style projects identities, which are tied to particular values. They articulate and enact the relation between "individual freedom and social determination" (van Leeuwen 2005, 140). The distinctive drawing or painting style of an artist might be recognized as the work of that artist.

Social style on the other hand regards "stylistic features as markers" (van Leeuwen 2005, 144) in the case of, for example, Rastafarians who embody their culture through dreadlocks in their hair. Lifestyles, on the other hand, can signify shared affinities, leisure interests and consumption activities of people across vast geographic spaces (van Leeuwen 2005, 145), which communicate affiliations, identities and preferences.

Bringing the concepts of taste, aesthetics and semiotics into my analysis of creative worlds and their related technologies of practice, offers a critical vocabulary to interrogate how a

very particular range of discourses, styles and genres are supported by free visual authoring apps and gain meaning in particular creative worlds.

For scholars such as Joost Smiers the globalization of software packages for design has threatened to flatten cultural richness of various visual heritages (Smiers 2003), as many of the artefacts produced carry with them the aesthetic 'baggage' imposed by the software from which they originate. Considerations of semiotic intentions in relation to the resources at hand helps point to the fact that authoring systems are never neutral, culture-free tools. For example, in a qualitative study that looked at the effects of globalization on the arts in Ghana, Annku and Adu-Agyem (2012) remarked that globalizing forces particularly embodied by the rapid uptake of international software packages is analogous to "carrying porcupine in a haversack" (Annku and Adu-Agyem 2012). In other words, it is both harmful and enabling – a necessary evil. They argue that while these new technologies offer a way for people to participate in today's information economy, it has also lead to local creatives copying and adopting international visual languages, possibly eroding the rich traditions native to their region. Manovich too, has argued that design aesthetics are funneled and standardized into homogenous universal visual languages (Manovich 2006) within authoring software, imprinting on the artefacts of creativity and influencing how designers learn to create. For Manovich, these standard aesthetics emerge from how software simulates material processes such as brushstrokes, leading to creatives using the exact same textures and strokes in their work. From this vantage point, "computer operations encode existing cultural norms in their design" (Manovich 2008, 130). Thus, it was important, in this dissertation to look at the particular ways in which digital authoring tools support the semiotic goals of creatives.

**Summary**

In Chapter 1, I argued that the universalizing claims made about Web 2.0 technologies are especially welcome in the city of Cape Town, where a recent surge in access to consumer electronics might signal extended participation in creative worlds. However, without understanding how particular technologies support particular practices, such claims lack specificity.

In this chapter, I have forged a theoretical viewfinder that can assist in considering these specifics. To understand how technologies contribute to participation, I outline a theory

that sees practice as the activities of creative practitioners in social worlds. Creative worlds emerge around particular social, cultural and economic currencies, which are carried by distribution systems. They also reflect the discursive meanings of the social worlds under consideration through cultural factors such as taste, aesthetics and style.

In order to become legitimized, practitioners increasingly gain embodied knowledges through creative mediums and technologies. These technologies can be seen as reified forms of practice, and may in turn become infrastructural to practice. Thus authoring technologies are inscribed with master narratives that pervade their functions - in terms of the discursive resources they provide, and how they plug into existing infrastructures.

This theorization offers a relational account of creative practice as participation in particular creative worlds, which necessitate a particular substrate of infrastructure, and are connected to culturally informed tastes and aesthetics.

*Chapter 3*

# AN ETHNOGRAPHIC APPROACH TO STUDYING INFRASTRUCTURE

> *The art of inquiry, the conduct of thought goes along with, and continually answers to, the fluxes and flows of the materials with which we work. The materials think us, as we think through them. Here, every work is an experiment: not in the natural scientific sense of testing a preconceived hypothesis, or of engineering a confrontation between ideas 'in the head' and facts 'on the ground', but in the sense of prising an opening and following where it leads*
>
> Tim Ingold, Making: Anthropology, Archeaology, Art and Architecture

So far, I have described my research questions and my central theoretical commitments. In this chapter, I chronicle how I went about gathering evidence. As outlined in the previous chapter, my work centres on the tensions between creative practice and infrastructure, with a focus on mobile technologies, and therefore necessitates some kind of contextually engaged, ethnographic approach to field work (Star 1999). Such a perspective requires an *observation* of people's *practice*, a deliberate awareness of what they *say* and *do,* and how they *construct meaning* in the process (Perkel 2011).

I encountered many difficulties during the research process: locating a field site, issues of anonymity in relation to visual research, and observing mobile-based creative processes, to name a few. Below I address these commitments and challenges.

I begin by outlining my approach as a critical constructivist approach, and detail the critical ethnographic methods I employed to gather my data. Thereafter I walk through the process of finding a field site, including my rationale and methods for conducting a multi-sited study (Marcus 1995). I provide a brief description of each site, followed by a chronological account of my research activities. I then explain why I found the typical genre of classroom observations and interviews insufficient to drawn attention to the micro-processes of authoring with mobile technologies. In response, I describe how I set up an experimental 'jamming' session to supplement my data (discussed further in chapter 6). This is followed by a summary of how I gathered and analyzed material to structure the chapters that follow this one. And lastly, I relate the strategies I employed in conducting ethical research, to the best of my abilities.

**A critical constructivist approach to the field**

From an epistemological vantage point, a critical constructivist approach is based on the foundational belief that there is no such thing as a neutral perspective (Kincheloe 2005). It recognizes that researchers and participants are linked; that knowledge is constructed together and crafted within a contextualized space; and that these spaces are shaped within particular socio-historic dynamics (Kincheloe 2005). From such a perspective, the object of study – in this case the tensions between practice and infrastructure for visual design – can only become known through a mutual social construction of knowledge between participants and researchers. In this way, the research process should be attuned to multiple perspectives, while "stepping back from the world" as we now it, and seeing the ways in which our perceptions are fundamentally constructed by "often-hidden modes of power" (Kincheloe 2005, 11).

I follow cues from Kincheloe in asking questions that can reveal these hidden powers, such as "how did that which has come to be, come to be?" and "Whose interests do particular institutional arrangements serve?" (Kincheloe 2005, 11). For this reason I employ qualitative methods which stem from a critical ethnographic approach (Madison 2012). I was guided by the three themes set out by Professor Soyini Madison in her book "Critical Ethnography: Method, Ethics and Performance" (2012) namely, 1.) positionality, 2.) dialogue/otherness and 3.) theory/method.

Throughout the process of researching, and presenting the research, I have attempted to foreground my own *positionality*: acknowledging my own power in exchanges of knowledge, while being mindful of my intentions, the effects that I have within these social worlds, and the accountability I have towards my collaborators and participants to represent them fairly and in accordance with their own ideas of themselves. In Chapter one I counteracted "the godtrick" (Haraway 1988) by foregrounding my interests and motivations for doing this work. Elsewhere, I continue interrogating my own assumptions of, and influence on, the places where I conduct research. By employing the overarching theme of *dialogue,* while remaining cognizant of constructions and subjectivities related to *otherness*, I foreground my own subjectivity in representing participants. In this way, I see myself as the research instrument through which I come to understand the worlds in question, while considering multiple perspectives.

I sought to foreground and enable equal participation within the enterprise of *knowing:* consistently returning to my field notes, reflectively unpacking my kneejerk reactions and potential biases, and then threading these ideas back into dialogues with participants and collaborators.

I also invoke Madison's (2012) focus on *Theory/Method*, where the ethnographic methods employed become the 'doing' or the 'performance' of critical theory. The methods used in this thesis are contingent on my purpose, my fundamental questions, the theories that inform my work, and the scene itself (Madison 2012, 14). I expand on this point in the next section, where I outline the scene where this research took place, the participants who were involved in this study, and the methodological actions I took to generate evidence that could answer the question "How do mobile technologies provide infrastructure for creative practice and participation?"

**The action and the scene**

One of the most difficult tasks in conducting this research project was finding a group of young people from poor and working class households in Cape Town, who had already established their desire to become career creatives and were actively participating in creative practice. As explored in Chapter 1, pursuing careers in visual arts are far easier for wealthy inhabitants of the city (Booysens 2012). Over six months in 2013, I arranged preliminary meetings with high schools that have a focus on the arts, extramural art centres, universities, colleges, and skills development centres. These meetings and interviews offered me great insights into the landscape of design and arts education in the city of Cape Town, and re-emphasized how few options are available to young people who come from financially disadvantaged households and how difficult it is for them to follow the formal avenues that may lead to careers as visual creatives. I decided to locate my entry point in the Foundation phase of two Extended Curriculum Programs (ECPs) for visual design at universities in Cape Town. These included a graphic design course, and a mixed-discipline course, where students would go on to enroll in the first year for fashion design, surface design, jewelry design, industrial design or graphic design.

ECPs and other "bridging courses" in colleges and universities were among the few options available to young people who had not been (expensively) groomed for success in the world of arts and design at a secondary school level. These programs, which are state

sanctioned and partially funded by government grants, focus on practical professions such as visual arts, engineering or architecture, "in order to help achieve the current social imperatives of equity, transformation, skills development and economic empowerment" (Kioko 2010, 40). They offer a "pre-first year" where students might be able to "catch up" (Hutchings and Garraway 2009, 4) on cultivating the skills that they weren't offered at school, allowing more young people access to the courses that might diversify the workforce in South Africa. In many of the policy documents that describe the purposes of such courses, special mention is made that these courses were designed to offset the inequalities experienced by "previously disadvantaged learners" (Hutchings and Garraway 2009). As mentioned above (see footnote 5), the latter term has been frequently used in policy-documents to describe people of colour after the fall of apartheid. Yet I find descriptor of "previously" problematic, as many of these learners continue to face challenges in participation.

Visual Design, which consists of disciplines such as architectural technology, fashion-, graphic-, industrial-, interior-, jewellery- and surface-design, is one of the fields identified for such remedial and diagnostic action in South Africa. These developmental courses are aimed at students who are underprepared in design and/or academics (Volbrecht and Boughey 2004). Arnott (2010) asserts that such courses had been developed over many years, "often under difficult circumstances" (Arnott 2010, 2). She cites "a constantly changing political landscape, a failing school system, lack of funding, staffing, [and] infrastructure" as a number of sources contributing to this difficulty. The courses have typically been pulled into shape in response to students' needs, "giving them the necessary support to successfully continue with further studies in their design discipline of choice" (Arnott 2010, 2). Arnott adds that in such a typical intake, about 50% of students had no prior experience of studying art or design at school, and come from financially disadvantaged backgrounds – "an inheritance from the Apartheid regime" (Arnott 2010, 2) in South Africa. Determining whether students are "financially disadvantaged" can be ascertained by whether students are beneficiaries of the National Student Financial Aid Scheme – or NSFAS for short. NSFAS is the governmental provider of financial aid and student loans to students from "poor and working class families" (National Student Financial Aid Scheme 2017) on the basis of need. Students apply for funding and are put through a "means test" to determine what percentage of a students' fees will be covered

by the organization, depending on the contribution their families can make towards their fees.

ECP courses typically are provided with additional funding from government, aimed at assisting these financially disadvantaged young people. Here, they can finish a three-year course in the minimum of four years, and use this additional year (known as the 'foundation course') to develop the critical visual literacies and design grammars that will enable them to complete their training in these visual disciplines, while becoming familiarized with their chosen design fields.

I found the notion of a 'bridging' course an intriguing site as it provided a space where young creatives, in many cases, would be exposed to a formal education in the arts for the first time. It also presented a space where participants were in a liminal position – a threshold where, on one hand, they had been accepted as students, but where they still had to run the gauntlet before entering the first year of the course. Basing my research in visual design course at a university was also a context that I had personal subjective knowledge of as I, too, was formally trained as a visual designer within the institutional bounds of a university. The site was thus, to some extent, familiar terrain.

Given the social worlds perspective, I was undertaking what Burrell (Burrell 2009) would describe as a "multi-sited" study: where participants are involved in multiple and overlapping creative worlds, in different locations, online and offline. It became clear that, instead of a strictly bounded site, I found what Burrell calls an "entry point" (Burrell 2009) where creatives were involved in a specific community of practice. In Burrell's view, the site is not necessarily bound to this space, but is constructed throughout the course of fieldwork (Burrell 2009), through a "play of social relationships", established between researchers and participants, that "extend across physical sites, comprehending embodied as well as visual and verbal interactions" (Coleman and Collins 2006, 12). Yet Marcus (1995) cites the value of a "strategically situated single-site" (Marcus 1995, 110): a particular locale in which research is conducted and then "calibrated with its implication for what goes on in another related locale, or other locales". In this case the ECP programs became my entry-point, while the students enrolled in them were the creatives I would 'follow' (Marcus 1995, 79). Thus, while I observed these participants in other locations, I would "calibrate" these observations in relation to interviews and that which I was observing in

the class context. Later in this chapter I explain how my findings were continually discussed with participants long after my research period concluded.

### *The action*

"The action" (Madison 2012) of this work took place over the entirety of 2014 in the foundation phase of the ECP program (See addendum A for full list of activities), but was also informed by interviews and observations conducted before this period, and the themes generated during this period were discussed with participants throughout 2015, 2016 and 2017.

During the month of March 2014, I flitted between the two campuses, watching the new intake of students adjust to their first year at the university, while conducting unstructured interviews with the course conveners at both sites. Thereafter, I spent roughly 4 months at each site, sitting in on classes, and getting to know students informally outside of the university space. I conducted participant observation, in-depth semi-structured interviews, and used a number of visual methods, predominantly including photo elicitation (Harper 2002).

A large portion of my data collection emerged from the position of participant observer. As Walcott asserts, "experiencing seems an especially appropriate label for drawing attention to what is gained through participant observation" (Wolcott 2008, 48-49). Our work should thus capitalize on our "human capacity for observation" and the recognition that ultimately, "everything we know comes to us that way" (Wolcott 2008, 49). Thus, while being stationed on these university campuses, and following participants elsewhere, I aimed to gain an experiential understanding of the social worlds in which they participated. I would join in class activities such as drawing, painting, or reading. When students told me about their new favourite musical groups, or a new designer they admired, I would follow up and research these influences and inspirations.

While I was getting to know these aspiring creatives, my focus was constantly on the role that digital technologies and materialities played in their creative practice. As I argued in the previous chapter, an infrastructure approach brings together concerns of practice, identity, social worlds and how technologies of practice help to constitute these worlds. Infrastructure "manages and conceals tensions within and between social worlds" (Perkel 2011, 90), and thus, following these tensions was paramount to my research. Participants

most often expressed these tensions as obstacles to overcome, and paying attention to their experiences of difficulty became a central concern for me. Asking students about difficulties, and becoming aware of their daily struggles was a strategy in uncovering the "master narratives" that were inscribed in the systems they relied on. In Star's view, "master narratives" are the implied normative practices that systems are designed around, which often obscures the diversity of voices (Star 1999, 384-385).

Yet Star warns us that that all interpretive studies of media find difficulty in distinguishing the different levels of reference in the subject of study (Star 1999, 387). She suggests that researchers specify at which level their analysis lies: at the level of artefact, as trace/record, or as a veridical representation of the world (Star 1999, 387-388). In the context of my study, I look at digital technologies as artefacts that are designed by people, and which impact on how creatives understand, approach, organize, and perceive their practice, or opportunities for practice, and the creative worlds in which they can, and cannot, participate (Wenger 1998, Lave and Wenger 1991).

In total, across the two sites, my observation included 64 students. These observations were documented with field notes, sketches, photographs and videos. A typical day might include arriving at classes at 9am, sitting in on lectures and joining students at their desks for studio-work. I also "hung out" with students during breaks, and arranged or conducted interviews with select individuals. In total, I interviewed 33 students. This sampling was purposive, in that I sought out people of colour to interview while interviwing any student who volunteered their time.

Interviews were predominantly conducted on campus, but a small number took place at participants' residences, my house, or the ICT4D lab where I worked at UCT. Students could choose whether they wanted to be interviewed in Afrikaans, English or Xhosa. I conducted the Afrikaans and English interviews, and employed a translator to conduct and then translate interviews for me in Xhosa. Three interviews were conducted in Xhosa.

In interviews, questions (addendum B) were designed to elicit an understanding of how students' media ecologies differed before university and during university, what their constellations of resources looked like, and how they leveraged these resources to practice and participate in creative worlds prior to, and during, their enrollment in the foundation

course. In addition, I asked students how they imagined their continuing creative practice into the future, beyond the doors of these institutions.

In these sessions I also explored digital visual artefacts produced by participants, particularly focusing on mobile phones as creative tools. Following the process of photo elicitation (Harper 2002), I asked students to show me images that they had made –selfies, photos of artworks, edited compositions, or anything they were proud of creating. These images often added a more intimate dimension to interviews, as students showed me decorated selfies, pictures of friends and family, older drawings that they had made before coming to university, and other images from their personal collections. This activity thrust images into the centre of our research agenda (Harper 2002, 15) – offering insights into the relationship between participants' strategies of representation, their identities, and the social worlds they inhabited. In some cases, students had authored images with applications on their phones. These images were helpful prompts for participants in sharing the processes they followed in producing them. Interviews were recorded, transcribed, and along with visual data such as photographs and video, tagged and coded.

These research activities generated "engaged, contextually rich" (Falzon 2009, 1) observations where "fine grained daily interactions" constituted the "lifeblood of the data produced" (Falzon 2009, 1). Below I describe the two distinct entry points for this research, the period I was stationed at each site, and any significant research activities that took place there. These spaces differed in a number of meaningful ways: from the design of the classrooms, the rhythms of teaching and creative labour, communications between staff and student body and how lecturers perceived the needs of young people from financially disadvantaged contexts. In turn, my work at these sites differed too.

### *The mixed-discipline class (March 2014 – June 2014)*

In a pre-fabricated building located at the back of the main campus building, on top of a steep embankment, the mixed design foundation course students – 28 of them – attended classes. Two doors lead into two distinct rooms: one room served predominantly as a studio space, where drawing desks were bunched together in clusters with tall stools for the students to sit on. The lecturer's desk headed up the front of the class; behind it an overhead projector cast images onto a whiteboard during lectures. The walls were covered in posters and examples of student projects.

Each student was assigned a desk where they would return for each class. Classes consisted of studio-based design subjects and drawing, two-dimensional design (including fashion design, surface design and graphic design projects), three dimensional design (including industrial design and jewellery design projects), and theory subjects, such as history of art and design, visual literacy and communication (which includes language skills). In addition, students were also enrolled for a subject called "professional practice" which aimed to cultivate a critical design eye, as well as life-, computer- and numeracy skills. Typically the students were given one practical assignment with complimentary lectures per week.

In a second attached classroom students met for their 'life drawing' classes. About once a week, a pile of fruit, or a nude person, served as a reference for them to work from. Easels populated the class in a circle, pointing at a central space where these objects and people modeled for them.

Students didn't have access to a specially demarcated computer centre in their foundation year, as the majority of the projects assigned to them were analog rather than digital. There were exceptions, for example, a Photoshop project that they conducted in the main campus building. In order to do research or type projects, students relied on library access, or used their own devices.

Lecturers had offices scattered around these central spaces. Although these courses were typically demarcated for underprivileged students, the all-white lecturing staff recognized that this class was different to my other field site, the graphic design class. While the mixed-discipline class also served a social justice purpose in their main aim of broadening access, their student intake didn't include the same high percentage of financially disadvantaged candidates. A lecturer (17-03-2014) explained this difference to me,

> *Here, because we work with very material disciplines…okay, like, for example, industrial design, you need these steel rulers, and the drawing equipment…it's a lot more costly.*

In the mixed-discipline class the infrastructure required for participation in 3-dimensional disciplines is a lot more expensive than the infrastructure required in graphic design, and as "*NSFAS doesn't cover materials […] it's often just not the right environment for those students"* (17-

03-2014). Another lecturer (22-04-2014) also described financial troubles as a significant problem for students in their course,

> *Financial problems can trip up even the most gifted students. […] They are so quiet, they disappear…they find it very difficult to come and talk when they're battling. And then they fall behind (17-03-2014).*

This was reflected in the student intake. No more than a third of students had NSFAS funding. Half of the class was English first-language speakers, hailing from inner-city schools, either in Cape Town or other cities around South Africa. The lecturers noted that classes were often a challenge for students who weren't fluent in English, given that the teaching staff was mostly monolingual:

> *I think English is the biggest challenge […] sometimes you explain something to the students. And they don't understand it. When you get to their desk two hours later, they've been doing the wrong thing the whole time. I walked up to this student, and explained to him. He was very upset and frustrated; he still didn't know what I wanted him to do. But then another student came and spoke to him in his own language. Then he knew what he had to do.*

Struggles around language were one of the most obvious markers of how untransformed this institution was. Lecturers many times during my observation period expressed feelings at helplessness in communicating projects to such students, and often relied on classmates to help them translate concepts and instructions.

Another lecturer noted that the financially disadvantaged students often arrived late to class, owing to the fact that they relied on public transport. During the months of my observation there were multiple transport strikes. Here, students were expected to arrive at class at 9am. Students who were late were required to provide a note from the station conductor to prove that their lateness was out of their hands.

The lecturers relied predominantly on official university channels to communicate with students, typically consisting of e-mail notifications. Students would otherwise use WhatsApp to message lecturers if they were going to be late, or needed assistance after hours.

Many of the sentiments expressed by lecturers in this class echo the discourse of the 2015 Fallist movement which I have referred to in Chapter 1 (Nyamnjoh 2016). Students of colour face distinct financial difficulties, cultural alienation and struggles for mobility. These issues are frequently rendered invisible in tertiary institutions, and thus present a "structural violence" (Pillay 2016) against them.

During my stay in the mixed discipline class I sat in on lectures, observed studio work, and attended a number of "crit" sessions where students were given feedback on their projects. Otherwise I hung out with students during their breaks, often on the sprawling lawn next to their classroom, or at the cafeteria.

As time progressed I approached students for interviews, and conducted a total of sixteen in the mixed discipline class. Interviews took place in empty offices, the meeting room in the main departmental building, or in their residence rooms. In a number of instances, I accompanied groups of students to the library. As many of my interviews were scheduled later in the afternoons, students often asked me to give them lifts to the bus station, taxi rank or train terminal. In one case, a group of students asked whether I could give them a lift to the shopping centre close to my house, so that they could go and use their NSFAS cards to purchase groceries. In another instance, a student asked whether I would take him to meet some friends at the company gardens in the city. This particular trip had a number of stops, as we picked up friends at various locations. These car trips included some of the most relaxed and intimate exchanges with students.

***The graphic design class (July 2014 – November 2014)***

The graphic design class was housed in a multiple-storied building in an industrial suburb of Cape Town. The building contained a full spectrum of facilities: computer labs, classroom studios, lecture theatres, photographic studios and offices, which all housed a busy stream of activity. The majority of students in the class were male.

The ECP class was located right next to the first-year class, and the adjoining corridor was lined with computers where students could go to do research, answer mails, or "mess around". Students mingled between year-intakes, and older students frequently hung around the ECP class to divulge wisdom to their younger peers. Lecturers had their offices on the bottom story of the building, and were present for lectures or briefings, sporadic

walk-throughs to check up on students, and were always available for consultations with students in their offices.

This ECP studio space, like the mixed foundation course, was also populated with drawing desks and walls decorated with student projects and posters. In addition, students from multiple year-intakes used the corridors of the building as display spaces for their projects. While this class shared an almost identical curriculum to the mixed-design class, the focus was firmly on literacies and skills that would prepare students for vocational positions as graphic designers.

The foundation course prided itself on admitting financially needy students. In selecting students for the course, the head of the course described taking in "as many students as we can", through a sense of social justice:

> *I always think, 'if we don't take them – where will they go?' The colleges are private and the students pay a fortune for an education that means nothing. You'll see that there are many students in our class who come from the colleges. And then it's another foundation course. Those places are sometimes just money pits. And these students cannot afford to waste their time.*

Many of the students interviewed for this research project who hailed from this institution had, indeed, previously been enrolled in one-year foundation courses elsewhere and had amassed substantial debt to do so.

Students in this course were exposed to design software from the foundation phase, and many projects included a digital component, in an attempt to expose students to the software of their practice. Lecturers also typically communicated with their classes via online means. For each year, a Facebook group was established to communicate meeting times, assignments, and which materials they needed to bring to class. From all of the students surveyed, this mode of communication was a decidedly positive experience, Daneel (19) says,

> *I visit the Facebook group every day. I think it's convenient – for example, if there wasn't a Facebook group and you get there the morning, and you didn't know – and you didn't bring the right tools. Then you are already behind. If you check it the night before or the day before,*

> *you know what you need and what you need to bring.*

During my observation period, students frequently checked their mobile devices to find out what they needed for classes, where they needed to be, or what the next project entailed. Aadil (20) also appreciated that they could freely come and go in the studio, and didn't always have to be present:

> *Our class is also very free, or very loose you know, so people can go home or work, or they come a bit late because of transport. And so Facebook is always there and people can always go look what other people have said. And it's right on their phones.*

The "looseness" of classes described by Aadil was a mindful strategy from staff to assist students in the wake of frequent transport strikes. During the time in which this research took place, there was a strike nearly every week. Owing to the fact that the majority of students came from low-income households and relied on public transport, lecturing staff conducted most of their scheduled classes later in the mornings, planned contact times at students' convenience, and allowed students to work from home if necessary. Despite this, the class, during my observation period, was the preferred place for students to work on their assignments. Throughout these four months, the classroom was abuzz with activity at most times of the workday.

During my observation period, this looseness was, at times, an obstacle: I would arrive on campus, and contact times or briefings would have been moved earlier or later than expected. While I attended a small number of lectures and briefing, the conduct of this class was similar to the mixed discipline class, and thus many of the same themes emerged.

For the most part, however, the looseness of schedules was a distinct advantage: students were able to distinguish me from the teaching staff and I built a rapport much sooner than in the mixed discipline class. This was also owing to the fact that this phase of my research took place after a "creative jam" that I held during school holidays right before term started. I expand on this point in a later section.

Here, most of my interactions with students took place outside of the class. This included hours of sitting at the computers in the passage adjoining the class: watching students conduct research or surf the web. At other times, we would hang out on the lawns outside

the building, or enjoy snacks at the tuck shop. In a few instances I gave students lifts to their houses, which were located in Khayelitsha, Gugulethu and Elsies River. Again, these car trips were among the most valuable sessions spent with students – where conversations around pop culture, creative worlds, and life at university, fleshed out my understanding of these students' identities, their tastes, and their values.

At this site, I conducted eighteen interviews. Most were held in the afternoons in a small room located in the administrative quarter of the design building. In three instances, students came to my house over weekends to sit for interviews.

During this phase of my study, I became particularly close to a small group of students who became my key informants. Key informants are "those whose social positions in a research setting give them specialist knowledge about other people, processes or happenings that is more extensive, detailed or privileged than ordinary people"(Payne and Payne 2004). In this case, the "kasi creatives" were a group of young people who hailed from the townships, were from low-income families, and had a keen interest in creative worlds that existed outside of the university paradigm. They were intent on showing me places and creative worlds in which they participated, and so we attended a number of art, fashion and music shows together. These students were drawn from both of the ECP classes, and shared many of the same interests and tastes.

In the next section, I introduce the eighteen students who are included in the case studies that I discuss in Chapters 4 and 5. And present my key informants, the "kasi creatives", who participated in the creative jam (Chapter 6).

### *The focus: Kasi Creatives*

As I didn't establish whether students were receiving NSFAS funding or not before conducting interviews, the thirty-three people who were interviewed for this project came from a wide range of backgrounds. Yet my intended focus was on young people who came from financially disadvantaged backgrounds. In the wake of #feesmustfall, attention has been drawn to the plight of students who are culturally and financially disadvantaged within the university system: culturally, as often their first (and even second) languages are not the language of instruction; and financially, as they typically either rely on government grants, or fall into the "missing middle" income group where family incomes fall below the NSFAS "threshold" for support (Badat 2016, 75).

Eighteen of the thirty-three interviewed participants belonged to this category, and while I analyzed all of the interviews conducted – I drew the case studies presented in Chapter 4 and 5 from the data I gathered on these students. Describing this sampling in terms of gender is problematic, owing to a fraction of these students identifying as gender non-binary. Thus, using gendered descriptors that framed participants within their preferred pronouns would compromise anonymity. Nonetheless, the majority of participants identified their gender as male. All of the participants were POC. Fourteen of these participants were Xhosa home language speakers, three were Afrikaans home language speakers, and one was a Zulu first language speaker.

Table 1: Students from whom case studies were drawn

| PSEUDONYM | AGE | HOME LANGUAGE | DISCIPLINE |
|---|---|---|---|
| Henry | 22 | Afrikaans | Graphic Design |
| Sa'id | 20 | Afrikaans | Graphic Design |
| Aadil | 20 | Afrikaans | Graphic Design |
| Qondile | 22 | Xhosa | Industrial Design |
| Onwaba | 18 | Xhosa | Graphic Design |
| Bongani | 20 | Xhosa | Fashion Design |
| Menzi | 20 | Xhosa | Graphic Design |
| Kuhle | 21 | Xhosa | Fashion Design |
| Olwethu | 20 | Xhosa | Graphic Design |
| Lunga | 21 | Xhosa | Graphic Design |
| Bongz | 22 | Xhosa | Graphic Design |
| Yonela | 18 | Xhosa | Surface Design |
| Simthandile | 22 | Xhosa | Graphic Design |
| Mbali | 25 | Xhosa | Graphic Design |
| Neo | 22 | Xhosa | Graphic Design |
| Phumla | 22 | Xhosa | Graphic Design |
| Dizzy | 22 | Xhosa | Surface Design |
| Max | 20 | Zulu | Graphic Design |

Fourteen of these participants were enrolled to study graphic design, two were enrolled for fashion design, and two were enrolled for industrial and surface design, respectively. Of these eighteen participants, twelve did not have art available as a subject at school and seven had absolutely no computer access prior to University. Yet all of these students had access to internet-enabled mobile phones. Among the most popular handsets for this group was the Samsung Galaxy range and Nokia handsets. Many students report being gifted smart phones, phablets or tablets by family members on the advent of their university enrolment.

In the next section I detail my decision to undertake a 'creative jam' to supplement my data, the origins of the method, and how I structured this creative experiment.

***Introducing a "creative jam"***

In early talks with the gatekeepers of the university, we negotiated the terms of my research. In one such conversation, the head of the department suggested that I could make myself available to assist students with their projects and creative practice, owing to my skills as a visual design graduate. As previously mentioned, this role became very central to my involvement with students – I would offer my critique of their projects, give tips from my own experience, and generally offer friendly advice.

The concept of hosting a "creative jam" to enhance my research was inspired by a confluence of events. Firstly, by this time I had spent nearly four months doing research at the mixed discipline class and the mid-year holidays were approaching. Over the course of fieldwork period my relationship with a number of participants grew more entangled and intimate, some students added me on Facebook, followed me on twitter and instagram, sent me e-mails and visited me at my house. The topic of much of this correspondence and socialization revolved around asking assistance with practical matters associated with design work for class; leveraging their skills for profit outside of the university context; finding out about what it was "really like" in a design firm; asking whether I either knew of any potential employers that would entertain having a pre-first year work-shadowing; and often - whether I myself would be able to facilitate an internship in my own creative work-capacity.

From the interviews I had conducted with many of the students, I could comprehend the novelty of access to a designer such as myself: I learned that for the majority of these young creatives, they were the first person they personally knew who had pursued this career path. In lieu of mentors (apart from their lecturers) I represented access to "insider" knowledge about the practical world of visual design. These requests lead me to think of ways in which I could provide an opportunity for students to pursue their own creative projects during this break, with access to resources such as space and mentors.

Around the same time I had been tasked to present my research findings as a brief for postgraduate Computer Science students, as an extension of the 'Beyond Consumption' lablet. These students would develop mobile design tools in fulfillment of their Honours

degree. The experience of working with the Computer Science students led me to consider how I could generate concepts, in collaboration with my participants, for their project. We thus had to come up with ideas for small, manageable mobile design apps (addendum C).

And lastly, as my field site was located within the university context, I found it difficult to gain a full understanding of mobile-dominant creative practices. The everyday observations of practice I had been exposed to included either course projects or casual mobile interactions such as messaging friends. Thus, while students showed me work that they created outside of class, much of which was made on mobile devices, I found it difficult to observe these practices. At times, I would ask students to demonstrate their processes, but these meetings were frequently time-sensitive, and students would brush over the details. As Pink and Horst assert, the data produced through interviews "provide participants' narratives about what they think they do with their devices, yet do not necessarily bring insights into how these play-out experientially" (Pink and Horst 2015, 9). I couldn't within the bounds of my position as researcher, see how hands and eyes interacted with digital mediums and practically went about forging particular cultural goods. As Malcolm McCullough states, in his book *Abstracting Craft*, "The way of the hands is personal, contextual, indescribable. Little can surpass the hands in showing that we know more than we can say" (McCullough 1998, 3). Put differently, creatives "have seldom been able to simultaneously exercise and scrutinize their manual talents" (McCullough 1998, 5), particularly when these creative practices require mobile devices. Research on mobile media as material culture (Horst 2016) is increasingly acknowledging that our relationships with these technologies are intimate and embodied (Pink and Horst 2015, 3).

Horst and Pink advocate for a strategy of "re-enactment", well-documented in Pink and Leder Mackley's *Moving, Making and Atmosphere* experiments (2016) where prompts to re-enact automatic domestic rituals "releas[es] muscle memories of habitual activities never usually spoken about" through "sensory ethnography" (Pink 2015). Just as Pink and Leder (2016) focus on the visceral in their sensory ethnography of household habits, I needed to centre the experiential qualities of digital making with mobile devices. Towards such an articulation, I had to "make a mess of methods" (Law 2004) so that I could give attention to both the theory and the practice of collaborative inquiry (Campbell 2004, 73).

As a digital visual artist and games enthusiast, my closest reference for conjuring such a creative making event was embodied by my experiences as a collaborator within "game jams" around Cape Town, Denmark and Sweden. A game jam is a experimental method where a group of creatives come together to "rapidly prototype tiny, experimental games and by doing so [inject] new ideas into the games industry" (Musil, et al. 2010, 183). The concept of jamming is directly transposed from musical improvisation – where instrumentalists play together in a social gathering for the purposes of generating new material, or simply as communal practice session. These loose gatherings are somewhat structured (by key, riff or chords), where people play to their strengths and off each other.

Similarly, in game jam sessions, anyone who is able to contribute to a game's production can become part of an ad-hoc team and bring their own skills to the table. Such contributions are typically "software and hardware agnostic", so teams can realize their visions on platforms and tools they are comfortable and proficient with (Musil, et al. 2010, 183-184). In light of wanting to facilitate a collaborative making event, where I could both mentor students, and gain a closer of understanding of the mobile ecology as a creative environment, I decided to host a creative jam.

Chatham et al. (2014) argued that game jams are actually an ad-hoc "design research method". In contrast to other software development approaches which see development as a rational, methodical, and scientific procedure (Fallman 2003, 7); jamming foregrounds design as a reflective exercise, which emerges from a self-organising process of bricolage where strength lies in "compound seeing and experience" (Musil, et al. 2010, 184).

From my personal involvement in game jams, for example, I was not only contributing my own strengths to the project, but I was also continually learning from more seasoned game makers – not in a formalized manner, but through legitimate peripheral participation. Setting up a scene in the game software Unity, with a short demonstration from a team mate, meant that I could gain a 'first-touch' experience of using the software for a small manageable task, and acquire a new skill that directly contributed to my creative goals. Continual conversations with various team mates meant that our final games were being pulled into shape by a process of democratic vetting. At the end of it – we had not only produced a working mini-game, but also acquired skills and understandings that we did not neccesarily bring with us into a space.

As a collaborative and improvised exercise, such 'jams' allowed for a much more open-ended approach to design and creation, where diverse voices forge what design theorists might call objects of "agonism" – which serve to reveal and confront power relations (DiSalvo 2010, 369). This was particularly useful in following the tensions that infrastructure conceals. The value of "jamming" as an improvisational practice has broadly been articulated as generative in musical composition (Czech 2015), rapid game design (Musil, et al. 2010) and learning (Brinck 2014).

In employing this experimental method I aimed for the creation and verification of new perspectives and knowledges, as well as the "deployment of that new knowledge toward social justice goals" (Campbell 2004, 73). As Campbell argues, "Choosing a different way of working together with our research collaborators is choosing to work towards a different world" (200473). While aiming to develop such a novel experimental enquiry, I recognized the need to remain critical of how the "action" of this work is structured. Irwin calls on critical researchers to foreground how we "do structure" in the field, and ask us that "we should locate how our behaviors, research roles, or discursive choices enact structures and the effect this enactment has on the people who[m] we research" (Irwin 2006, 155), I return to these concerns in the ethics section. Below I provide an outline of how I designed and conducted such an experiment, using the existing literature to structure my approach.

**Jamming as Method**

Recently, a number of scholars have set off to formalize the existing flows or suggested methodologies for conducting game jams (Macklin, Martin and Dikkers 2011, Zook and Riedl 2013, Kultima 2015, Arya, et al. 2013). Despite attempts to define a set of rules, many accede that "any and all of these rules can be modified to fit the local game jam context and goals" (Macklin, Martin and Dikkers 2011, 206). While this might be frustrating for those who wish to follow a set formula for replicating results, this looseness opens "jamming" methodology to infinite adaptations. In the case of this thesis, I aimed to apply the spirit of game jamming to the exploration of visual design on mobile, and to do so by following some of the rough guidelines set out in Macklin, Martin and Dikkers' (2011) book chapter "Planning your game jam: game design as a gateway drug".

Macklin and colleagues (2011) suggest that one considers a number of factors before undertaking a game jam: determine the specific goals, the audience who will be engaged, the desired outcome, the space that is needed, and the materials necessary for the jam (Macklin, Martin and Dikkers 2011, 209 - 211). Secondly, they offer a number of set steps in the jamming process, which follow the structure of: 1.) ideation and paper prototyping, 1.) play testing I, 3.) prototyping, 4.) prioritizing, 5.) production, 6.) play testing II and 7.) show and tell (Macklin, Martin and Dikkers 2011, 207 - 209). Finally, they suggest that hosting an opening and a closing ceremony for these events are a way to communicate the central goals, constraints, and general information at the onset, as well as share any results or rewards, at the close. Below I detail the design of the jam experiment.

***Goals***

The objectives for this particular gathering were to see how young people experience, in the moment, at a micro-level, the practice of designing, while giving shape to their own semiotic goals. During the jams, students could come and make whatever they wanted. While at the university lecturers dictated class activities, I wanted to see what students would come up with if they could choose their own creative projects.

At the same time this exploration was used as a starting point to understand how these systems might be re-designed to better meet the needs of young visual designers, and thus required reflexivity and criticality. While students were working on their own creative productions, I set a decisive constraint that they could initially only attempt to give life to their creations on mobile phones, after which they could use whatever they wished, including an industry standard repertoire of tools such a the Adobe creative suite.

***Time***

I decided to host the jams over a period of six days, divided over two weeks, with sessions of eight hours a day. Time designations were based on the availability of participants within their holidays, but were also based on the typical time allocated for jamming sessions – that traditionally stretch over 48 hours. While a typical game jam might take place over a weekend, with participants sleeping very little while crunching toward the deadline; I decided to spread our jamming time over a few days so that participants could take a break over days without losing production time. Splitting these sessions into two bursts was

motivated by the fact that I wanted to first explore design with a mobile-only focus, after which students could use any tools they desired.

***Space***

This six day event was held at my own home studio. My partner Ben runs a small animation business from the studio, called *Cool Your Jets,* and I produce the majority of my design work and art under the moniker *Nanna.* The studio is a 5m X 6m room which has trestle tables and desks lining three of the walls. Above these there are Shelves stacked with design books, comics and designer toys. Framed artworks are scattered on the open wall space. I made sure that there were enough power outlets and extension cords so that participants could charge their phones or laptops.

***Materials***

In preparation for the participants' arrival, I gathered creative materials such as paints, inks, pens, pencils, felt-tip markers and arranged these so they would be ready at hand in the studio. I also prepared a jam package for each participant, which consisted of a notebook, black marker pens, money for transport (roughly $15), and vouchers for airtime (roughly $7).

Participants had access to wifi throughout these sessions from their mobile phones and later, on their laptops. Students brought their own mobile phones to the session, but I also provided two Samsung SIII's that could be used for design. Jammers who had their own laptops also brought these in the second week. In addition, I booked two laptops from the University on which the Adobe Creative Suite was installed.

***Recruiting Jammers***

During the last week of classes as I was concluding my interviews for the semester at the mixed discipline class, I printed out a number of flyers which I distributed to both of my field sites. I also made public announcements at both of the sites to describe what I imagined the creative jam would entail, and the invitation (Appendix F) garnered quite a bit of interest. I received seven applications from students who wanted to come to the jam, and after finalizing the dates, four students were able to commit. The 'kasi creatives' – Dizzy (22), Bongani (20), Menzi (20) and Lunga (21) committed to come and jam with me.

***Structure of the Jam***

I decided to keep the pre-planning of the jam to a minimum, so that jammers could dictate the times and activities, depending on what needs emerged within the moment. The rough structures for these days were based on the jam activities set out by Macklin, et al, (2011) bar the "play testing" which was not applicable for non-game related creative production. Instead, we would generate artefacts and critique them along the way.

As previously mentioned, one of the hard constraints which I placed on these sessions was that activities on the first three days would be mobile-only, after which jammers could decide to use computers, or to continue work on their mobile devices. As Macklin et al. argue, such constraints "provide challenges and provocations" (Macklin, Martin and Dikkers 2011, 207) in a jam. I eliminated many of the other obstacles which participants would typically encounter when designing outside of such a controlled environment – such as limitations on airtime and electricity (which I had learned were major barriers) – these were a strategic decision. On the one hand, these sessions would be more enjoyable to the jammers. And on the other hand, as a researcher I could concentrate my observations on the direct role of mobile authoring systems as infrastructure for creative practice.

On the first day we met up and I handed out a rough workplan of the first day to guide our thinking and activities, these were open-ended and I emphasized that these were open for adaptation. Some of the cues I provided included prompts for projects – did the group want to tackle separate projects, or one single project? What did they want as a deliverable? What was it that they wanted to take home with them or add to their portfolio? Beyond these prompts, I introduced participants to the space, including directions to restrooms, established break times for lunch, and re-iterated my own goals for the jam. Our jam took place between Monday the 7th of July and Friday the 18th of July, 2014. On the final day, students and I sat together to brainstorm ideas for potential applications, based on our experiences, to hand over to the Honours students (Appendix D). Each day started with a morning session where we discussed what was accomplished the previous day, and what would be attempted on that day.

### *Documenting the Jam*

One of my central concerns for the jam was that, owing to my involvement, I would not be able to document all of the activities and participate in jamming activities at the same time. I approached a number of friends, who were also creative practitioners, some of whom were already stationed in the studio with us, to assist in the process of documentation. I briefed these documenters to particularly focus their lenses on hands and screens. Otherwise, days were captured with a constantly running audio recorder, which was time-coded for easy reference. I was also constantly taking notes and drawing out sketches of group dynamics. The student jammers were also encouraged to film videos on their mobile devices, or to jump in and use either one of the cameras to document themselves or any of the activities. Two cameras were in circulation - a Canon PowerShot S95, and a Canon D500 SLR. This footage was downloaded after the jam, and backed up in multiple locations.

### Analysing the Data

By the end of 2014 I had accrued a formidable mountain of data consisting of field notes, interview and jam transcriptions, illustrations and graphs, photographs, videos, and so forth. The 143,37 GB of stored data included more than 50 hours of video recordings, 102 hours of audio recordings, thousands of images, and more than 200 pages of field notes. Analysis, therefore, was a tricky process, as very few software packages intended for analysis could simultaneously hold such a large number of files. All of the audio recordings from interviews were transcribed, whereas I watched and listened to all of the recordings from the jams while taking analytical notes and transcribing notable dialogues. These files were imported and then coded in Nvivo.

In addition, to analyse processes of digital creative processes that happen at the micro-level, I imported selected video files into Adobe Premiere, and cut short video sequences of hands on screens to procedurally map steps that were taken to produce visual artifacts. These steps were then described, and also coded.

Through this coding process I was able to divide my data into three distinct categories which I present as case studies in the following chapters. These were 1.) participants' recollections of their creative practices and worlds before coming to university, which are related in chapter 4. 2.) Participants' experiences of infrastructure for creative practice

while enrolled in university, which is the content of chapter 5, and 3.) Mobile phones as authoring tools and jamming as method, which has been condensed into chapter 6.

**Case Studies**

It is argued that case studies are useful within the study of human affairs because they cultivate a shrewd reflection of such affairs, but are often criticized for not being generalizable (Lincoln and Guba 2000). Stake argues that "case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader's experience and thus provide that person with a natural basis for generalization" (Stake 1978, 5). Lincoln and Guba (200036) suggest that there are two kinds of generalizations. The one version is "rationalistic, propositional, law-like" and is well respected in scientific discourse (Lincoln and Guba 2000, 36). On the other hand, generalizations can be "intuitive, empirical," and "based on personal direct and vicarious experience" (Lincoln and Guba 2000, 36) like Stake (Stake 1978) suggests.

I am in agreement with Stake's stance that the basis for knowledge production is not to "well the archives" (Stake 1978, 5) but a resource for certain audiences to benefit from the information produced. As people arrive at their understandings through experience, he contends, it is reasonable to conclude that we can approximate "through the words and illustrations of our reports, the natural experience acquired in ordinary personal involvement" (Stake 1978, 5).

The German philosopher Wilhelm Dilthey argued that science often failed to acquaint human beings with themselves: "we understand ourselves and others only when we transfer our own lived experience into every kind of expression of our own and other people's lives" (Dilthey 1910). I too hope that the case studies presented in this thesis may "capitalize upon the natural powers of people to experience and understand" (Stake 1978, 5). The arguments presented in this thesis revolve around case studies of eighteen students who were on NSFAS funding.

**Ethics**

While conducting this research, I followed the canonical strategies of critical ethnographic methods, including "consent, confidentiality, and protection" (Swartz 2009, 173). This work was presenting before an ethics committee at the University of Cape Town, and was cleared after review. To gain access to the sites, I received permission from the heads of

department to conduct research on the condition that my field sites, and the participants in them would be anonymised. I also obtained individual written consent from the lecturers during interviews with them, and permission to conduct participatory observation during their classes. In order to interact with students, I obtained signed informed consent from them, and kept the data generated during these sessions behind lock and key.

A far trickier task, however, was anonymising the data. Anonymity is a contested issue in qualitative research (Vainio 2012, 684-698). Vainio asserts that these divisions come from discrepancies in the assumed power relations between researchers and the researched, as well as variations in the goals of the research. Anonymity of the field site and the participants were a non-negotiable part of my agreement with the university where this research took place. I struggled to maximize protection of participants' identities while maintaining the value and integrity of the data (Saunders, Kitzinger and Kitzinger 2014, 617). Saunders et al. argue that anonymity is a continuum, and that changing people's names or locations, as I have done in this thesis, is but a first step in "a more nuanced process around managing 'identifying details'" (Saunders, Kitzinger and Kitzinger 2014, 617). Yet I had to face the practical threats to "internal anonymisation", in other words: keeping participants' identities hidden from other participants (Tolich 2004). Following arguments set out by Vainio I see anonymity as relative to the desired goals of research (Vainio 2012) and because my goals were to understand infrastructure in practice, while relating these findings back to a discourse of technology-mediated democratization, I would only change details if they didn't affect the findings (Vainio 2012). Such details include changing, for example, where a participant was from or blurring distinctions between participants who shared similar stories to breadcrumb away from their true identities (Vainio 2012).

Another thorny issue was accountability toward my participants. Many of the young people interviewed for this thesis worked multiple jobs to buy materials for their studies, or to afford the monthly transport costs of attending classes. Their access to resources such as time, money and space were scarce and vulnerable to disruption or depletion. From a critical feminist perspective, Huisman asserts that "full collaboration may work in some situations, whereas in others it may place unnecessary burdens on research participants who may not have time to spare or much interest in our projects" (Kirsch,

1999 in (Huisman 2008). For this reason, I strictly worked to participants' schedules, and coordinated interview times with permission from their lecturers.

I was hesitant to pay participants for their participation, as I didn't want financial gain to be the only incentive for participation. However, I wanted to communicate to participants that I valued their time, energy and input, and thus provided R35 (roughly $ 2.50) in airtime to thank them. Given the harsh financial realities of many of these participants and my own position of power, I felt that, from a critical perspective, it would be unethical to *not* provide some kind of gain for participants (Head 2009, 337). Airtime was chosen as a suitable gift as it contributed to offsetting any costs tied to making interview arrangements.

Many ethical quandaries arose around the use of visual images in presenting this work. As Yang notes, "The tension between anonymity and visibility is one of the critical ethical issues that visual researchers need to address" (Yang 2015, 309). In the initial consent forms, students gave special permission for me to publish their work anonymously – yet, on further reflection, and in light of recent advances in image-searching technology I decided that publishing their images could potentially jeopardize the anonymity upon which this work rests. Furthermore, as Wiles et al. argue even if participants consented to the dissemination of their images in the public domain at the time the research was conducted, they might change their minds later in their lives (Wiles, et al. 2006). In such cases it is very difficult to remove images once they've been published.

In the case of jamming, I had initially decided to not use any of the designs generated during these sessions for fear of making my participants identifiable. However, three years after the jams took place, the jammers have significantly improved their practice, and have no desire to use these designs for any other purposes. With their express permission, I have included visual documentation of their designs in Chapter 6 – which I believe adds much to the arguments made.

**Summary**

In designing a study to explore the tensions between creative practice and infrastructure among resource-constrained aspiring creatives, my motivations ranged from ideological to practical. Ideologically I drew from a critical constructivist research paradigm, and methods that are proposed in critical ethnography, including participant observation,

interviews, and visual methods such as photo elicitation. In a critical ethnographic paradigm, meaning is constructed in dialogue between researchers and participants.

For practical purposes, I found two entry points (Burrell 2009) to my somewhat amorphous field site within an institution where observations and interview data could be calibrated against the formal activities of the classroom. As these sites were manifestations of national policies that revolve around themes of transformation and equity (Kioko 2010), they provided a meaningful stage for testing the role of digital technologies, such as mobile phones, as infrastructure for participation. In addition, from a practical perspective, these institutions were familiar territory to me and gaining permissions were far simpler within the bounds of an institution.

I also argue that the data generated during interviews, observations, and other visual methods were useful in eliciting participants' recollections of how they created using digital media, yet was less than ideal in exploring mobile based creativities. Observations were limited, partially as a result of the class ecology – where mobile devices were hardly ever used as tools for practice beyond research. But they were also limited owing to the fact that such creativities were intimate and embodied – and thus difficult to observe in situ. Furthermore, because interviews were time-intensive, and re-enactments were insufficient in providing insights into these tacit and intuitive processes, I had to improvise.

In this chapter I outlined how I incorporated the spirit of improvisational "jamming" to explore the micro-processes of creativity, while attempting to facilitate a learning experience for participants.

In the following chapters, I present the data generated during all of these activities through case studies in three distinct acts. Chapter 4 presents a retrospective account of participants' design practices off campus, in relation to digital technologies, such as mobile devices. I focused on available infrastructure, and how these technologies of practice shape creative worlds. In Chapter 5 I relate students' experiences of becoming designers within the context of the university, where a formal range of infrastructure has to be mastered. And finally, in Chapter 6, I return to questions surrounding the usefulness of mobile devices within visual design practices, testing free applications with a select number of participants in a "creative jam".

*C h a p t e r  4*

# MEDIA PATCHWORKS: FRUGAL CONFIGURATIONS, DIGITAL TAKEAWAYS AND KASI BRANDS

> *"There's an intimate relationship between artists and their tools. After all, tools are an extension of the human body and intention to create. When mastered, tools help enable new levels of creativity and expression. Of course, they can also get in the way of the creative impulse. Using the wrong tool — or using tools poorly — can serve as a gating function for what is possible to achieve or even what an artist might attempt."*
>
> Adobe Corporate Communications 2015

As of 2017, there is very little research from Cape Town that offers a qualitative perspective on how increasingly pervasive information and communication technologies, in particular smart mobile technologies, have been infrastructural to visual creative practice in South Africa. In this chapter, I give an overview of how a group of kasi creatives, enrolled in two design courses in Cape Town, reflect on their past creative practice and participation. I particularly focus on how they remember the available infrastructure for both formal and informal visual design, and how such visual creative practices, which were valued in distinct social worlds, intersected with digital media.

The aim of this chapter is to not frame my analysis of visual creative practice through its digital intersections, but to give a holistic overview of these kasi creatives' career trajectories. From this position, I investigate whether and how digital technologies, particularly mobile devices and applications, have been infrastructural to creative practices.

## Becoming that kid who can draw

Of those participants who grew up in the townships around Cape Town, the majority recall that being marked as exceptional for their creative talents was closely tied to media fandom and the consumption of children's media such as cartoons and toys. Bongz (22, m) described how he became an ardent rookie artist:

> *It wasn't really people that made me to like drawing, like my dad or something. It was the*

> *cartoons that inspired me to draw. Ya, with drawing it was like Dragon Ball Z and Pokemon, during that time those were the cartoons that we used to like. (02-09-2014)*

In South Africa, the vast majority of households have televisions that broadcast at least four terrestrial channels. The most recently available statistics show that 98.1% of the population regularly watch broadcast television (SAARF AMPS 2016), and that this viewership is distributed relatively equally across economic class groups. The majority of participants in this research project grew up watching free children's entertainment on public broadcast television and many remembered the Japanese 'manga' serials that ran on the South African Broadcasting Corporation's Channel 2 (SABC 2) in the afternoons. These comprised programs such as *Dragon Ball Z*, *Digimon*, *Pokemon* and *Yu-gi-oh!* Nyamnjoh would describe these widely available international titles as the "McDonalized […] entertainment burgers" (Nyamnjoh 2002) served to young South African children in the "interest of profit by the global corporate media" (Nyamnjoh 2002, 5) that sees children as "budding consumers" (Nyamnjoh 2008, 33). This is exemplified through the fact that the popularity and success of these programs was further expanded upon by local brands such as *Simba* potato chips, which, for example, gave away *Dragon Ball Z, Pokemon and Yuh-gi-oh!* "tazos" – small plastic discs that formed the basis of a "pog"-like battle-and-collect games. These characters, stories and games were pervasive across playgrounds in South Africa, and presumably, many other places around the world. The recollection of such media forms as commodities that come from far away reflects the limited selection of local content that were available to young South Africans. Despite national broadcasting charters stressing that African children need to see and hear their own culture, language, and experiences in representative electronic media (Nyamnjoh 2008, 30), the kasi creatives' only memories of avid fandom revolved around these particular programs. However, Nyamnjoh asserts that while "children everywhere may appear to be chasing after the same media products" owing to increased media globalization, African children are "active agents" in their consumption of such media, "modernizing African traditions and Africanising their modernities" (Nyamnjoh 2008, 41). In Nyamnjoh's words, African children consume media "second-hand" (Nyamnjoh 2008). Indeed, such agency was epitomized through the meanings that participants ascribed to these stories and characters through their active fandom.

Many participants recalled that their ability to draw cartoon characters from television or portraits of classmates were practices that made them exceptional, and thus popular among peers who coveted these original drawings. This mode of youth participation can be framed within what Ito et al. (Ito, et al. 2009) describe as "hanging out" – young people socializing across shared interests. This led many of them to start "messing around" (Ito, et al. 2009) with visual arts practices. Simthandile (22) recalls:

> *We made a group of guys. Back then we were maybe drawing like Pokemon, and Dragonball Z. You just watch the TV and you draw these cartoons. You have to be good, cause you have to remember how the character looks. And we would have these competitions, and ladies, like girls would be the judges and say – oh you win and you win. (06-06-2013)*

While for Simthandile, these childhood games were gendered, i.e. "guys drawing" and "girls judging", many of the young women interviewed recalled similar practices. Phumla (21), for example, remembers that her early interest in putting pen to paper was motivated by seeking approval from peers who were fans of certain television programs:

> *We were just friends and we would just do it and just compare, watch Dragon Ball Z, or Disney, get ideas and stuff so ya. It was inspired by what we did on a daily basis I guess. But I always won, and then it made me that person who can always draw everything. (06-06-2013)*

For Menzi, there was a particular personal resonance: his favourite manga serials frequently revolved around epic plots where characters engaged in difficult quests, overcoming the odds and 'leveling up' to defeat their enemies. Menzi (20) saw himself in this hero's journey:

> *You can relate to it 'cause you're also a kid that's having a difficult time in life. So if you can rise up and become something, that's the dream. You want to be like the Goku, in your life. (20-06-2014)*

Menzi appropriated the narratives of these media "dishes" (Nyamnjoh 2002, 43) to better represent and reflect his personal desires and imaginings through what Nyamnjoh calls "second-hand" (Nyamnjoh 2008, 40) consumption: projecting his own meanings into these media texts, in relation to his own cultural and social background. For Menzi, his memory of these cartoons were a significant influence: beyond providing a practical

reference for animated characters that could be reproduced and valued within his social world, these narratives also formed the basis of his childhood aspirational imagination, inspiring a lifelong fandom of cartoons and animation, and projecting this "hero's journey" (Buckingham and Sefton-Green 2003) onto his own subjective experiences. Menzi mentioned that he would draw portraits of popular cartoons for classmates in exchange for small amounts of money during the 6th grade, "*because I can draw and you can't. So, if you want this picture of Goku, you can pay me R2*" (20-06-2014). Max (19) also recalls that he would draw images of cartoon characters and "*sell an A3 for R2 to the laaities*[16] *in the lower grades*." (11-11-2014)

Many of these young creatives recognized the cultural, social and (in the case of Menzi and Max) economic capital of their talents, and spent a great deal of time cultivating their knowledge of manga to increase their status among peers. As Simthandile recalls "*you have to be good*" (06-06-2013). Extending Bourdieu's theorization of aspiration, Arjun Appadurai has argued that an individual's 'capacity to aspire' is fortified by social, cultural and economic capital (Appadurai 2004). In other words, the aspiration to be a skilled creative is situated within the relative values that these peer communities ascribe to the practice and resulting artifacts of creativity. At the same time, such aspirations are also relative to contextual 'spatiality' (Appadurai 2004). In other words, they are tied to the very physical and mental access that a person has to the spaces in which such practices 'live', and also their 'navigational capacity' within these, playing a central role in how people perceive their options for the future. While participants' recollections of early visual arts and design practices were entangled with quests for recognition and status within childhood peer interest groups, the valued nature of such cultural production, associated particularly with drawing, dwindled as they grew older. Predominantly this was owing to the fact that there was less social, cultural and economic capital tied to visual arts practice, as these same young people grew out of their obsession with cartoons. Yet this was also tied to the fact that the majority of schools that these young people attended did not place any importance on artistic skill, and thus did not provide material and spatial settings for "habitual practice" (McCullough 1998).

[16] South African slang for a youngster, particularly male.

**Formal visual arts education at school**

As discussed in chapter 2, visual creative practice emerges between the body (McCullough 1998, Ingold and Hallam 2007) and a media ecology (Ingold 2012, Tanggaard 2012) supported by infrastructure (Star 1999) for creativity, but also in response to the value, or cultural capital (Bourdieu 1984, Bourdieu 1986) ascribed by the social worlds within which these practices and artifacts are situated. Very few participants had the material and social support to improve their creative practice formally within the schooling system, as arts education is a rarity in South Africa. Only four of the eighteen participants had the option study visual arts as a school subject. Even among these four, the material infrastructure within their school buildings that supported art practice was frequently compromised. Simthandile (22) was able to study art at school, but the subject was soon cancelled after intermittent incidents of theft left their art studio without any usable materials or desks.

> *While I was in high school I was doing art, and at primary I was one of the top artists. But I've changed while I was in school because the school that I went to was corrupt, so I couldn't pursue the art part because the art class ended up being collapsed because of the theft and all that. So I couldn't continue with my art talent.* (09-04-2014)

Simthandile's assertion that his school was "corrupt" echoes findings from Schwartz's ethnographic study of young people who grow up in "ikasi", where students and teachers have been knows to steal school equipment (Schwartz 2009). Simthandile added:

> *My teacher was also drinking a lot so it was hard for him to pitch at the right time. (09-04-2014)*

According to Schwartz, alcoholism is a major social issue in townships around Cape Town, and in her study students reported many teachers who came to school "drunk, drunk, drunk" (Schwartz 2009, 33), contributing to school environments that were "unstable", "complex" and "inconsistent" (Schwartz 2009, 44).

In lieu of art lessons at school, a number of students clearly remembered "doodling" during class – either drawing on folio paper, or in their school textbooks, as a strategy to overcome boredom. As Zittrain (2006) asserts, paper and pen are highly generative materials: they have great capacity for leverage in that they are adaptable to various tasks including artistic practice. The majority of able-bodied people can master the use of paper

and pen with little difficulty. And lastly, these resources are greatly accessible, as they are cheap and easy to find. Thus for many of the kasi creatives, pen and paper were among the most generative materials they used for creative work.

Onwaba (18) lamented that the subjects on offer at their school were limited and bored him: "*my school didn't have anything to do with art and things like that, it's just study study study...*" (03-04-2014). Neo (21) also found his attention drifting in class, where his personal interests seldom intersected with the curriculum on offer. He described himself as "*not good at school*" (14-08-2014), explaining that, "*during those periods for maths, I'm drawing comics, making jokes and so on*…" In these cases, participants saw their artistic practice as rebellious in school contexts, where the acquisition of, for example, math literacies was prioritized and validated by teachers and the social world of secondary school. Thus, there were few options for students to gain social or cultural capital in relation to their creative practice at school.

For many students, drawing and visual creativity took a brief hiatus during their enrollment in high school: Yonela (18) remembers "*there were many years at school, where I didn't even draw one thing.*" Most of the schools attended by participants did not value formal artistic practices as part of the curriculum, and spaces for such creative practices were limited. Hence very few students (only four out of the eighteen participants) cultivated any 'formal' artistic skills while at high school. Thus very few students were able to sharpen their skills within "habitual settings for practice" (McCullough 1998, 192 - 193).

**Alternative spaces for visual creative practice and participation**

While school wasn't typically a site where artistic practices 'lived', the majority of students do recall casually drawing during their spare time at home. Such drawings were typically made with blue ballpoint pens and HB pencils on folio paper – the standard repertoire of materials that young people used at school.

Few of the students surveyed had more than intermittent access to internet-connected computers before coming to university. Among the group of 18 kasi creatives, for example, four students recall that there weren't *any* computers in their school buildings. Another four reported having computers within the school building, but not having any personal access to them – either owing to the fact that they didn't have computer classes as a subject, or that computers were exclusively reserved for staff or select student groups,

such as prefects. The remaining ten students had computer labs in their schools, but only three participants were allowed to use these during computer classes – this group were all enrolled in Computer Application Technologies (CAT) classes and computers were reserved for this subject. Henry (22) remembers that, even as a CAT student, he could

> *only [use the computers] once a week. During breaks you can use computers…but by the time you get to the computer labs it's all full, cause everyone wants to use the computers. (14-10-2014)*

Participants relate stories of frequently being told by educators that the internet was off-limits during CAT teaching sessions, or only being allotted a very limited amount of time to surf the web during their breaks, while also competing for scant space with other students. Similarly, while many students used computers in the libraries, there were limited stations, so they would have to queue, and time limits were strictly enforced.

Thus, while most students did not have much experience of desktop computers prior to university, let alone sufficient knowledge to use these devices as creative mediums, a couple of students did use laptops creatively during their school years. Qondile (22) was gifted his cousin's old laptop while he was still at school. His cousin taught him how he could pirate a variety of software by visiting the local cybercafé and using the network cables there to connect to the Internet for R10 per hour. He recalls that this acquisition resulted in him shifting gears with his creativity:

*Qondile:* *I quitted drawing with pencil and pen all that stuff, like being interested in drawing. Since from 2010 I just used to draw with the software because I was more interested in making logos and editing pictures. I started editing pictures, creating logos with that software and music; like I was more interested into virtual stuff than drawing. Ya virtual stuff.*

*Anja:* *Why wasn't drawing by hand appealing to you?*

*Qondile:* *Let me say for instance graphic designers; have you seen like before you draw something virtually you have to sketch it first? But when you compare the sketch and that virtual image, which one is good? With computers and software it makes things look real, especially when drawing cars. There are many people*

*who can be designers while they can't even draw. (06-05-2014)*

Qondile's extended media ecology also extended his 'capacity to aspire', and suddenly his dream of "designing cars one day" (06-05-2014) came into focus. After discovering the powerful authoring capabilities of his laptop and seeing the work of others who designed cars, Qondile took a step back from his drawing practice. Cultivating his computer-based skills took precedent so that he could gain legitimization in the creative world of industrial car design. Instead, Qondile would only use his illustration skills to roughly draw what he wanted to accomplish on the computer. From this vantage point, Qondile could *engage* with the practice of car design, *imagine* how his experience and capacity to create compared to others in the world of car design, and increasingly *align* his own practices to those in this specialist field (Wenger 1998, 173-187). Extending his resources for creativity thus had a direct impact on his participation in the social world of industrial design.

Henry (22), on the other hand, had exposure to computers and visual design through connections at his mother's place of employment, offering him social and cultural capital in the world of graphic design. His mother worked as a "tea lady [17]" (14-10-2014) at an advertising company, and her employers encouraged Henry to study graphic design so that he could intern at the company when he finished his degree. In addition, his mother bought one of the old Macintosh computers from the company for them to use at home. The computer came installed with the full *Adobe Creative Suite*, and although it was not connected to the Internet, Henry taught himself how to produce basic designs in *Photoshop* and *Illustrator* by "messing around" (Ito, et al. 2009) with the programs.

Other students gained some computer access through mentorship opportunities or extra-curricular programs. Olwethu (20), for example, was enrolled as a student at an afterschool programme called *Ikamva Youth*, a non-profit organization that aims to empower learners through a particular focus on 'e-literacies'. In addition, she was able to take a short course in photography, and learned how to manipulate these images on the computers. She framed this experience as giving her distinct advantages, "*I could use these computers almost every day*", and described herself as "*advanced…unlike the others [at school]*" (15-08-2014). Through her involvement in the program, a mentor assisted her in researching university

[17] In South Africa, a 'tea lady' is an employee of an office whose primary duty includes preparing and serving beverages and snacks, particularly during meetings. Typically tea ladies also tend to office cleaning duties.

courses and preparing the entrance portfolio she was required to submit with her Visual Design application.

Menzi (19) credits his path into the Graphic Design course to his involvement in an afterschool math-tutoring program organized by his school, where a university student advised him to apply to a local mentorship program. The mentorship program put him in touch with a number of career guidance councillors, who organized a work-shadowing opportunity for him at a marketing company. He spent his school holiday learning how to do the very basics of web-design at the company offices in the city, and grew interested in graphic design for web. The company covered his transport costs during this period, and also, after he completed his matric with poor results, paid for him to re-write his exams so that he could obtain the necessary marks to apply for university the following year.

These recollections of visual creative practices outside of school contexts where students gained human, material and digital resources such as contacts, computers and spaces that valued and facilitated creative practice were relatively scarce. Many students report active, albeit 'informal' creative practices, which were enabled by their access to mobile technologies, discussed in the next section.

**Mobile Ecologies and Creative Practices**

While access to formal arts education and networked computers were relatively scarce in the lives of many of the participants interviewed who fell into the 'kasi creative' category, more than half had access to their first mobile phones by the age of 14. While these early phones were typically 'basic' (Donner 2015) phones that could only perform a limited number of functions such as calling and messaging, students from township settings like many young people worldwide, count their phones among their most prized possessions (Ling and Haddon 2008, 137). Onwaba (m, 18) recalls that "*my phone was my life*" (03-04-2014), expressing a sentiment that many of the participants share. Phumla (f, 22) also attached great significance to receiving her first mobile phone:

> *My first mobile phone, I was doing grade 8, I got a Nokia 6111, do you know that phone? It was a small phone, it was a slide phone, I think it was one of the first sort of smart phones with internet – it was very cute. And I was the first one to have it in my hometown. (06-06-2014)*

Sikelela (m, 20) remembers his first phone, which he received at the age of 16, for its utility:

> *It was a Nokia E63, it was the best phone I ever had. I loved that phone. It had all the applications anyone could ever ask for. (13-05-2014)*

As participants grew older, they graduated to using more advanced phones. Especially during high school, in the absence of internet-connected computers, mobile phones were frequently cited as an important resource for research at school (n=15). Sikelela recalls:

> *I used my phone for a lot of school work. I did my PowerPoint presentations on that phone. I wrote most of my school assignments on that phone. It had all the Microsoft programs. I researched a lot of information for schoolwork from that phone. Yah, it was like my best friend. And I communicated a lot with people! (13-05-2014)*

Beyond their capabilities as research tools, the majority of students avidly recalled their phones as tools that were primarily coveted for their social purposes. Messaging and photography were, without exception, activities that students considered central to the social life of these teenage kasi creatives.

### *Digital images and Sharing Ecologies*

Mobile devices were most prominently described as a means to keep in contact with friends or family. Students used a repertoire of low-data applications such as Mxit[18] or 2go[19] to facilitate their 'chats' until, more recently, WhatsApp became the pervasive medium of choice for these communications. As participants advanced through high school, all but one report having access to increasingly smarter phones that had built-in cameras, storage (either on-board or through memory cards) and could connect to digital application market places. These devices offered a significant opportunity to engage in visual media consumption, as well as authoring practices.

The visual culture that 'lived' within such mobile ecologies prominently revolved around the collection of images that carried some form of cultural capital – favourite celebrities,

[18] Mxit was a free, South African-developed instant messaging application that ran on a massively diverse selection on mobile devices – including feature phones. It was immensely popular in Africa, and at its peak had 7.4 million monthly active subscribers (2013).

[19] Similarly to Mxit, 2Go is a social networking application that is predominantly used for instant messaging. 2Go has also gained steady popularity owing to its capability of running on feature phones. Unlike Mxit, 2go is still an active service provider.

friends, family, places, etc, carried around on portable phones reflected their bearer's interests and communicated these to members of their social worlds. For example, Qondile (22) recalls avidly collecting images of sports cars, while Yonela (18) dedicated her storage to images of the musical artists Rihanna and Beyonce. These practices coincide with the kinds of youth activities that have been reported in studies on youth and mobile phones in South Africa (Kreutzer 2009, Venter 2012, Walton and Donner 2012, Walton 2014) where young people download images from WAP sites, and share these with friends via Bluetooth or other messaging applications. Such practices can be framed within Marion Walton's concept of a 'pavement internet' (Walton 2014). Walton's formulation of the term extends arguments by Frances Nyamnjoh (Nyamnjoh 2005) that articulated how digital social media in the context of Africa are a welcome extension of local traditions of informal word-of-mouth communication (Nyamnjoh 2005) dubbed "radio trottoir" – translated to "pavement radio". *Radio trottoir* is conceptualized as the circulation of information as "rumour" which informs public knowledge. For example, while some individuals might read the newspaper, or gain information from more "official" source, news is distributed through personal networks, as a form of sociality. Walton's theorization of a 'pavement internet' describes how information (including data such as images) downloaded from the web, which is expensive to obtain owing to young people's limited data resources, trickle down through interpersonal networks at low data costs.

Scholars such as Senft and Baym (Senft and Baym 2015) have argued that visual content is consumed differently in social media settings than via older forms of visual media – while a film in the cinema might be consumed through 'gazing', or a television program displayed on a tv set in the corner of the room is consumed through 'glancing', online images are consumed in a "segmented and tactile manner" (Senft and Baym 2015, 1598). Senft suggests the metaphor of 'grabbing' Senft 2008) to characterize this mode of consumption: 'grabbing' an image on your mobile camera or off the web; 'grabbing' the attention of viewers for a moment; the online circulations of 'grabbing' an image and sharing it somewhere else; the mode in which social networks 'grab' the metadata of our posts to sell to advertisers; and so forth. While Senft's concept of 'grabbing' originated within a particular, well-resourced mode of digital participation, facilitated by social networks such as Facebook or Instagram, the metaphor is especially poignant when considering how young people from low-income contexts 'grab' images from the web and then re-circulate them on a very low- or zero-cost "pavement internet" (Walton 2014).

Participants such as Yonela and Onwaba didn't have the economic resources to participate in high-data social networks such as Facebook, so they grab 'digital takeaways' that are consumed and distributed elsewhere.

Kreutzer reported that the majority of mobile image sharing practices in his 2008 study of township high school scholars took place via co-located Bluetooth networks (Kreutzer 2009), but a few years down the line, the participants in my study had the added advantage of WhatsApp and its low-cost image sharing capabilities. As many mobile service providers in South Africa sought to gain access to larger markets by offering special deals revolving around the platform, young people were able to exploit these specials (which ranged from zero-cost offers to monthly all-inclusive bundles) and images could thus circulate beyond the co-located paradigm.

The most significant addition to young creatives' visual repertoires, however, was tied to increasingly sophisticated cameras on mobile devices.

***Mobile cameras, making images and negotiating storage for digital belongings***

Before coming to university, the majority of students had 'grabbed', edited and shared images of their own. As Pierre Bourdieu observed in *Photography: a Middle-brow Art*, the desire to photograph is both socially constructed and culturally specific (Bourdieu 1990). For participants of this research, mobile photography was a popular means of everyday communication and documentation. Very few of these young people grew up in homes with a camera and thus have comparatively few images from the pre-mobile-camera era.

Beyond its everyday use, mobile photography has also become an increasingly common medium of choice for professional designers, artists and photographers (Baker, Schleser and Molga 2009), blurring the lines between professional and amateur production in terms of image quality. In as far as infrastructure for visual creativity can be considered, access to a mobile digital camera counts among the most powerful tools that became available to the young creatives in my study.

Recently, a group of young mobile photographers from the townships around Cape Town established the #kasiinstawalk to represent "the township through the eyes of its residents" (Gana 2015). Instawalks are a contemporary mobile photography phenomenon that has emerged around the photographic social media platform Instagram. In such

gatherings, individuals, corporations or role players in the Instagram community meet up to take walks in different urban and rural spaces (Hoogendoorn and Gregory 2016), taking photographs as they go. Instawalks have largely been perceived to be a middle class hobby, but founder of #kasiinstawalk Mawande "Manez" Sobethwa has seen their cause as a fight for fair representation: "with mainstream media not doing ekasi any favour by continuing to paint dark images of it, I saw a need to tell a different story" (Gana 2015). In this view, photography is an especially powerful form of personal representation and expression of agency, informing public imaginaries of people and places (Creech 2015). In the case of the #kasiinstawalk, young mobile photographers were able to forge their own creative worlds around these practices, and take photographs which congealed their experiences into "thingness" (Wenger 1998, 58). In turn, these practices, and their recognition as participants in this creative world forms and transforms their identities as creators.

During our interviews, I asked students to show me any images which they had created before university and which they were especially proud of creating. Most participants had phones with images that dated back a number of years, noting that they had to carefully curate images to save space on their memory cards. Storage was a significant issue that many of the students faced before gaining access to university computers and networks. A handful of students recalled backing up their digital belongings onto their own or other people's laptops, while a small minority had access to hard drives where such digital goods could be backed up. The majority of students simply kept erasing images to make space for new ones. However, losing such concentrated and carefully considered collections were absolutely devastating in the cases where participants were robbed of their phones. The vast majority of the students interviewed had at least one incident of having their phones stolen, and most had their phones stolen more than once.

While cloud backups are increasingly standardized with newer computer systems, storage online was far too expensive to become a sustainable part of these creatives' digital media ecologies. Most students, however, recall peer-activities of sharing that preserved their digital media in a kind-of ad-hoc friend-cloud:

*Menzi:* *I lost all the photos from my other memory card. But sometimes I find some of my pictures when I look through other people's phones, and then I say "ah I remember this picture, can I have it."*

*Anja:* *So your friends were kinda like your cloud?*

*Menzi:* *haha! Yes, but only when I see them. (27-01-2013)*

While for Menzi, this realization of a friend-cloud was somewhat accidental and connected to the ability to scroll through friends' phones in co-located interactions, OIwethu (20), on the other hand, consciously 'backed up' her photos with her sister –

*What I do is, when I like a picture I send them to my sister. The pictures that I love I send them to my sister so that she's going to get them; if something happens to mine at least I know I haven't lost much. (15-08-2014)*

The majority of participants reported little more than vernacular creativity, in other words: the kind of casual, everyday visual creativity which might be a byproduct of other social practices (Perkel 2011, 22) such as sharing family snapshots, celebrating birthdays or documenting a milestone. Only a select few, with varying degrees of intentionality, reported participation in practices (such as producing, or learning about, graphic design, illustration, photography and branding) that were consciously undertaken to develop their identities as serious creative practitioners.

### *Documentation of analogue drawings*

Students who created drawings and had access to camera-phones frequently photographed their work with their phones so that these could be digitally documented on their devices. The majority of these images were used to show off artworks to friends or family. In a few cases, young people would use applications to position their own drawing next to the reference from which the image was drawn. For example, Lunga (m, 21) showed me an image that he drew of a skull tattoo: on the one side of the image is a photograph of a man's arm with a tattoo of a skull in a top hat, and on the other side of the frame is his own interpretation of the image in pencil. He composited the two images together with a mobile application called PicMix, and placed them side-by-side in a white frame.

The popularity of the mobile application PicMix among interviewed participants (11 of 18 participants report using the application) was a significant discovery. PicMix is an app developed in Indonesia, which consists of a photo editor and connected social media platform. The most recently available statistics on PicMix reveal that the app has amassed 6 million registered users in South Africa (Shu 2016), far outweighing the popularity of

global heavyweight Instagram, which only has 2.68 million subscribers nationally (World Wide Worx 2016). The app, which launched in 2012, has a large following in South East Asia, and gained its advantage by porting the application for a wide variety of operating systems and setting up carrier billing to facilitate in-app purchases for users. Most notably, the app could be loaded onto both Symbian and Blackberry OS, which gave the developers a distinct advantage over popular image editing applications that focused on Android and iOS markets. Yet, the app is seldom mentioned in audits on the most popular applications in South Africa, and there is very little data available on its use locally. Among users of the application surveyed for this project, the majority of participants report using the app for its editing capabilities, with none of the participants ever uploading their images onto the PicMix platform. Students claimed that this was owing to the high costs associated with uploading, and the fact that few of their friends ever frequented the platform. Thus, while the numbers are impressive, when browsing through the PicMix platform, there are very few visibly active South African users.

Lunga (21) used the editing capabilities of PicMix to frame his work and make it look "*more presentable*" (03-07-2014). For Lunga, such composite images are useful to "*show off*" his drawing skills to peers over WhatsApp, as well as document his progress as an illustrator: "*I can get some feedback maybe, and then in a year when I look at it. I'll see yho, I'm so much better now than then.*" The affordances that mobile cameras offer for documenting and editing images are particularly useful for young creatives who want to network with their art. Yet Lunga never *actually* networked with his art in any significant way. Instead, he shared such drawings with friends in his phonebook, and remembers uploading the work to his Facebook profile, which he seldom ever logged into before coming to university owing to the associated costs. Thus, while low-cost mobile ecologies afford kasi creatives the means to digitize their creative work for online distribution, these affordances are relatively weak compared to the distribution powers of, for example, Facebook or DeviantArt, which require more data, in gaining wider 'visibility' on the digital networks lauded by the creative consensus. Owing to the high data costs associated with uploading, and then promoting, images on visual web digital networks such as Facebook, Instagram, or Behãnce, young people interviewed didn't connect their creative practices to the "larger circulations" (Jenkins and Bertozzi 2008) of infinitely networked audiences. Participants were more likely to share images in collocated or interpersonal networks. As discussed in Chapter 2, according to the "logic of networks", as formulated my Mejias (2013), social reality is

constructed in such a way that only nodes that can 'see' other nodes deserve to be accounted for (Mejias 2013). The sharing practices related here can be conceptualized as presenting "phantom nodes" that become unsearchable, untrackable, and invisible (Mejias 2013). In this way, the sharing practices of a 'pavement internet' pose a paranodal 'other' to the "nodocentric" logic platforms such as Facebook, Instagram or Behãnce (Mejias 2013).

While much of participatory culture literature associates a discourse of progress with "bridging the digital divide" or closing "participation gaps", it seldom questions how it delegitimizes, excludes and, at an extreme, sees as a threat (Mejias 2013, 12) subjectivities that do not cooperate with this particular brand of network logic. Among kasi creatives interviewed, captured and authored images circulate in personal, embodied and co-located spaces. Thus, while much of the creative consensus has pointed at the important roles of affinity spaces, online communities, and convergence of circulations of both professional and amateur media, kasi creatives' circulations, owing to data costs, don't gain much traction beyond the 'pavement internet'.

***Selfies and Editing Pictures***

A vast majority of participants reported frequently capturing selfies. Recent research has extended the discourse of meaning assigned to the practice of selfies beyond a narrative of empowerment or disempowerment (Senft and Baym 2015). Selfies can be a form of self-documentation and self-reflection (Nemer and Freeman 2015), an expression of humour (Albury 2015), a form of agency and "self enacting itself" (Frosh 2015), a proof of witness (Koliska and Roberts 2015), a staged performance (Hess 2015), a social vernacular (Meese, et al. 2015, Katz and Crocker 2015), among many other emerging understandings of this ubiquitous social practice.

Yonela (18), who was among the few students who was able to study visual design as a subject at school, reported that editing selfies on her Nokia extended her visual design repertoire:

> *I obviously like drawing, but I developed a new hobby since I got this phone last year, of- I don't know if I should call it a hobby but anyway of like, I like editing photos now. There's [an app called] Pix Sketch, there's one called Beautiful Photo and then there's Phototastic and*

> *then there's Nokia something-something, along those lines but there's quite a few. I think there's 5 or 6 of them that I have. (27-05-2014)*

When asking her about the different apps that she used, Yonela described in great detail how each app provided her with different visual design features: from filters, image adjustments, sketching capabilities, text overlay, collage functions, decorative pre-designed frames, and so forth. She enjoyed these tools as they "*don't take up space, or cost any money*" – unlike the paintings that she was making at school, which were very expensive to produce. Yonela's considerations of "space" and "money" sit comfortably with claims that consumer technologies are a democratizing force – that through digital technologies, one can be creative for a fraction of the price of analogue equivalents – i.e. painting or film-photography.

During our interview, Yonela showed me a series of *selfie* images that she created. Like many of her classmates, Yonela is an ardent selfie-taker. Yet her selfies are different to the run-of-the-mill selfies one might send to a boyfriend, friend or family member – Yonela heavily edited her images, overlaying them with text to create personally meaningful mobile artworks. To demonstrate, she showed me a striking image of her posing against a wall. In the image she wears a turban, t-shirt, a mini skirt, and sneakers. One leg crossed over the other. The image had been treated to look as if it's sketched in black and white. Running down next to her is red text that reads: "*you cannot buy what is not for sale.*" When I ask her what the image is about she reveals the personal significance:

> *I sometimes struggle with my parents and my culture. So my mom has some Sotho genes, and my dad's Xhosa, but like super deep Xhosa. Like, all of my friends are guys…and my dad says I must not hang around the guys. But I just can't seem to make friends with girls. You see, in Xhosa culture – there's this…it's very separate. Girls must be a certain way. There must be a big wedding in the Eastern Cape. Sometimes there's even still ukuthwala - where the family makes a match for you. There must be lobola…(27-05-2014)*

Yonela listed a number of traditional Xhosa customs that she finds troublesome: *Ukuthwala* is a practice whereby, "as a preliminary procedure to a customary marriage, a young man forcibly takes a girl to his home" (Mwambene and Sloth-Nielsen 2011). The custom has been controversial owing to many instances of child abduction, where such

child brides are then forced to marry much older men. *Lobola,* which is a far more common South African practice, involves the bridegroom's family paying a negotiated sum to the bride's family. Yonela found both of these traditions in conflict with her identity and construction of personhood. For a budding visual creative like Yonela, mobile photography and editing capabilities offer an opportunity to creatively grapple with cultural visuality and processes of personal identification. She describes feeling torn between the culture of her peers – being a modern young person in South Africa, influenced by global cultures, international music, fashion, and sport – and the conservative traditional culture of her Xhosa elders:

> *This is like me saying – I like certain parts of my culture. But other parts I don't want. So, I like my culture. But sometimes I think…I'm maybe too modern and my family is very critical. So I think this image says that I can be my own person, and I can be Xhosa too. (27-05-2014)*

Selfies, as a form of mobile art practice, afford Yonela the ability to "draw complex and often contradictory subjectivities together" (Hess 2015, 1629) – a means to control her own self-image as a hybrid of her inherited traditional visual culture, and her interests in modern global youth cultures. The overlapping social worlds of her traditional culture, and her fandom of global media franchises, lead Yonela to grapple with her authenticity as she sees these worlds intersecting. To forge her identity at the intersection she reifies her position by "producing objects that congeal this experience into 'thingness'" (Wenger 1998, 58) in the form of a selfie – representing her identity as a creative. While her formal education provided her with foundational knowledge of the visual creative arts, her phone offered her an easily accessible toolkit to give shape to her creative expressions. Thus, while painting on canvas came first, Yonela could identify the affordances of her phone as a creative medium and exploit the technology to author striking graphics in the absence of more traditional material resources and space to paint. Like Lunga, Yonela's pictures never gained any significant 'visibility' within larger creative social worlds, or the social worlds of other selfie-artists. Instead of flowing between nodes of networks, these images are appended to ever-changing media patchworks.

### *Digital Takeaways*

While Yonela was among the very few students who had access to formal arts education, students such as Neo (22) went to great lengths to educate themselves. Neo, as previously

mentioned, never saw himself as a particularly good scholar. And when he finished school, few opportunities were available to him. Neo took a number of small jobs, did work for the church and tried his best to make ends meet. But within a few months, he was yearning to follow his aspiration of becoming an artist:

> *I decided to just follow my dream, to continue what I'm doing and love, which is art, drawing, designing some stuff… I started to draw and to do research; every day I woke up and went to the library just to research about drawings, how to do realistic portraits, how to do figure drawings and some stuff. (14-08-2014)*

Since Neo's immediate environment was not conducive to creative practice, he sought out spaces where he could learn about visual arts. At this point, Neo relied on a handful of books about drawing and fine arts that were available on the library shelves. On off days, he dutifully took these books and found an open table where he would sit and spend hours practicing his drawing techniques. Often he would keep going until the library closing time and the librarians had to "*chase [him] out*" (27-05-2014).

Once he had improved his drawing, Neo decided to start his own business, where he sold custom portraits to people in his neighbourhood. But for Neo, his new burgeoning art career was off to a slow start:

> *So when I started that business I was always getting maybe one client per week, I didn't have that marketing strategy you know. (27-05-2014)*

Yet, despite not having the marketing skills to draw in more clients, drawing portraits in the community increased his visibility as an aspiring artist among neighbours and drew attention from a peer who was already studying graphic design at a local university, a contact within the social world of design who posed social capital in the field. Neo's new contact related information about the industry, graphic design, branding and digital design, and encouraged him to apply for university, where he could formally join a design community of practice. Neo recognized that he needed access to better learning resources to pursue his aspirations seriously. He submitted an application portfolio for the visual design course, and was turned down on his first attempt.

Neo's graphic designer friend offered him advice,

> *he tells me that I can do these things called tutorials to improve my drawing. I should look on the computer at the library on YouTube. (27-05-2014)*

Neo started using his 45 minutes of free Internet allowance at the library to watch drawing tutorials on YouTube. But following tutorials on the library computers proved more difficult than he anticipated: there wasn't enough space on the cramped desk to comfortably place his drawing pad, the time limit was a hindrance and he couldn't play the sound of the videos while inside the library. A technical assistant at the library saw what he was doing, and suggested that he download videos onto his phone so he could take them home with him. At this stage, Neo did not have a phone.

Once again, work picked up and Neo found a regular job at a local orphanage – taking care of young children in the afternoons. He continued to visit the library, but less frequently. In that year, he again applied to study graphic design. And again, he did not make the cut. He remembers telling a friend at church, a social world within which Neo was very active, that he was looking for a new phone, and a member of his church gave her old Samsung handset to him later in that same year. Neo brought his Samsung to the library, and the technical assistant plugged it in and showed Neo how he could copy videos that he could later watch at home. It was a turning point for his creative practice, "*It changed my life*" (27-05-2014).

Neo remembers sitting awake for long nights, concentrating on improving his drawing. During this six-month period, he continued working as an artist in his community, a street artist in the city drawing people's portraits on the streets, as a volunteer at church, and as a minder at the orphanage. But now, at night, he could work through the handful of videos that were stored on his phone, cultivating his skills without needing to heed library times and usage rules.

At home, Neo used a wooden clipboard to press down on, as he did not have a desk at home. This embodied practice, of learning how to draw from a mobile device placed right next to his 'canvas', was far more comfortable that squeezing in his drawing pad at the computer station at the library.

For Neo, learning how to draw was thus a long and arduous process spanning over three years after he completed school. It was difficult for him to negotiate the time and the space he needed to spend on this practice and gain the right amount of cultural capital to meet the standards of participation within the university context, particularly without any formal training at school, anytime-access to unlimited online resources or a place where he could comfortably practice drawing. What his new mobile computational device afforded him was the mobility of resources that were once fixed. He could now take his training materials with him wherever: whether that was to a table at the library, at his home, or at his place of work. Neo wasn't constrained by his location or physical circumstances anymore. The affordance of the mobile phone to take 'digital takeaways' home with him, allowed Neo to work on the go. In 2014, Neo was finally accepted into the ECP program.

Neo's admission into University was not miraculously enabled by his access to a mobile device, but was the result of a larger ecology of connections, resources, places, infrastructure and time. Yet, the mobile phone's affordance of visual documentation and display features, as well as its affordances as a communicative device, allowed Neo to reconfigure resources to meet his goal of gaining access to the course.

Neo's offline use of videos meant that he was not able to fully participate in affinity spaces, or participate in ways that are well documented in participatory culture literature (Jenkins 2009) with, for example, the YouTube videos at the library. His usage there was both capped (in that he could only use the computers for the allotted 45 minutes) and also curfewed (in that he could only gain access when the library was open). Neo didn't engage with the authors of these videos, he didn't leave comments, or share the content on other media platforms. Instead, Neo had to make do with 'digital takeaways' – severing these videos from the participatory culture that surrounds them. In turn, these videos become part of Neo's own media ecology, allowing him to introduce these artefacts into his own socio-material context – stripped of comments, likes, and metadata in any *traditional* sense. Here's Neo's digital takeaways are included in his patchwork of visual media – scraps of media cut from the source, gifted by friends, or discovered in other people's collections – stored on his phone. Instead of a network where nodes are constantly transmitting and receiving information through communicative flows (Mejias 2013), this node is severed from its links, and gains new meanings among other data in Neo's ever-changing media patchwork quilt.

### *Branding and Kasi clothing labels*

When Onwaba (18) entered the 11th grade, he was gifted his first mobile phone (a Nokia 500) for his 18th birthday and started "spending hours" chatting to strangers on Facebook chat. During this period (2013) Onwaba used a stripped-down, text-only version of Facebook called Facebook Zero. Onwaba was particularly active on a Facebook page called "Cape Town Hip Hop", and met a peer who shared his interests and lived nearby. Soon Onwaba became friends with a group of young people from his neighbourhood who were interested in spending constructive time playing music, rapping and creating art, "*And I got to know some guys…So ja, we just started this crew."*

Their crew, whose central interests were "*American Hip Hop, freestyle rapping, and skateboarding*", dubbed themselves "The Kasi Squad[20]". With mobile phones in hand, they began sending images of their crew, stylized and posed, to friends on social media such as Facebook, Black Berry Messenger (BBM) and WhatsApp. According to Onwaba, their image(s) inspired fandom among their connected peers:

> *People were like, that's cool. We like the style. It says something about where you are from and where you want to go. Like, we 'kasi, it's rough, but we cool. We can have the lifestyles too. (03-04-2014)*

This projection of "lifestyle" to battle the stigma of kasi-associated poverty is a source of agency for young people like Onwaba, as van Leeuwen argues that lifestyle has begun to replace social class "as the as the main type of social grouping and source of social identity" (van Leeuwen 2005, 139). Marwick has extensively written on how 'branding' and 'celebrification' has become central to how social network metrics frame participation on the visual web (Marwick 2015). She argues that young people "often reproduce conventional status hierarchies of luxury, celebrity, and popularity that depend on the ability to emulate the visual iconography of mainstream celebrity culture" (Marwick 2015, 139) in order to gain the currency of an attention economy. At the same time commercial popular culture also appropriates street innovation to project "street cred" (Haupt 2005). In their portraits, the Kasi Squad mimicked poses of hip-hop celebrities, with a focus on designer clothing and leisure activities. Their kasi lifestyle was framed as glamorous and desirable through mobile selfies and drew both attention and admiration. While Onwaba

[20] The name of the participant's crew has been altered to obscure his real identity.

and his crew's activities weren't published to any specific social network, they followed the same strategies of "celebrification" and "self-branding" (Marwick 2010) to gain visibility within their peer networks. Instead of publishing these images to social media platforms such as Facebook, the Kasi Squad sent these images to contacts over WhatsApp.

In an extension of their brand, the group of young men fashioned a logo on an older friend's laptop. They were able to use a version of Adobe Photoshop, which the older friend pirated via access at a local cybercafé (R5 for 30 minutes). They exported a PDF file, saved it to a flash drive and took it to a local print shop to have t-shirts made. Soon, a few friends within their extended circle asked for shirts, and Onwaba saw a business opportunity,

> *I said ok. Give me R120, I'll make you a shirt. Then I go to the print shop and they print the t-shirt for R70…maybe R60…but that's not so nice the material…but so we make maybe R50 per shirt. (03-04-2014)*

As Marwick asserts, in this kind of social economy, even small or niche celebrities can leverage their micro-fandom to support their creative enterprises (Marwick 2015, 140). The idea of micro-celebrity is a position that spews forth from a practice known as "self-branding" (Marwick 2010), which calls on users of social media platforms to view themselves as a kind-of consumer product, and then selling this vision to others.

Among the participants interviewed, many are familiar with this genre of township-based fashion micro-enterprises, "***everyone*** *now has a brand*," Kuhle (21) a fashion design student says, "*it's like a kasi brand revolution!*" A quick Google search for "kasi brands" generated dozens of hits for Facebook pages that are created by such small-time fashion brands across the country. Many follow the same made-to-order model as Onwaba and his crew, keeping their overheads low. Some even offer custom designs that might include personally written phrases, or people's names, on their goods. When considering the technical constraints that these young people conduct business in, one can connect these micro professional pursuits to those of the kind that are "invisible" to the mainstream web ecologies (Jenkins, Ito and boyd 2016). Instead of being featured on blogs or websites, these young people make use of interpersonal communication channels such as WhatsApp

chats or BBM to spread their products, where digital goods aren't archived or tagged for broader access.

Local brands such as Mos*,* which today has amassed over 60 000 subscribers on Facebook, gave grown to be an established kasi brand, and follow a similar business model. Mos sell a variety of garments, all branded with their signature red and black logo. The word Mos is a word unique to Afrikaans, but used vernacularly in many South African languages – there is no direct English translation, but its closest equivalent would be "duh!". When used in combination with other words, it implies what has been said before it is well known. This wordplay is the 'hook' of Mos's business – as each item of clothing is customisable and customers can add their own names or phrases to the designs. Young people can directly message the collective, who have hundreds of 'runners' countrywide. These runners take orders directly from buyers, often adding custom lettering to the clothing items such as a phrase or a name, and arrange to meet directly with their clients to exchange money for goods. Today, despite their sizeable client base, Mos still uses chat services, such as Facebook Messenger, BBM and WhatsApp as their primary channels for advertising goods and placing orders. They understand that their supporters and audiences use low-cost social networks on mobile devices as their dominant mode of negotiating business*,* and thus don't foreground other, more exclusive modes of e-commerce which require that the customers have enough data, and more often than not, access to a credit card. The case of Mos reflects what Becker has argued in relation to distribution systems: that creatives will produce and consume "what the distribution system can and will carry" (Becker 1982). In the case of Mos, its founder Bulelani Nkunzi has designed a distribution system that is uniquely suited to the kasi brand consumer. These kinds of distribution system echo the "paranodal" (Mejias 2013) activities of those who operate outside of the network. In this regard, these distributions aren't registered by digital infrastructures, and leave little trace of their existence on broader networks.

The Kasi Squad based their sales model on the Mos example, taking posed selfies wearing shirts on a member's Samsung Galaxy S, which had the best camera among the bunch. Then they used the Image Editor to stylize the image, and another app to overlay text on the image. The text simply read "order Kasi Squad" with a BBM pin code and a telephone number spaced below it. The idea was that friends in their networks could contact them directly, via BBM or WhatsApp, to place an order. These mobile-authored images become

'micro' advertisements that can be circulated on chat messengers, and communicate both the items for sale, and the contact details to interested buyers. In this way, these images could become incorporated in their peers' media patchworks.

Although their reach, digitally at least, was well beyond their immediate neighbourhood (Onwaba mentions sending shirts back to Port Elizabeth with his cousin to sell them there) they found it difficult to actually conduct business with those who weren't in their locale. Dealing in physical goods meant that either Onwaba or one of his friends would have to personally deliver the items to people who ordered their products, adding high transport costs and diminishing their meagre profits. Their physical limitations, along with their inability to access a broader, richer community with more disposable income, meant that the Kasi Squad's business was very slow in growth.

Onwaba considers their foray into fashion a failure, citing their lack of economic capital to launch the business as the main reason. Although this case study provides a compelling example of mobile technology as a marketing tool among young, eager, entrepreneurial creatives; it also re-emphasizes the limitations of mobile technologies to connect young people to lucrative opportunities without additional material and economic resources.

**Mobile media patchworks and kasi creative worlds**

For the majority of the participants, coming from township contexts meant that they had to forge their own paths to creative participation. Reported childhood media consumption strongly reflected the lack of African voices in the South African media-scape, yet many participants were active agents in ascribing their own meanings to these "second-hand" (Nyamnjoh 2005) stories and characters through creative fandom. During formal schooling, visual arts practices were seldom supported, and many students only gained exposure to visual artistic practice or digital creative skills outside of class.

Those who did have access to computers reported increasingly aligning (Wenger 2000) their practices with standards that they saw online so that they could gain legitimacy in a variety of creative worlds. In these cases students would mess around and geek out with technologies. Yet these participations happened in a media ecology that was marked by digital and economic frugality. When compared to Gee's theorization of affinity spaces (Gee 2005), these cases foreground the material and embodied conditions that are required for participation.

I argue that mobile devices here indeed *did* offer a kind of "participatory turn" in providing affordances that were previously not available to young people from such contexts: the ability to take, edit and share photographs, and chat to people who are located elsewhere. Cases included the production of selfies, documentation of art and entrepreneurial branding enterprises. However, owing to high data costs, young people only used services and platforms that were cheap and free. For example, uploading images onto "visual web" (Jain 2015) platforms were generally considered to be too expensive and thus limited the relative visibility of their creative artifacts to interpersonal chat services such as WhatsApp and BBM. Thus instead of participation on Facebook and Instagram, where likes and comments are the capital that drives an online attention economy (Webster 2014), young people were far more likely to "grab" (Senft and Baym 2015) images as digital takeaways and circulate these on a "pavement internet" (Walton 2014) – sans comments, likes or metadata in general. While scholars such as Odom, Zimmerman and Forlizzi have argued that cloud computing is offering an experience of media as "placeless, spaceless and formless" (2014), these creatives combined online access and offline storage of digital goods in a manner that is distinct in place (on a particular phone), space (they cannot be accessed from anywhere) and form (measured in data and mobile tariffs).

Mobile devices have extended creative affordances, yet these affordances on their own did not automatically connect young people to larger "circulations" (Jenkins and Bertozzi 2008) where they could leverage their amateur practices into professional practices. The dominant activities discussed in these case studies, which included selfies and casual photography, did not automatically intersect with, or provide adequate infrastructure for professional career trajectories in photography, graphic design, industrial design or web design.

In turn, while some young people used their devices in creative ways to start up micro-enterprises such as Onwaba's fashion brand, mobile access does not automatically grant access to wider audiences with more economic power. Mobile technologies – including the hardware, software and platforms that constitute these portable and prosthetic technologies – are powerfully shaped by materialities such as network coverage, processing power, airtime, electricity and physical spaces. By contrast, the infrastructure for creative participation privileges a well-resourced user. As Ito proffers, there is evidence here that suggests young people from "less economically privileged households", such as Onwaba

and his crew, are actually approaching creativity and learning "in ways that their middle-class counterparts are not" (Jenkins, Ito and boyd 2016, 72) – offering novel techniques, workarounds and alternative distribution systems. Under severe circumstances, and often, against many odds, young people surveyed in this study found ways to participate in innovative and situated entrepreneurship, new genres of mobile art, and learning by grabbing digital takeaways to negate high data costs. Despite limitations, these aspiring creatives used the materials at hand to forge their own means of participation and distribution in distinct creative social worlds.

The cases discussed in this chapter paint a picture of practices that are more patchworked than networked. From a "nodocentric" (Mejias 2013) perspective, one might argue these practices aren't gaining the coveted cultural and social capital of the network, measured by likes and other recognized metrics. However, perhaps from a different perspective, the value of the 'off-network' image sharing practices lies in their situatedness, and the proximal closeness of the media patchworks. Instead of disappearing when airtime is depleted, or becoming lucrative sources of data by large commercial entities who track these data sources, these images are curated and shared by human connections, not algorithms. They are pocketed into personal mobile storage by recipients, and embody local genres and styles of creativity. Such forms of creativity, display, performance, sharing and distribution are very different to the impersonal and un-locatable universality of content hovering in the cloud – they carry the weight of data in a world where every megabyte is counted. These case studies epitomize how infrastructure and creative worlds are mutually constituted. Mobile devices are infrastructural to creative practices that circulate on low-cost social messengers, and revolve around the relative value of personally collected media patchworks.

In the next chapter, I explore how these creatives experience formal design training in the ECP course, and how the perceived discourse of legitimization in the social world of professional visual design serves to "other" the "paranodal" (Mejias 2013) patchwork creativities explored in this chapter.

*Chapter 5*

# AMASCAMPA: THE INFRASTRUCTURES OF PRACTICE

Design schools, in my personal experience, share a distinctly common atmosphere: the slivers of triplex board that pile up on the floor on hand-in days, signalling the furious last-minute mounting of projects before deadline; the smell of aerosol glue and fixative that wafts down passages; white-walled classrooms hosting scurrying students whose ears are plugged with headphones that mainline music into craniums; heads are bowed over specialized technical desks, where hands meaningfully negotiate problems with a range of physical materials and tools; or attentive faces are staring at screens, with hands flitting over a keyboard, a mouse, a drawing tablet – sometimes maneuvering all at once.

Bezemer and Kress have described *design* as "the process of giving shape to the interests, purposes and intentions of the rhetor in relation to the semiotic resources available for realizing/materializing these purposes as apt material, complex signs" (Bezemer and Kress 2008, 174). In other words, the rhetor – a maker of meaning – with a certain intention, draws from the resources at hand to produce an artifact that communicates this meaning.

In design schools, students are taught how to engage with different stages of this meaning-making process – "defined by their use, materiality and meaning" (Salaam 2014). As a recent graduate of a four-year degree in graphic design, the spaces, smells, equipment, schedules, projects, lecturers, and pressures of design school were familiar territory to me. Learning the ways of embodied *knowing* (Ingold 2013), ways of *being* (Gee 1990) and the ways of the *hand* (Sudnow 1978) as a newly-enrolled design student is a daunting and frightening experience: in order to progress, you have to learn to think and communicate visually, while struggling to match concepts to your capabilities in executing them. You are simultaneously under pressure to develop an internal critical eye – knowledge passed to you by lecturers and older students. Early on, these standards of excellence seem unknowable and mutable. But everyone assures you that, sooner or later, it will 'click': you'll understand the mysteries of aesthetic appeal, locked within the mastery of grids, perfect ratios, layouts, angles, rhythms and typography – a science of cultivated intuition. The case was no different for the kasi creatives I interviewed, who started their extended

curriculum programs in divergent visual arts disciplines – surface design, graphic design, industrial design and fashion design – in 2014.

While the previous chapter showed how young people creatively used the resources at hand to participate in informal creative worlds, this chapter follows the participants into a context where they become apprentices in various disciplines, preparing them in the standard practices that will enable them to participate in established industries.

These ECP courses, similarly to design courses the world over, begin their coursework by developing strong drawing and rendering skills, pulling the focus onto ideation techniques and laying an emphasis on the concept of "scamping" (Arnott 2010). A 'scamp' is a rough sketch, thumbnail or mockup for a design, and is often seen as the manifestation of an iterative process – a means of quickly generating concepts, curating the best ideas and increasingly refining them. During my interview schedule at the Graphic Design exclusive class, a group of students became quite taken with the concept of scamping and were soon creatively appropriating the term as a metaphor for their own journeys in becoming creative practitioners, dubbing themselves "AmaScampa" – the scamps. The students began producing selfies and memes that reified their identities as creatives-in-the-making, turning their apprenticeship phase into cultural artefacts, which communicated the overlap and segmentation of their creative social worlds.

Most projects examined during the ECP course revolve around the analog rendering of designs with, for example, paints and pencils. Computer-based authoring tools such as Photoshop and Illustrator were also gradually added to the mix. Among students, it is accepted that the 'end game' for legitimate design practice demands a mastery of digital authoring software, as well as other materials, tools and techniques. Thus, the teleology of 'becoming' in the context of design school is about the mastery of a range of skills and practices which give shape to the interests, purposes and intentions of the designer (Salaam 2014), but can also be framed through one's increasing capability to navigate a particular range of infrastructure for design, including specialist spaces, communities, software, hardware, applications, platforms and materials.

As Star would argue, the infrastructure for human activity goes beyond the physical stuff of life that the term may first connote. Instead, Star uses infrastructure as a verb, highlighting the fact that the use of infrastructure is "learned as part of membership", that

it "links with conventions of practice" and that it "embodies standards" (Star and Bowker 2006). In the field of visual design, infrastructures that are learned as part of membership includes a particular range of spaces, specialist tools, materials, computer networks, hardware, operating systems, computer programs and interfaces, to name a few. For the purposes of this chapter, I draw attention to the spaces and technologies that frame such participation. These infrastructures link with "conventions of practice" (Star and Bowker 2006) in facilitating visual creativity that is recognized by particular visual design communities and embodies the standards of these social worlds. In design school, these skills and technicalities are formalized. Infrastructural components, which also include courses and curricula, the time periods of classes, the availability of faculty and the accepted standards for participation, support practice. Practices are learned through a wide range of creative briefs[21], where the infrastructural components of such projects are informed by the embodied standards of a broader design industry.

Yet, beyond these established industries, it became clear to me during my interviews that students who, for example, had begun experimenting with increasingly serious design practices before university, would often use the available infrastructure on campus to further their own practices and projects beyond the curriculum as a result of such appropriation. In these cases, kasi brands were reborn; design, photography and videography collectives were formed; and self-branding practices gained new momentum on platforms such as Instagram – where metrics for success, such as likes, follows and shares, were transferable to social, cultural and economic capital outside of the kasi scene.

As Star argues, infrastructure only "becomes visible upon breakdown" (Star and Ruhleder 1996, 113). When even temporarily removed from the spaces and infrastructures where these practices live on campus, a small number of young people interviewed for this study noted that when off-campus they felt severed from their skills – much like musicians would struggle to play without their instruments.

The case studies presented in this chapter serve to illustrate how practices connect aspiring designers to formal design industries. They also reveal the ways in which practices that are socially valued among peer groups are mutually constituted with embodied

[21] A creative brief is a document that contains an overview of, and guides the development of, a design project. Such a document might include the aims of the project, its scope, intended audience, and other criteria the project should meet.

infrastructure. In other words, the process by which young designers attain legitimacy in divergent creative communities is powerfully shaped by access to the right tools, spaces, networks and ways of creating that are recognized and valued within those social worlds.

**Becoming designers: an infrastructure perspective**

As the kasi creatives entered two Visual Design ECPs, they entered institutions that aimed to produce ideal candidates for vocational design positions in professional design industries, determined by design disciplines – which in this study included the fields of graphic design, fashion design, industrial design and surface design. These disciplines would comfortably sit within Becker's definition of "art worlds" (Becker 1982), they are part of a particular history of practice, and are learned about in formal communities of practice (Lave and Wenger 1991), where students form identities as designers through legitimate peripheral participation.

Stuart Mealing argues in "Becoming Designers: Education and Influence" that the ideal design graduate is "a Frankenstein wunderkind built to conceive, create, devise, discover, draft, draw, fabricate, figure, formulate, hatch, invent, mastermind, meditate, model, originate, plot, scheme, style and weave. In short, to design" (Dudley and Mealing 2000, 8). It is thus the work of the educational institution to facilitate the task of 'building' such a mastermind. Throughout my observation period at both of the ECP classes I noted that the typical workflow of a design project's lifespan included students analysing the brief provided by the facilitator, identifying the key requirements, doing research, generating ideas, developing these ideas further and then rendering the final designs. Throughout this process, students are taught new techniques and tools by lecturers and are given frequent feedback and critiques. Thus, in tandem with institutional conventions, ideologies, rules and policies, technologies for creativity are shaped in practice, and in turn, constitute the infrastructures *of* design practice (DeVoss, Cushman and Grabill 2005).

For many of the kasi creatives, the university offered an extension of such creative infrastructure beyond what these young people could access before (Figure 1): Students now found themselves in studio spaces, which were equipped with special desks, cutting mats, craft knives, rulers, and so forth. These "technologies of practice" (Wenger 1998) are imbued with the history and the cultural heritage of particular artistic practices (Becker 1982).

They were trained to use design tools that range from fast processing computers, DSLR cameras, sewing machines, video cameras, photographic studios with professional lights, and editing suites, to name just some of the technical equipment on campus.

In addition, they gained access to a specialized community of practice, where senior designers such as lecturers and more advanced peers set the curriculum and the standards for participation. Finally, as many participants pointed out in interviews, this was the first time for many that high mobile network data costs were not a concern, and they could suddenly surf the web to their hearts' desire. Students reported that their own use of online social networks and platforms increased dramatically in this time – and most reported frequent engagement with the visual web by increasingly participating on social networking sites and platforms such as Facebook, Instagram, Behance, Pinterest, Vimeo, YouTube and Tumblr – sites that were previously hidden from them behind a high wall of data costs.


Figure 1: The creative infrastructure of kasi creatives outside and inside University

While formal training for students in both of these courses was initially based around analog modes of design, such projects nonetheless required students to conduct visual research, or find resources online.

As Neo (22) explained:

> *We need references for our projects, so maybe we are given a story board or brief for the whole week project and then we need to reference on the internet, to get references on the story board. Then to download those images and see and make yourself a reference… (14-08-2014)*

While students were given classes in using computers, some, such as Phumla (22), noted that using computers was not as straightforward for many of her classmates who didn't have computer training prior to university:

> *I notice now with the children that didn't have the computer background knowledge, they struggle a lot, they struggle. Even like the basic computer skills…because once you struggle with that, with the Photoshop, how you going to be ale to handle those other tools? It's a bit too much to take in if you're a starter. (06-06-2014)*

For students such as Olwethu (20), it initially felt like the computer had a mind of its own:

> *The thing is, these programs…they're irritating me, honestly…serious! The thing is you're using a computer and it's controlling itself, you don't really… I'm controlling it right? But sometimes you'll find it's controlling itself, it's not doing what I'm doing, which is what drives me crazy (15-08-2014).*

Olwethu's feeling of disconnectedness from the machinery demonstrates what Tim Ingold (Ingold 2013) would describe as embodied knowledges. One knows through experience and practice, one's hands know the ways of the materials, the placement of the buttons, the feel of the movements through practice. For Phumla, who had predominantly used mobile devices as her "habitual setting" for creative practice (McCullough 1998), commanding a mouse was a strange new sensation, a feeling of not being able to fully control the machines around her.

When talking to Simthandile (22) about his experiences of learning design, he acceded that

> *if you don't know nothing about design, I will say it's difficult for you to understand design because I've only explored the design world when I was still studying here. (04-09-2014)*

His description demonstrates what he understands to be a structured 'field' as Bourdieu would argue (Bourdieu 1977) – "the design world" – a world that he "only explored" at the university. In other words, his exposure to the field was limited, and thus he felt that his social and cultural capital within the field were too.

Menzi (20), during one of our earlier interviews reported that he felt the nucleus of a university education comes down to an acquisition of terminology, "It's mostly the words…you find in everyday design things" (07-07-2014). In other words, without an understanding of the most common words used in professional design practice, you wouldn't be able to speak the *language* of design. In turn, one begins to understand such a language of terminology based on experience and practice. Menzi mentioned an example related to his then-recent deep-dive into design tutorials on YouTube from the university computers,

> *If you're gonna search Photoshop (tutorials) you need to know about the brushes, and the cutting tools, and all that. If you just know Photoshop, you can't do too much with it (07-07-2014).*

Thus, learning to become a designer starts with the ability to articulate that which one is aiming to learn – a familiarity with the *discourse* of design. While his early experiences with Photoshop before university were indeed guided by raw intuition and "messing around" (Ito, et al. 2009) with the interface, Menzi had, during this time, begun watching tutorials to help him develop his capabilities with the software. Understanding which keywords and terms to search for had significantly refined his informal learning practices. In this way, language also became infrastructural to practice. In addition, the design theory classes that they attended multiple times a week had given him new insights into his creative process:

> *When you learn about things like composition…that helps. You see it starts in your mind, but you can't really put it down…You don't know* ***what*** *to use to make* ***what*** *(07-07-2014).*

In order to develop the right habitus, or "'feel for the game" (Velikovsky 2016) of professional design industries, students must learn 'the words' and '*what* to use to make *what*' – they must internalize the 'doxa' of industry standardized visual design practice, that which is taken for granted. Learning the right words and coming to grips with these accepted norms, however, firmly revolve around a particular repertoire of instruments and practices.

Henry found that Facebook was a particularly good place to start in familiarizing himself with the social worlds of design, simply searching for the words "design", "graphic design" and "art" delivered a number of Facebook pages that Henry (22) now follows and regularly checks up on:

> *Facebook has a lot of pages about design […] I follow a lot of design things like architectural pages, magazine designs…all those kinds of things, cause I want to expose myself to all sorts of design things, cause we need to keep up with the times. […] We are going into new ways of making things, so the Internet helps me to learn the new skills that are part of the new ways to be a designers…like YouTube tutorials and all that. (14-10-2014)*

Henry's strategy of "keeping up with the times" demonstrated what he perceived to be a dynamic field, and while the university at this point designed projects around analog modes of design – with paper, paints, and so forth – Henry wanted to "keep up" and learn new skills from "YouTube tutorials and all that". Such a desire stemmed from the fact that Henry understood visual design to be a constantly evolving field, with new technologies, trends and continually evolving cultures.

**'Life without a Brief is Just a Scamp'**

A week into my interview schedule at The Graphic Design class (from my field notes, 04-08-2014), I observed students researching their latest project at the computer clusters. The vast majority of screens were dotted with the distinctive blue banner and iconic F logo – Facebook. Most students were taking the opportunity between lectures to check up on their correspondence, post a picture, or browse. Some of the more diligent students were using Google Images and taking notes. Neo (22) was among those furiously scribbling in their notebooks. When I asked him what he was doing he shyly replied: "Scampin".

Menzi (20) jumped in on the conversation and asked me, "Nanna do you know about scamping? Today we learned about scamping for the first time. Now Siyaba Scampa[22]!" The guys broke into an improvised song, and later that day Menzi showed me an image that he created on his phone of him and Neo dancing down the corridor, "Menzi vs. Neo" it read across the top, and at the bottom "#SiyabaScampa!"

Among a group of kasi creatives in the Graphic Design exclusive class, the concept of the scamp had grown into a contagious class in-joke where, for example, a student whose work received a low grade would rebut, "It was still just a scamp!" to their jeering classmates. Soon after, *scamp*, *amascampa* and *siyaba scampa* morphed into fully-fledged memes shared among students.

A "meme" is a "loosely applied biological metaphor, appropriated from the various attempts to develop a science of cultural transmission" (Burgess 2008), which was first theorized in Dawkins' The Selfish Gene (1976). More recent conceptualizations describe memes as either transmissions or ritual models of communication. The second looks at memes as a construction and representation of shared beliefs that stress notions of identity, meaning and belonging (Shifman 2015). Here, the cultural transmission of the concept of a 'scamp' as a person or thing that is 'in progress' became crystallized for this group in a variety of creative ways – from images, videos, sayings, dances, hand signs, and so on. Members of the class here have congealed their experiences into "thingness" (Wenger 1998, 58) – reifying their identities as creatives-in-the-making.

Kuhle, for example, produced a photo of her in front of her grandmother's home in Gugulethu, with a header that reads "#scamp". She explained the image as an aspirational one: "*one day I will live in a nice house, and have a nice car, and then I will look back at this moment, and it's like the scamp of that life*" (21-08-2014). Neo, waxing philosophically about the concept of the scamp, showed me an image he had created to advertise his design services that reads: "life without a brief is just a scamp". He explained that the ad would encourage clients to give him these briefs, but also that without the purpose creative work gives him, he would never "*get to that key…the final design of my life…which is my future*" (21-08-2014). The scamp meme becomes a "mediating mechanism" (Burgess 2008, 2) that includes students in a classroom culture where scamp is constantly re-used, re-worked and re-

[22] We are scampers!

distributed – extending its meaning to further applications. Among the kasi creatives enrolled together in the graphic design class, the significance of the scamp as a way of framing their apprenticeship phase denotes purpose and empowerment: a scamp can never be a failure, only a step closer to a final version.

Asking students about their plans for the future delivered a variety of responses: for most, the end-goal was described as a job in their chosen profession. Many students mentioned working for agencies, brands, or firms. For some of these students, goals expressed during the fieldwork period were particularly framed through the personal acquisition of wealth and the related move away from the kasi. Bongz's (22) goals included,

> *By 24 I have to have a car, by 25 I have to have a house in the suburbs and so I also feel like it's my responsibility to make sure I achieve those goals, and I just want to be successful and just be a designer and inspire people. (02-09-2014).*

Kuhle (19) considered her future "*In a big house*" as her biggest motivation for success, acceding that her desires to start a family will have to wait,

> *Because like becoming successful being a woman is already hard and having a family on top of it is going to be even crazier. So I first want to get my name for myself, become successful and then see where I go from there (15-10-2014).*

But, for about a third of the students, visions of the future revolve around bringing change to their communities and neighbourhoods, Neo (, 20) explains:

> *My future goal is to become an owner of a huge company of art and design, you know having an academy where children are taught art because I believe in talent a lot. I know there is an upcoming Neo that will be like me, maybe he won't have anything…he won't maybe go to school, but he will have a talent. So I would, like, maybe to have a platform where I will be in front of many people telling my story. (14-08-2014)*

Neo's future plans include 'paying it forward' and becoming the mentor in the community that he sought as a young person who didn't "have anything". Through his accomplishments, he sees his future self-inspiring others to take up visual arts and design. Menzi (20) also mentions his desires to start an agency in his community, and include

younger designers in his business, "*I can help people with portfolios or skills*". But he predominantly wants to change how people from Nyanga view visual design:

> *I think design, like digital or even graffiti, all of that, it's very important. It gives people the ability to express themselves. Allowing people to take part in society and not just watch the rest of the world go by (11-12-2014).*

For Menzi, the problem of his community not participating, and only "watching the world go by" can be remedied by self-expression and creativity. Henry (20) also describes feeling that "*it is up to us as young designers to seize the opportunity so that people can know that our hood can do better things*". Henry's description foregrounds a wish to counter negative discourses about 'the hood' – as a place marked by gangsterism, poverty and crime. Henry sees the role of advertising as a powerful vehicle for representation, and in the future, he wants to

> *make advertisements that deals with the community, that tells a story and sends a message about the gangs. Stories that really touches people's hearts. I think you can use advertising to really change people's lives (14-10-2014).*

Personal experiences of university expressed during these interviews were conflicting and complex – on the one hand, students described feeling exceptional for being at university, gratitude at having the means to carve their own paths and optimism for their futures; on the other hand, kasi creatives' descriptions of their university experience frequently included feelings of fear and uncertainty, most prominently, many students described shame at not having the necessary economic capital to always buy materials for their projects.

**Obstacles: materials for participation**

As we've previously argued in this chapter, becoming designers is largely about gaining the ability to navigate a particular range of infrastructure, including materials, technologies, and tools. Beyond this pressure of navigation, during interviews, kasi creatives frequently described feeling uneasy when it came to the materials that were necessary for participation in the courses.

One afternoon in June (Field notes, 11-06-2014), shortly before the mid-year break, the mixed-discipline class began a two-week course in jewellery design. After a hefty hour-

and-a-half lecture on what they could expect to produce, her rules for participation, and an active re-shuffling of desks to better represent "a jewellery studio", the lecturer mentioned, as a last point, that students would have to leave a R200 deposit to be able to use their jewellery kits. These kits contained all of the necessary saws, clamps, files, tweezers, et cetera that students would need to produce their last project for the semester. This announcement concluded the lesson and most of the students began shuffling out of the classroom. Lunga (21), after an intensely unhappy exchange with his desk-mates in isiXhosa, put up his hand and asked "*Can we pay it later?"* (11-06-2014)

The lecturer, while packing up, responded that unfortunately policy dictated that they could only take out the kits once the deposit had been paid. Lunga solemnly nodded. With Qondile (22) and Bongz (22) in tow, they exited the class – visibly unhappy. I caught up with them outside, and asked whether they were upset about needing to put down a deposit. Bongz explained that he was feeling powerless, "*I can't get it – who must I ask for so much money? There's nobody who I can ask.*" (11-06-2014)

Qondile added that this wasn't the first time they were blind-sided by material costs:

> *You always have to have money, because you never know what you're going to need because in each and every project we always have to use money. So sometimes I do struggle because sometimes at home they give you enough money to get food, but then when you get there you end up not eating, only using the money for tools. (informal interview, 11-06-2014)*

The majority of kasi creatives interviewed mentioned material costs as a source of concern. Lunga (20) described his inability to afford materials as unjust:

> *If let's say, they tell us to design a vessel for this laptop, so the material that Anja and I use, let's say Anja uses material worth R2000 and I use R500, surely there will be a difference, in the percentage mark that we get… (03-07-2014)*

This instance wasn't the first time that Lunga struggled to afford materials. During our interview a few weeks later, he had described going into debt in order to print an assignment:

> *For instance, there was a time when we were doing work for a workstation, and I didn't have*

> *any money at all. But luckily on my student card, I had credits and I needed to print. I had designed a wall and a floor, and I had to print those things. I had about R5 credit left and I had to print in colour, which is really expensive. But luckily, you can print and get debt on your card. So I did that, I printed with debt. Someone else with money doesn't have to do that. (03-07-2014)*

Olwethu (19), during her interview, also described the material costs as a source of trouble for many of her classmates,

> *It's irritating but it's something that we want to do, we can't – maybe we would fail since we can't afford to do A,B,C and D (…) that's the irritating part because it's something that you want and ya… some people like my classmates say that at home they don't want them to continue with this because of this money that you have to spend, it's irritating. (15-08-2014)*

Aadil (20) also noted in this interview that one of his main sources of concern in the course was that the tools required were too expensive, "*you spend a lot every week*," he said, "*You spend on assignments on projects so sometimes it does get a little hard. It does get a little hard to afford fees or money to buy tools*" (interview, 14-10-2014). And at times Aadil feels that his visions aren't entirely realized, as he doesn't have access to the right tools:

> *Many a times things get passed on at a short notice so you're not really prepared for it, you just have to do something about it in order to pass or proceed (14-10-2014).*

Henry (22), during our interview, also listed the "last minute" material requirements as one of his main grievances:

> *Because sometimes we hear stuff like the last minute, and you need to get it like now. So they always tell us 'just make a plan'! It's hard getting some of the equipment, so like the thing they want you need it now – so you have to loan, or borrow from classmates. So classmates borrow a lot from each other. But people also get angry, cause you realize that they paid for something, and you didn't, so I understand it. But it's difficult. (14-10-2014)*

While students are required to buy a design kit at the start of the year which contains a large portion of the materials that are used for projects, Simthandile (22) found that he had to buy a great deal of additional materials to participate in coursework:

> *Now as time goes we see that most of the stuff on that kit is not usable enough. We need to buy, every day we need to buy new stuff: mounting boards – everything. So we thought at first that we need to buy that stuff and we can use it for the whole year but the actual course is costing us (04-09-2014)*

While lecturers ask that students come to see them personally if they are having difficulties with materials, only a handful of students take up these offers – preferring to exhaust other options first. As Posel argues, under apartheid race was partially constituted through the regulation of consumption practices (Posel 2010). Thus, an emerging post-apartheid political discourse has tied self-determination and emancipation of previously oppressed groups to their consumption of material goods. For this reason there can be great stigmatization and self-shaming tied to an inability to consume and participate. Qondile's (22) sentiments echoed such claims,

> *Not anybody wants to be the poor student. You come here (to university) and you know that you are different because…eish, you're not like those people who have all of the money…but you don't want people to be, like, I don't know…to feel that you're different. (06-05-2014)*

Difficulties in affording tools and materials became a distinct theme among kasi students interviewed, while such concerns did not register with their better-resourced classmates during interviews. Issues of inequity in classroom participation have underpinned social action in movements such as #FeesMustFall. While students from privileged backgrounds "feel very much at home, don't see or feel any problems, and generally blossom" (Badat 2016, 10), these very same environments can cause affront to the dignity of especially students of colour from working class contexts. Feelings of shame at not having the appropriate resources to participate like everyone else in the class has been cited as "generating bitterness" leading to "anger, pain, hurt, worries, and anxieties" for these students (Badat 2016).

On one day in April, I arrived at the graphic design exclusive class and sidled up to Menzi and Onwaba's desk. It was a Friday, and their 1pm deadline for hand-in was looming (field notes, 14 April 2014). While Onwaba and his fellow classmates had an air of relaxed relief – their projects nearly done – Menzi was in a mortal panic, nervously hunched over his desk. He had to start his drawing from scratch, on account that the first version, which he

had completed the previous night, had been squashed and dirtied in the crowded taxi he took that morning to class. Menzi had, at this point, not yet been able to purchase the portfolio sleeve in which most students carried their work. This particular drawing, at A2 in size, was too large to be protected in his flip-file.

Pumla (22) noted that she also had the same issues, where transporting work on the train had been difficult, "*there are too many people, and they squeeze. So, work gets damaged.*"

Neo (21), who also only received his placement in res later that year, shared her sentiment:

> *It was difficult when I was travelling from Khayelitsha to school, and I was using a train and I would carry that huge bag for graphic design. Some people can just squash it up and then it damaged my work.*

Work that students were required to produce for these courses also necessitated a space that was optimized for such embodied labour – where students could draw, paint or build. And as such, home was frequently described as a less-than-ideal space for such work. Kuhle (21), who was able to gain access to a university residence place after being on the waiting list for several months, described great relief at her placement,

> *Now I can work later on my stuff, without my little brother coming and spitting or tearing my work. I also feel much safer now that I don't have to take the late buses home.*

Simthandile (22) also found that sharing a small house with his large family made the space unsuitable for working on his design projects:

> *It's hard to work there because of the family making noise and watching TV, all of that and my little brother is very naughty. He can come up to my things and mess them up, so it's hard for me to work at home, it's better for me to work here than working at home.*

For Aadil (20), the most difficult thing about being enrolled in this course was related to his commute from Manenberg:

> *The travelling takes a lot of time away from your family, sometimes your health because all you do is travel, you get home you work, you even forget to eat. So it kind of has an impact on your health too and maybe you oversleep, wake up, you won't eat breakfast, you don't get*

*anything in the morning you just rush to campus.*

His travelling time amounted to two hours a day, switching from a bus to a mini-bus taxi. Henry (22), who travels from Elsies River, also found the commute to be one of the most stressful aspects about his enrolment in the course.

*In the morning it's safer. I take the taxi cause I can't walk to the train station. I need to walk through a lot of areas that have gangsters. There's like factories there, so there are lots of people just hanging around looking for an opportunity.*

For Henry, another difficulty was tied to the notion that he was old enough to begin earning money to contribute to his family.

*Due to certain circumstances, like my mom got married – and they are both sick and cannot work. So then I was living with my granny, who also doesn't work. So to make the decision to come and study makes it difficult, cause now you think of your grandmother, you're 18…you're old enough to go work, you can contribute, you can make money.*

Yet his family encouraged him to attend to his studies instead of getting a job.

*Even so, it is very difficult, cause you see people are having a hard time. And now you also have a hard time to keep up and buy things. But you have to better your future. Cause in bettering my future, you can help them too.*

This idea of bettering his future was an idea that was shared by many of the kasi creatives. In interviews, participants often described their aspirations in terms of helping their families, of telling unheard stories, or of transforming the design landscape. Thus, as students gained confidence in their design skills, many had, throughout the year, begun their own creative enterprises, particularly those who had previously attempted to monetize their talents.

**Kasi brands: the reboot**

Students such as Neo, Menzi, Kuhle, and Onwaba hustled to establish themselves as creatives and earn money. Working in this way while at university, but independently from their required projects, was an increasingly central motivation for their extra-curricular creative practices. While they spent a great deal of time on their university projects, they

continued the process of crafting their own creative brands after hours – making the most of the infrastructural resources provided by the university.

Neo, who had learned how to draw from YouTube videos, began his own YouTube channel by the end of his ECP year, posting videos of his own process in drawing, and sharing these to other social media channels – including Facebook, Twitter and Instagram. Neo started by booking out departmental cameras and using the equipment to film weddings, graduations and other community happenings – charging family and friends for his services. By the end of his first year, Neo had saved enough money from this "side-hustle" (01-03-2016) to buy his own DSLR camera. With this new equipment, Neo and Menzi decided to start their own business, and created a Facebook group to advertise their services as photographers and videographers – recently landing them a "regular gig at a comedy club in the city" (Menzi, 01-03-2016). Neo's active online presence as an artist had also resulted in a number of publicity opportunities – he was frequently featured on the student radio station, appeared in local newspapers multiple times, and attended 'networking' events for entrepreneurs. He continued creating advertisements for commissions – but now produced these on Photoshop. Over the past three years of his enrolment in the course, he has re-invented his brand multiple times, recently creating professionally printed business cards, a stand-up banner for events, and a variety of branded goods such as t-shirts and caps.

Kuhle became increasingly invested in her "selfie game" (01-03-2016) – and created an Instagram page during her ECP year where she shared her daily outfits, posting these images under hashtags such as "kasistyle" so that other users of the platform could search for these particular terms. Since 2014, she has gained a significant following, sharing her fashion and make-up tips to over 2000 followers. Kuhle enjoys connecting to brands and photographers on the platform, "and other people who understand this dream that I'm dreaming" (01-03-2016) and has since transformed these likes into social capital: using her connections with some of Cape Town's foremost fashion designers and photographers, to crack an invite to Cape Town's esteemed Fashion Week in 2016, and the Menswear fashion week in 2017.

By the end of the ECP year in 2014, Onwaba had also re-branded his clothing label, creating a collective with students on the same campus who studied branding at the

university. He started a new Facebook page, and invited a few of his "good-looking" (01-03-2016) classmates to model his garments on campus. His brand, instead of focusing on the experiences of young people who are based in the townships, had increasingly begun to revolve around the aspirations of young black students. Fittingly, the aesthetic feel of his designs evolved to be more "preppy" (interview, 01-03-2016), with smiling faces on lush green campus lawns replacing the moody, dark "kasi swagger" (01-03-2016) of the Kasi Squad. Notably, Onwaba's rebrand took place during the thick of the student protests. As the media was painting young black students from poor backgrounds as undisciplined rioters and hooligans, Onwaba's representation constructed a very different narrative: of belonging, of owning the space.

**Beyond the University gates**

After hours, students such as Onwaba, Kuhle, Menzi and Neo relied on university resources to create or extend their personal brands and projects. Unlimited online access, technical equipment, and extensive human resources are available within the spaces and places of the university. Yet this infrastructure is seldom available to kasi creatives outside of the university gates. During interviews students often mentioned anxiety at being severed from the instruments of their practice during school breaks, or once graduated. Olwethu (20), for example, expressed a fear that, post-graduation, she would be isolated from design communities and from the valuable social capital that she had accrued during her study: *"(with design) it's a lot about who you know, and who can help you to get where you want to be*".

In March of 2014, I met Menzi on the grass patch adjacent to their building. We walked to a quiet spot under a tree and sat with our backs against the bark, chatting about his experiences at the university thus far. While most of our conversations revolved around his new friends, which lecturers he liked most, his enthusiasm for their upcoming photography course, and excitement at meeting a first-year student "from (his) hood" (11-03-2014), Menzi concluded our meeting by relating a story from his then most recent late night work session in the computer centre. While he was working on putting together a mood-board for a project, a young man named Xola[23] asked for his assistance: "*he said…'can I have your logins', 'cause he had already graduated and his student number won't work*

[23] Name anonymized

*anymore*" (Menzi, interview, 11-03-2014). Xola related to Menzi that he was planning to apply for a job at a Cape Town-based printing house, but that the portfolio of work he had prepared during his final year studying graphic design had gone missing on an errant flash drive somewhere. Without this little piece of hardware, he had effectively lost the 'proof' of his skills as a designer, and couldn't apply for the position, "*These guys told him he must send them a portfolio, but he didn't even have any software, any computer, any place where he could make the portfolio*" (11-03-2014). Menzi gave Xola his login credentials, and with Xola sneaking into the university over a few evenings, they sat next to each other in the computer lab. By gaining a literal passcode to access the computers, infrastructure that Menzi had access to by virtue of his enrolment as a student, Xola was able to piece his portfolio together again. Menzi describes that he saw Xola *"(finding) some old work on e-mails, and (he) had a hard-drive with some work, so he put it together in InDesign in a PDF*". Menzi was impressed with how quickly the older peer could assemble his portfolio, and described feeling "*very happy for him that he could send the file on email to the boss of that company*". A few weeks down the line Menzi told me that Xola had landed the job. Menzi was even happier about the fact that Xola promised Menzi that he could "*come and do an internship over (his) holidays at some time*" (11-03-2014).

A few months later, over his December break, Menzi experienced the same situation as Xola when the pirated Photoshop package he had installed on his computer became corrupted and crashed the operating system of his machine. This misfortune forced Menzi to effectively give up on his practice over the holidays. He was especially sad about this, as just before he had to leave his residence room for the break, he had taken great care to prepare himself for the break, "*I downloaded some of Roberto Blake's tutorials onto my computer so that I could look at them at home, when I don't have internet…but now it doesn't even help because I need Photoshop if I want to do this stuff*" (11-12-2014). At this point Menzi had planned to start small design jobs in his community, but without the means to obtain the right software packages and with a busted computer, he had given up on monetizing his skills over his break.

At a meeting in 2015 Menzi explained to me that he had begun strategizing how he would set up a design studio at his home: over a number of months he had started collecting timber to build a work desk and install shelves on the wall. During our meeting, he showed me notes he had jotted down in his sketchbook on what he needed to get done before he

graduated – 1.) build a proper working desk; 2.) rebuild his computer that crashed and get the Adobe Creative Suite installed; 3.) get a scanner; 4.) get a new lens for the camera his uncle gave him; and lastly, 5.) get a lightbox. These were the first steps he identified in setting up a space where he could comfortably design and work. His visions for the work he would do in this space included making money by selling graphic t-shirts of his own design, becoming a videographer around his neighbourhood for events, starting up his own weekly house and hip-hop music event, and selling his services as a nightlife photographer. Across all of these imagined activities, he articulated his goals at the time as "*bring(ing) city life to the kasi.*" Menzi identified his potential in contributing to the changing landscape of his neighbourhood in the townships: "*there's an idea…people think it's just poor-poor-poor. But in the kasi people are hustling. There's DJ's at the shebeen now. Cool Fashion. Ya….there's* ***life***." These plans for building a space to accommodate his practice after he graduation was described as, simultaneously, an aspiration to better his surroundings, but also a way to ward off anxieties about what awaited him on the other end of his degree. During our interview he explained to me, "*It's very difficult there where I am from. If I want to make it in this industry, it's important to have access to these things. Otherwise, you are left where you were before you even studied.*" This fear that, when severed from his tools, he would be "*back where (he was)*" before his university education demonstrates the critical role of a particular range of infrastructure – which includes tools, hardware, software, platforms, spaces and networks – that shape and are shaped by visual design practice.

### *AmaScampa*

The case studies presented in this chapter have served to demonstrate that visual design practice taught within the university context relied on a particular range of infrastructural components – from networks, materials, and technical equipment; to language and other forms of embodied capital. Becoming legitimized as a visual designer and gaining institutional cultural capital (Bourdieu 1986) involved becoming assimilated into a particular way of knowing, being and designing. For many of the kasi creatives this process of becoming involved undertaking a great transformation and, in turn, lead to tensions and stress.

On campus students gained access to a media ecology that was configured in a way that would be most generative for a particular range of formal visual design practices. Yet students who were not exposed to many of these technologies and materials before

coming to university struggled to adjust to their new habitual settings for practice. Additionally, students often couldn't afford the economic and material resources required for class projects, which lead to expressions of frustration and shame. Congealing these experiences of insecurity into "thingness" (Wenger 1998) the graphic design exclusive class, for example, formed a sub-world (Strauss 1982) around producing humorous memes which provided an expressive locus for their shared experiences. The AmaScampa memes, which were distributed on low cost mobile chat services, became culturally coded signs that reflected the distinct tastes, styles and humour of this particular group of young people.

In this setting, students also relied on acquiring social and cultural capital (Bourdieu 1986) online to help ease their transition. Joining online communities of practice on Facebook, YouTube and Instagram offered such capitals and contributed to these students developing and asserting their identities as designers.

A number of students who had already established personal creative projects outside of class used newly available hardware, software, platforms and media for their own creative practices. Students could now monetize their services and creations (through, for example, professional photography and videography), gain the social and cultural capital of the "attention economy" (Webster 2014), project their voice (Burgess 2006) in broader circulations (Jenkins and Bertozzi 2008) and become visible to potential clients. Thus, through the university infrastructure these young people's practices were much closer aligned to industry standards – kasi creatives were able to learn in affinity spaces, do it for themselves, and produced digital artefacts that could be monetized in established industries. Yet all of these practices were firmly tied to a specific configuration of resources that the university provided.

When students were located off-campus, where they wouldn't be able to access this media ecology, they were not able to produce these creative artefacts, or connect with the same communities. In this way, kasi creatives found their worlds split in two – on one hand there were the places where they could access the correct infrastructure to be designers, and on the other, places where they were severed from the tools they needed to be designers. In this way their creative practices were legitimized through particular infrastructures. The accepted standards of participation in the professional discourse of

design "othered" the "paranodal" (Mejias 2013) patchwork creativities explored in the previous chapter.

While many of the participants of this research were no longer on the losing end of a digital divide, their access to digital technologies such as mobile devices off campus were not adequate to infrastructure their practices as formally trained designers. Here the intersections of amateurs and professionals (Leadbeater and Miller 2004), learning on the web (Gee 2005), accessing generative creative systems (Zittrain 2006), and producing, storing and distributing digital goods (Odom, Zimmerman and Forlizzi 2014) that have economic capital (Bourdieu 1986) are part and parcel of an intricate and particular configuration of resources which infrastructure particular practices. Yet, for many kasi creatives there is an enduring distance between the media ecologies that are available to them off campus, and those that are available to them on campus.

*Chapter 6*

# JAMMING: AN EXPLORATION OF VOICE AND MOBILE MATERIALITIES

> *"The black person is the protagonist in most of my paintings. I realized that I didn't see many paintings with black people in them."*
>
> Jean-Michel Basquiat

During interviews I asked participants to imagine something: If they could conjure any technology for their phones – an application, modification or gadget – anything that would make having a computer obsolete, what would that technology be? By far the most common answer that students ventured was simply: "*Photoshop for my phone*". Students imagine that if they could have the capabilities of Photoshop on their phones, they would be able to produce designs that were in line with professional industries, and thus would have no need for computer-based design tools. I trawled through online reviews of visual design applications that were available for smart mobile devices on the Google Play Store. This search delivered scores of applications that claimed to hold this very position: promising to demystify graphic design, photography or compositing, and offering amateurs the ability to produce work indistinguishable from those of professional designers. In addition, Adobe had already designed a mobile version of Photoshop!

This discourse is familiar: as argued in Chapter 1, it is the crux of the creative consensus claiming that Web 2.0 technologies are democratizing the means of production. However, as explored in the previous two chapters, there is an enduring distance between the infrastructures required for participation in formal design industries and those available to young people who are only armed with their phones. This tension between what young people had told me, what I had observed, and what popular consensus on the web was claiming confused my findings. If young people already had the equivalent of Photoshop for their phones, why could they not produce professional designs off campus? In order to explore this tension, as explicated in Chapter 3, I wanted to experience this creative process with participants, and hosted an improvisational creative jam.

Through jamming together on a creative project, I hone in on the imagined affordances (Nagy and Neff 2015, Gibson 1986, Shaw 2017) of mobile ecologies to facilitate visual design processes. I draw relations between the intentions and semiotic goals of a select group of kasi creatives, generated during this creative jam experiment, and how mobile devices and laptops, respectively, offered them tools and materials to realize these concepts. Comparing the affordances of free mobile applications to those of proprietary software such as Adobe's Photoshop, as I have done in this chapter, might seem like a fool's errand – the latter, owing to its long history of development, and cultural history as a tool for professional industries (Bardzell 2007) would of be course superior for the purposes of visual design. In addition, laptops, owing to their size, can accommodate more processing power, and have large screens that are far better suited for the practice of design. Yet, spelling out these tensions and disparities offers a useful case study tease out the affordances of these different systems.

This chapter explores the various ways in which mobile ecologies are scripted to support visual creativity. I use the creative jam method set out in chapter 4 to follow participants' creative process from the establishment of design goals, ideation, and conceptualization, to design processes, implementation and the export of the final artefacts on both mobile and laptop systems, while asking: how do these different media structures encourage creatives to work, and how do they frame the work that creatives do?

I found that the jammers were interested in producing a very specific range of material artefacts, which connect to local social worlds that revolve around a subculture of kasi streetwear. To achieve this goal, they wanted to appropriate and remix meaningful consumer symbols, tap into a rich visual history of township street culture and claim their own positionality and experiences as young creatives.

The free mobile ecology we experimented with was poorly suited to support this mode of creativity. The political economy of application development favours an innovation-centric ecology of use, where planned obsolescence (Bulow 1986) – the designed 'shelf-life' of a product before it has to be replaced with a newer version – leaves slightly older devices incompatible with the latest applications. In turn, the affordances that mobile technologies offered in this situation - which included modularity and remixability – while foregrounding convenience of use, couldn't give shape to the initial semiotic goals of the

jammers. These applications provided vast libraries of graphic elements, but all of them reflected hegemonic visual tastes – derived from trendy global aesthetics. Here, the commercial interests of developers, who aim to make money from a freemium model (where the free version of the application has limited functionality, and for additional costs, users can purchase extended features) were in direct opposition to the interests of the jammers, who wanted to be able to create, and print, original generative designs for their own enterprising uses.

This chapter also makes an argument for creative jamming as a novel research method which foregrounds the experiential, material and symbolic processes of visual design from inception to completion. Working in this way opens up creative practice as a reflective exercise in collaborative inquiry, where diverse knowledges are shared, and participants gain insights into the research project at hand. Jamming is also reciprocal in that participants are given the space and resources to further their own creative practice, and learn from more seasoned creatives. Jamming together also tightened my bonds with participants, densifying the ethnographic research that forms the data of this research, and building trust between us. And lastly, jamming together provided the foundation for us to consider how technologies could be designed differently to better support creative goals, generating a number of paper prototypes for consideration by developers of technology.

**Ideation, Concept Generation and Project Goals**

During the conceptualisation phase of the jam, the jammers took photos of images they saw in magazines, and saved pictures from online sources onto their phone libraries. Every now and again, they made notes and sketched from references in their notebooks. This practice of ideation and concept generation in which the participants engaged required the support of a variety of infrastructure – they relied on saved images, written down phrases, and sources to scour for content. Resources such as data, electricity, access to the web, flows of visual media, devices to search from, digital storage, drawing pads, notebooks, pens, and so forth, were the integral 'stuff' which jammers remixed and moulded to produce rough sketches, scamps and notes that concretized their ideas. If, as James Webb Young has famously asserted, "an idea is nothing more nor less than a new combination of old elements" (Young 1979, 10), then visual research and the gathering of "raw materials" (Young 1979, 12) is paramount to any creative process.

After working for nearly two hours straight, sound-tracked by rapper Kendrick Lamar blaring from the tinny speakers of a Samsung SII, the team sat down for a meeting to discuss their progress with me. They had generated individual concepts of visual designs they wanted to produce. Lunga began by spreading his notebook on the table: he had made a mind-map of ideas (Figure 2). In the centre of the page he had written and circled "t-shirt illustration", around it he included terms such as "typography", "illustration" and "Ed Hardy" connected by spider-like nodes. He consulted his notebook to explain the aesthetic of the imagined t-shirt design he wanted to make over the coming days, "*For example if you see the style of Ed Hardy – he puts so many things together and it makes one image*" (Lunga, 07-07-2014). Ed Hardy is a clothing brand that is well known for its tattoo-inspired graphic prints. At this point Lunga knew that he wanted to create a composition that was detailed, busy and graphic.

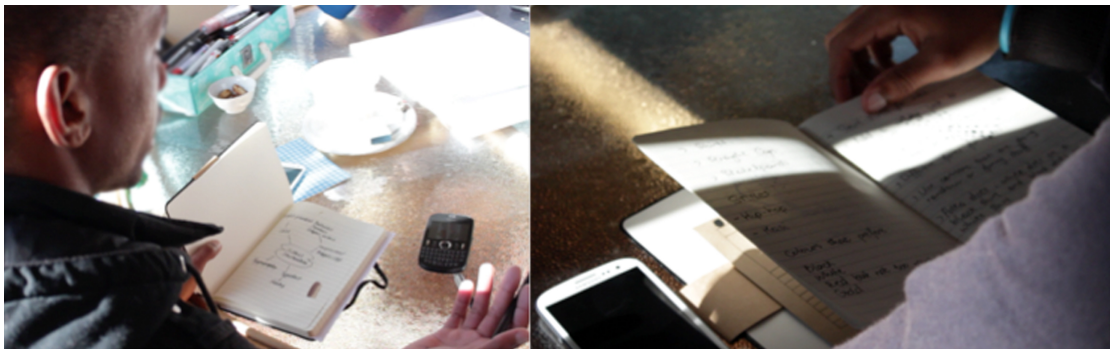

Figure 2: Lunga explains his ideas for a creative project (left) and Bongani pages through his notes (right).

As the conversation revolved around the references that Lunga had collected onto his phone's photo library, the device was passed around the table between hands so that everyone could have a look. Many of the images were the works of Loyiso Mkize – a local artist and graphic designer who also hails from Cape Town. Mkize was a prime role model for all of the jammers: he came from similar beginnings, and followed a career trajectory to which many of them also aspired. Mkize draws comics, makes fine art paintings, and works in a style that reflects and celebrates black South African youth culture. His style is marked by rich textures – in his painted portraits, black protagonists are circled, extended or composited by dense collages of distinctly African images. Merging traditional imagery with signs of modernity, Mkize brings together visual elements of African urbanity, nature, machinery, geometric patterns and mysticism. Mkize also produces comics for younger

audiences that reimagine traditional comic book aesthetics through African protagonists. These characters are diversely styled – from millennial South African teenagers who are glued to their mobile devices, to representations of traditional African ancestors.

Menzi grabbed one of the Samsung handsets that I had provided, wanting to show me a video of Loyiso. He swiped to the *YouTube* application, and typed in "Loyiso Mkize whisky". We huddled together and watched an ad for a whiskey brand (Colson 2012), in which Loyiso described his career trajectory, "*I came here in search of that elusive dream, to be an artist, a professional artist. As an artist you are an observer…you observe society.*" We all leaned in over the mobile screen, watching the video together. Images of streetscapes were intercut with Loyiso in a studio space, placing artworks on the wall. Emotive shots followed him walking through his neighbourhood – a township in Cape Town – and suddenly flashed to moody grey skies that contrasted with brightly spray-painted street art on the side of a dilapidated wall. He mused, "*My work as an African – it is to preserve our identity. To proudly place it in front of the world and say, 'hey, we are more beautiful, we are more colourful because of our diversity*…"' The advertisement ended with him standing in the road, looking into camera, "*I am Loyiso Mkize,"* a dramatic beat, "*you don't know me yet*…" before he walked away into the distance. The shot faded out, and the words "follow yourself" appeared on the screen, next to a package shot of *Knights* whiskey.

This advertisement, which aired on public television in 2012, was revealed to have played a central role in all four of the jammers' decisions to study visual design – "*I just wanted to be like him so I applied to study*" (Lunga, 07-07-2014). For many, this was the first representation that they had seen of a young, successful black South African visual artist – right on their television sets. While it would have been useful to know the importance of this rolemodel earlier, none of the participants mentioned Loyiso during their interviews. Only during the jams it was revealed that Loyiso was a major character who has been essential in these designer's imagination about their own creative journeys. Finding black creative role models to whom they could relate was a big challenge for all of the kasi creatives. Making contact with role models such as Loyiso to seek out mentorship was even trickier. All four of the jammers had tried to reach out to their heroes, but seldom heard responses. Menzi said that he associated this lack of "heroes" to the scarcity of black voices in the design world, "*I know like, maybe there's like five black designers that are famous, and not even half are South African*" (Menzi, 07-07-2014). Menzi listed

the African-American graphic designer and YouTuber, Roberto Blake, and a local designer who was the founder of MOS clothing, Nhlanganiso Bulelani Nkunzu, as two such heroes. The latter, whose innovative means of job creation and context-appropriate distribution systems were discussed in Chapter 4, was seen as a prime example of a township hustler who rose to great success. Thus, while the jammers were interested in following the example of those who were once in their position; the choice of influencers, inspirations and heroes also speak to the social worlds in which these young creatives want to gain legitimacy and forge their identities as creatives. They deeply value and find affinity in these local creative scenes, which possess unique styles, fashions, aesthetics and a distinct air of kasi-recognized cool.

The jammers were increasingly refining their concepts as our discussion progressed: we reviewed scamps, looked at found images and listened to personal anecdotes. Independent of each other, it became clear that they wanted to model their project on these emergent creative cultures. The team decided that they specifically wanted to play with the slang and stereotypes of the townships around Cape Town: exploring ways to express their own kasi style visually as a brand. Like their hero, Loyiso Mkize, the jammers wanted to "*preserve [their] identity*" as black South African creatives. In order to do so, they wanted to produce a number of visual designs that could be used as merchandise in the shape of t-shirts, stickers, and skateboard decals. It became clear that the jammers wanted to produce wares that could be sold and incorporated at physical objects. Their project tapped into an emergent national subculture of kasi brands: where entrepreneurs aestheticize various aspects of kasi life, turn these into fashionable and desirable consumer items, and sell them. Having decided on what is was that they wanted to produce; the team refined their concept and brand identity. Menzi pitched his idea for a concept:

> *Let me pitch what my idea is. Uhm…yesterday I was walking with my friend. And we came to a conclusion. Like we were just walking around, and he called me a 'pedestrian', a 'pedestrian' cause I don't have a car. If I approach a girl, she will be turned off. Cause I'll be walking. But, something came into my mind, that I'm not a pedestrian, I'm a Johnnie Walker: I don't use transport, I use my feet. (Menzi, 07-07-2014)*

In the context of a consumer culture that stigmatizes poverty, Menzi wanted to subvert this insult of being a "pedestrian" and put an aspirational spin on it. Through word play

he tied his 'walker' status to Johnnie Walker – an expensive and glamourous whiskey brand. Globally the brand is recognisable for it's "striding man" logo – consisting of a top-hatted dandy mid-step and the slogan "keep walking". In South Africa, in particular, the brand has been closely associated, particularly in media opinion pieces (Bearak 2010, Eyewitness News 2013, Drum Digital 2010, B. Huisman 2011, B. Huisman 2014), with the lavish lifestyles and consumer tastes of the black elite (Ngoma 2015, 40). In turn, Johnnie Walker has been transformed into an icon of black mobility and wealth. Through his appropriation of the brand's identity and its connotations of "conspicuous consumption" (Veblen 2009), Menzi exploited these semiotic resources to spin his car-less situation into a witty statement of both acceptance and ambition.

These anecdotes led the jammers to think about symbols and characters they could use for their designs. Earlier in the day, my partner Ben was showing the jammers an animation project that he was working on for a client. Menzi recalled a particular character that Ben had drawn for a children's program, and inquired whether they would be able to use *that* character in their designs. Ben turned down Menzi's strategy of remixing an existing design and suggested they come up with their own original characters instead,

*Lunga:* *We **do** have characters in ekasi! We have so many, I'm just thinking now – 'Amapharaphara'!*

[The guys laugh, and start chattering excitedly among themselves in isiXhosa]

*Anja:* *Wait, what is 'Amapharaphara?*

*Lunga:* *It's like a bad person, a person who steals. He is stout[24]. They are usually very slim, like they're funny, they're like a specific look. With those beanies with the thing on top.*

[he gestured to illustrate a pom-pom on his head]

*Bongani:* *Ja! We can make it into something cool. Like a 'gangster' thing in hip-hop.*

*Amapharaphara* is kasi slang which originated from the townships of Cape Town to describe young, often small-time, thieves and hoodlums – young people who have little

[24] "naughty"

else to do, and who often rob people to buy "*tik, dagga*[25] or food (Klanisi 2016)". *Ama* is an isiXhosa prefix that denotes plurality, and *pharaphara* is an onomatopoeia that mimics a number of significant noises: the sounds of guns firing, the sounds of a trains crossing over the rails, or the sound of quick steps (Goeller 2016). Searching for the term online delivered a number of opinion pieces and letters in local newspapers where parents decry the prevalence of amapharaphara among the young men in their communities – signalling a moral panic about the future of the youth in the face of poor education, absent parents and rampant unemployment (Klanisi 2016). For the jammers, the narrative of turning into amapharaphara if they didn't work hard at school, or obey their parents, was a familiar threat while growing up. According to the jammers, there is a distinct look associated with the stereotypical amapharaphara: they are envisioned as gawky and "*underfed*" (Menzi, 07-07-2014), with adornments that include pom-pommed beanies (placed right at the back of the crown, so as to elongate the head) or skewed bucket hats (or both stacked on top of each other), rolled up pants legs, sneakers, and a weapon of sorts (the guys cite whips, golf clubs or sticks). Bongani articulated a desire to subvert this typical image of a lowly township thug, humorously turning this stereotype of the deadbeat slacker delinquent, into a glamorous aspirational figure.

Bongani suggested that their aims with the brand should be like the re-dressing of, for example, gangsterism as it has been portrayed in Hip-Hop visual culture. While both the stereotype of the gangster and the amapharaphara are associated with crime and violence, the visual culture of gangsterism as it is depicted in mainstream commercial Hip-Hop now couples such infractions with ambition, aspiration and celebrity. In these representations the conspicuous consumption (Veblen 2009) of luxury goods, associated with the leisure activities and hedonistic lifestyles of the upper classes, becomes a thoroughly expressive activity. And such visual markers – of bling, "hoes[26]", "pimp-cups[27]", expensive cars and

[25] "Tik" is the South African name for a cheap and popular form of crystal methamphetamine. "Dagga" is a South African nickname for marijuana.

[26] "Ho" is short for "whore" – in the context of Hip-Hop this is a way of referring to women in general, and sex workers in particular..

[27] A "pimp cup" is a gold chalice from which to drink alcohol. You can own one of these if you are a "pimp" – a purveyor of sex workers.

boats, designer clothing, diamond-encrusted grills[28], and beach holidays, to name a few – contribute to the very fabric of the genre's visual identity (Rehn and Sköld 2003).

During our discussion Menzi tried to distinguish what makes these township archetypes either good or bad, and circumscribed a difference between the "hustles[29]" of these individuals. He invoked the example of the *izikhotane* to demonstrate his point.

> *Like pharaphara, they are bad. They are hustlers, but they hustle in a bad way. Like izikhotane…they are a kind of izikhotane…*

*Ukukhothana* is a youth subculture of township based young people called *Izikhotane* who burn expensive designer goods during highly stylized competitive group dance-offs, in an attempt to claim dominance and material superiority over other Izikhotane troupes (Chipp, Kapelianis and Mkhwanazi 2015). These dance-offs are a subgenre of *Pantsula:* a street culture of dress and dance, which dates back to the 1970's in South Africa (Goeller 2016). Pantsula was an evolution of local dance traditions, including the *Sophiatown* and *Kofifi*[30] dances, which were adapted to incorporate elements of American Hip-hop in the 1980's after local creatives were exposed to these musical genres. Here, the influence of particularly the "B-boy" style (Goeller 2016) was assimilated to produce a hybridized subculture that incorporates these divergent influences.

Dressed in brightly coloured designer brands, Izikhotane have incited a moral panic in the mainstream media, who have in the past framed their creative (and destructive) cultural production as "the broken inheritance of the past" (Wende 2013). The Izikhotane's "conspicuous consumption and destruction" of lavish goods have lead to moral expressions of outrage in the media (Chipp, Kapelianis and Mkhwanazi 2015). Yet, Menzi argued that not all people who belong to this subculture are stealing and plundering, despite the negative media reviews:

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[28] A "grill" is a type of jewellery worn over the teeth, and is typically removable.

[29] 'Hustle' is a determined approach to making money, or realizing your personal goals.

[30] For a more detailed account of the history of Pansula see "Impilo Mapantsula – or how to jump from a moving train. Recording the first hand history of South Africa's dominant sub-culture and contemporary dance form" by Daniela Goeller, available online: https://www.researchgate.net/publication/305400188_Impilo_Mapantsula_-_or_how_to_jump_from_a_moving_train_Recording_the_first_hand_history_of_South_Africa%27s_dominant_sub-culture_and_contemporary_dance_form

> *But we can make it a good thing. So like, you have izikhotane…then you have izikhotane who earn for what they burn. And then you have izikhotane who steal what they burn. Maybe that's what we wanna change…that's my view in Amapharaphara. You have amaphara who hustle in a bad way. And then you have us, Amapharaphara, who hustle in a good way.*

Menzi distinguished between izikhotane who "*earn what they burn*" – in other words, those who work honest jobs to earn the money which they burn in these dance-offs – which he describes as "*hustling in a good way*". On the other hand there are those who "*steal what they burn*", attaining their bragging rights through dishonest means: "*hustling in a bad way*."

The jammers' focus on positioning their own identities in terms of the moral economy of township life echoes many of the conflicting notions of personhood related in Schwartz's book *ikasi* (Schwartz 2009). Schwartz notes that many of the young people in her study had used particular labels to refer to their peers in terms of their embodied moral stances. Ranging from good to bad, participants referred to their friends as "mommy's babies", "right ones", "kasi boys/girls" or "skollies". On the good side of the matrix, "Mommy's babies" were sheltered and decidedly uncool. "Right ones" were good influences who focused on their education, but would experiment with alcohol and drugs judiciously. According to Schwartz's analysis, the jammers, who were hard working and dedicated scholars, could easily fall into one of these categories.

On the bad side, kasi boys/girls were those who "partied all the time, had the latest branded gear, and lived life on the *edge* of addictions and crime" (Schwartz 2009, 74). "Skollies", at the extreme, were "into hard drugs, robbery, housebreaking, car hijacking" and might be members of organized gangs. Those on the "bad" side of the spectrum were decidedly 'cooler' than their "goody two shoes" peers (Schwartz 2009).

Conceptualizing "Parapara[31]" as a brand appeared to be the jammers way of grappling with these categorizations – they were poking fun at their bad peers, turning them into caricatures, while asserting their own brand of cool. The group decided that they wanted to associate their brand with a "good hustle" approach to life, while still riding on the street cred of Amapharaphara. The jammers were creatives who might have prioritized their

[31] The students changed the spelling of the term for their brand.

education, but they are still "*hustlers…in a good way*" (Menzi, 07-07-2014). Dizzy had settled on creating a typographic Parapara design, where images of guns, knives and pangas would be composited as letters spelling out the name of the brand. He planned on framing this text with two graphic hands signalling "*finger guns*" – which he contended was an important hand sign for the pharaphara. Menzi decided to create a parody of the Johnnie Walker logo, where the whiskey brand's iconic pictogram of the "striding man" would be remixed with signifiers of township Amapharapharas. In Menzi's vision, the Johnnie Walker character is adorned in a pom-pommed beanie, wears sunglasses, clutches a golf-stick instead of a walking stick, and dons All-Star Converse sneakers. Menzi's appropriation of the Johnnie Walker logo, remixed with visual signifiers of the amapharaphara can be framed as a form of "culture jamming" (Haupt 2005). While self-aware culture jammers do the work of subversion in order to "disregard the operation of intellectual property laws" and slam the "operation of capital" (Haupt 2005, 137), Menzi did not see his appropriations as mounted critiques of consumer symbols. Instead, Menzi's subversion of the striding man character, for example, embraces the semiotic power of Johnnie Walker as a high class, expensive brand. Such remixing operates in a similar way to digital sampling in hip-hop where the success of the work being produced relies on the audience's recognition of the original text, brand or marketing strategy (Haupt 2005, 137). In such creations, the trademark of the brand is fully embraced in order to extend its message.

Lunga developed his design by drawing inspiration from *Ed Hardy* and Loyiso Mkize, opting for a complex and busy image consisting of many smaller illustrations, including tin shacks, cars, "*babes*", a turntable, and "*gangsters*" (Lunga, 07-07-2014). To begin this process, he had illustrated a graffiti-style "Para²" logo in his sketchbook with a pencil. The inclusion of the squared symbol, as typically used in mathematics, was playfully included to contrast the nerdy signifier of science and mathematics with the stereotype of the amapharaphara as dumb or uneducated. In addition, his choice to include a shack in his composition elevates the humble informal housing of many in his community to an icon of township life, rooting his design in the kasi.

Bongani decided that he would also use this Para² logo for his t-shirt design, but wanted to add hand-lettered type for the slogan "*Never walk alone*". The slogan referenced the dangers of walking alone in the townships (where one might fall prey to the "*bad kind of Amapharaphara"* (Bongani, 07-07-2014)). It was also intended as a call-back to the Christian

belief that when you "*walk with the Lord, you never walk alone*" (Menzi 07-07-2014), associated with the anthem of the football team Manchester United (who are immensely popular in South Africa), and shares an acronym with the hip-hop group N.W.A (Niggaz Wit Attitudes), who are often deemed as being the pioneers of the hip hop genre *gangsta rap*.

Through conceptualizing these designs, the jammers drew on a broad range of visual culture: they appropriated consumer brands and symbols of aspiration, tapped into a rich visual history of township and hip hop subcultures, included their own positionality of prioritizing their education and being "*good gangsters*", subverted the stigma of poverty, and iconicized the Amapharaphara. The young designers Synthesized these ideas to come up with "Parapara": the streetwear brand. Through playful remix and appropriations of local slang the designers wanted to subvert the stereotype of a good-for-nothing-thug and humorously elevate him to an icon of township cool. Yet, in order to communicate these designs to their intended public, the team had to draw on a particular repertoire on visual resources, aesthetics and symbols to forge their designs, to breathe life into the visual manifestation of their brand. As an outcome, the Parapara team wanted to produce printable designs that could spread their brand to the streets, where their consumers could literally embody these designs through clothing and other merchandise, as an extension of an emerging national creative world of kasi clothing brands.

**Implementation, Design Processes and Exporting files**

After the conceptualization phase of our session, the jammers had to begin implementing their ideas. Using these initial ideas and sketches as a blueprint for their designs, the team created graphics for their brand using mobile phones for the first jam and moving to laptops for the second jam, which took place one week later. As a first step in this process, jammers drew ideas into their sketchbooks, using their phones to search for and display references that they combined on paper (Figure 3), increasingly refining their visions.

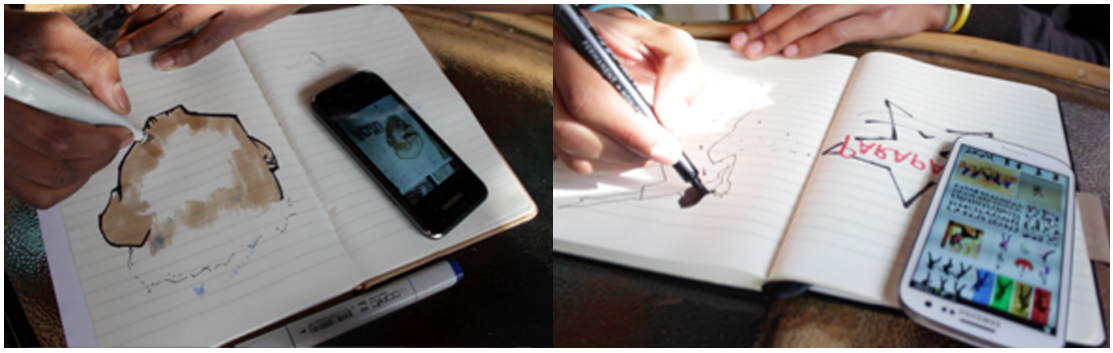

Figure 3: Jammers draw ideas in their journals, using visual references on their mobile devices.

### *Mobile-centric creative processes*

*Taking stock*

The participants made use of two Samsung Galaxy SII's, a Motorola XT928, and a Nokia Asha 200 during the jam (see Table 2).

Table 2: Mobile devices used during the jam

| DEVICE | LAUNCH DATE | SCREEN RESOLUTION | MEMORY | CAMERA SPECIFICATIONS |
|---|---|---|---|---|
| Samsung SII | 2011 | 480 X 800 pixels ~ 217 ppi | Internal 16 GB, 1 GB RAM, microSD cardslot (up to 32GB) | 8 MP, LED flash |
| Motorola XT928 | 2011 | 720 X 1280 pizels ~ 326 ppi | Internal 16 GB, microSD (up to 32 GB) | 13 MP, LED flash |
| Nokia Asha 200 | 2011 | 320 X 240 pixels ~ 167 ppi | Internal 10 MB, 65 MB ROM, 32 MB RAM, microSD (up to 32 GB) | 2 MP |

On the second day of the mobile jam, the jammers took stock of the free tools that were available in the Google Play Store (

Table 3). For the purposes of the jam, we decided to limit our experiment to applications that would be available at no cost (beyond the download cost) in the Play Store. While researching the best applications for visual design, the jammers also consulted a number of web articles on their recommendations. In total, the jammers downloaded nine free applications with which to experiment.

Most of the applications that the jammers downloaded had very similar functionalities – the majority were photo editing programs with options to overlay graphic elements or filters. Then there were two drawing applications, Sketchbook Xpress and Artflow, which had colour pickers and a limited option of brushes. And lastly, there was one vector drawing application, Infinite Design, which offered users a very limited palette of vector drawing tools.

Table 3: Applications used during the jam

| APPLICATION | FEATURES | JAM USE |
|---|---|---|
| Artflow v1.5.65 | Drawing application with layers, custom brushes, advanced colour picker and "smudge" capabilities. Requires In-Application purchases (IAP) to unlock all features | Unable to open on any of the phones used. |
| Sketchbook Express 2014 (AutoDesk Inc.) | Drawing application with layers, brushes, colour picker. Free version of Sketchbook Pro. No layer controls, no custom brushes, no symmetry/reflection, cannot save working files or layers (as *.psd or otherwise) in final export. | To draw logos for micro-advertisments with stylus |
| Studio Design (Studio) | Mobile Design application – built in with text, shapes, and ready-made design-elements like typographic stickers. Also uses a "remix" function where you can remix anything from other users of the application and edit the elements to "remix" these creations into your own. | Used to add typographic and decorative elements. |
| Pixlr-o-matic (AutoDesk Inc.) | Image Editing application with filters, stickers and type. Can create high resolution "collages" (combine images in preset frames). Also capable of limited image layering (no layer styles or blending modes), | Crashed on all of the phones used |
| Photoshop Express 2014 (Adobe Systems) | Quick Photo Editing applications with adjustable preset filters, colour balance, crop, red-eye reduction, preset frames and blemish tools. | Used to quickly edit photos for the micro-advertisement. |
| Infinite Design 3.2 (Sean Brakefield) | A Vector drawing/editing application with an infinite canvass. Free version has limited layers, limited image effects, cannot save out with layers (as *.png, *.psd or *.svg) | Used to composit photographs and designs, because of it's alpha layer capabilities. |
| Photo Editor 2.3 (Dev MacGuyver) | Standard Picture Editor with an option of 50 frames, 30 filters, simple drawing, rotation, crop, correction tools. Has a lot of In-Application Advertisements. | Used to crop images |
| PicSay 1.6.0.10 (Shinycore) | Standard Picture Editor with adjustments, paints, colour splash, add text, word balloons, Lomo, Pencile Sketch, Tilt-Shift, Stickers, Insert Cut-out of other pictures. Most features very limited in the free version. | Not used |
| Photo Studio (PicsIn) | Limited Filters, Effects, Frames and Stickers, Add text. No ads, but have to buy to use full functionality. | Not used |

The team then spent the morning trying out their haul. Some of the applications were familiar to jammers, while others were being tested for the first time. They tried all of the tools provided by each application by clicking through them and making quick

experimental compositions (Figure 4). These ranged from bitmap painting, vector drawing, layering of art assets, image adjustments, to simple photo editing.

After familiarizing themselves with their tools, the jammers began the process of executing their designs. Yet, they soon realized that their options to manifest the original ideas conceived on paper were challenged by interfaces and tools that didn't afford them the options to render the designs that they envisioned.

Figure 4: The jammers test the their design tools by going through the applications' features.

*Drawing and tracing*

Lunga, who wanted to render a simple pencil sketch logo with digital *ink*, soon grew frustrated by Sketchbook-Express constantly crashing on his phone, so he tasked Dizzy to manually trace his graffiti logo for him on Dizzy's more advanced handset (Figure 5). Using an application called Sketchbook Express on his Samsung Galaxy SII, Dizzy struggled to switch between zooming and drawing, having to undo his strokes every time the application mistook his "pinching" gesture as an intended graphic mark. Menzi was the only jammer who owned a stylus for drawing on mobile screens. He loaned the stylus to other jammers, who otherwise struggled with "fat fingers" (Siek, Rogers and Connelly 2005) while attempting create detail or precision in their drawings. While Dizzy borrowed the stylus from him, Menzi attempted to trace a vector image by hand in Infinite Design.


Figure 5: Dizzy traces Lunga's Para-para sketch digitally.

After working with the application for a few minutes Menzi clicked his tongue in annoyance, "*It's not gonna work, Nanna*". I put down the camera I was holding and moved in beside him to find out what the problem was. He held the back of the device, where the battery was located, to his cheek, "*It's getting too hot.*" Then he held it out so I could feel the heat emanating from the device. The battery, indeed, was overheating – it felt menacingly warm against the inside of my palm, "*Rather shut it down then."* I advised. The application had already frozen the device, and it wasn't responding to any of the touch inputs. Bongani joked that the phone was going to explode in his hand, but Menzi quickly executed a hard-reset – holding down the power button until the phone switched off. Doing so, he lost all of the progress that he had made on his vector drawing.

Often during the mobile jam, phones overheated owing to overburdened Central Processing Units (CPU's) – the 'brains' of these devices that controlled and executed all of its functions. The intensity of processes that were required to create and render images furthermore quickly drained batteries and/or crashed devices. The mobile devices' two biggest shortcomings were first, the small screen size for drawing and second, slow processing owing to the number of transistors that could fit onto such small chips. While Moore's law predicts that the number of transistors per square inch should double every year, others have argued that exponential growth in capacity would may reach its limits in the next decade (Theis and Wong 2017). While looking for applications on the application-stores, it became clear that these marketplaces only 'stocked' the latest versions of software for mobile. Thus, for many with older devices, there were few options to get these newer systems working on their phones. This innovation-centric approach to software development is entrenched in mobile ecologies – where users are encouraged to frequently update their devices and operating systems owing to the "planned obsolescence" of technologies (Amankwah-Amoah 2017). Planned obsolescence is a conscious commercial strategy that aims to get people to upgrade their hardware. This upgrade-oriented market

leaves those with older or less powerful handsets unable to participate, as older versions of applications are no longer maintained. In other words, while in theory, township creatives could just wait for their phones to catch up with the processing speeds; they would forever remain at the tail end of the upgrade race owing to their relative economic position.

In addition, recently documented attempts to optimize devices for rendering processes have seen many developers of visual design applications turn to online cloud services to offload their processing load (Dev and Lau 2015), predicting that such processes would become increasingly common in the future. The recurring issue of data costs would, in such cases, cast kasi creatives even further back on the development curve, and may mean that such young people are even less able to use these tools of the future. So even if a young designer like Menzi could aim to upgrade his device in a number of years so that it could run the software we experimented with during the jam, by that stage these same applications would have, in turn, been maintained and optimized for the latest devices with the latest cloud-rendering systems, and Menzi might still struggle to find a compatible version, that didn't overburden the CPU, or cost exorbitant amounts of data, to run on his device. In addition, older unsupported versions also leave users vulnerable to viruses, hacks and ransomware.

*Exporting for print*

Dizzy, who had by this point figured out how to draw digitally with the stylus, was now struggling to export his creation. He explained that he would normally take screen shots and save these images of drawings from Sketchbook Xpress straight into his phone's media library. This strategy produced low-res images, but was well suited to his practice as he typically shared such creative images online, and smaller images were cheaper and quicker to upload. The aim for this jam was to produce printable designs and so he had to try to export the image he had created at its full resolution so that it would not pixelate. "*I actually never print from the phone*," he said while flicking through options to save his drawing, "*why can't I save?*" (Dizzy, 08-07-2014). After a frustrating search, he finally found an option to export the image, which retained its quality. Nonetheless, the application did not specify (from the options we could find) the dimensions or the resolution of the exported image – crucial details for a print design. Print formats also presented a challenge since images created within the application can be saved as TIFF, but none of the other

applications on his phone could actually open the file once it was saved as such. This demonstrated how visual design applications on phones are typically intended to produce graphic images for distribution online, and not for print.

*Scripted mobile creativities: aesthetics, compositing and remix*

By the second day, the *Parra-parra* crew was making very little progress in creating their designs using the mobile applications. At our afternoon discussions, the jammers lamented their slow progress, and began giving up on their phones' capabilities to render their designs. Lunga had taken to intricately sketching out all of his illustrations on paper in his sketchbook, annoyed by the limited drawing functionalities of the applications. Bongani, Dizzy and Menzi, however, had tested a variety of applications. Through processes of trial and error they were able to use them to produce a number of visually striking by-products, although these did not resemble their initial sketches. These included luminous geometric patterns in a vector application; layered visual effects over found images and decorated selfies overlaid with punchy slogans. These and other "*happy accidents*" had begun populating their phone libraries, yet they still had no printable designs because the mobile images were all low-res. With one day left to generate their designs on their phones, I asked them what they thought they could accomplish on phones, if not printable designs?

While browsing through all of the artefacts the team had generated through experimentation, Lunga suggested that they adjust their aims and embrace the applications' strengths in producing images for digital distribution.

> *We can make hype. We can make cool images, that like…part of the brand…and get more audience, and that. Maybe we should just make these images that are for our Facebook page. (Lunga, 08-07-2014)*

Abandoning their quest to create printable designs from their phones, the jammers then concentrated their attentions on using the phones to make online ads for their Facebook page. As Marwick has argued, many Web 2.0 applications, owing to their conception within Silicon Valley or within the "tech startup" scene, are built to support and reflect the practices of "celebrification" and branding which are valued among such developers (Marwick 2010). While many of the mobile applications didn't support the creation of

printable designs, they were indeed very capable of producing web images for branding purposes. An app that was quite popular during the jam called Studio Design was particularly useful for this aspect of the mobile design ecology. In Studio Design, modularity and remixing are the prevailing logics of creativity. The application's remix option enabled the designers to take any design created by members of its online community, allowing them to access the layers[32] that other designers used to remix the composition. Users could then add their own photographs, phrases, or colours to generate their own designs.

Menzi combined a selection of photographs that the jammers had taken of themselves in front of a graffiti-covered wall, and overlaid the image with typographic elements including a readymade sticker that read "*Yo!*" in elaborate script-style typography. Stickers are a recent popular development on social media platforms, and typically consist of pre-designed graphic elements such as cartoons, phrases, speech bubbles, emoji's, and so forth, which users can 'stick' onto photographs or images for communicative or decorative purposes. Lim has commented on how such "graphicons" are capable of extending "communicative fluidity" – where negotiated meanings of the stickers are used to denote tone, humour or other associations (Lim 2015). Yet, they also argue that limited repertoires or prescriptive visual vocabularies can also make users communicate in ways that they find forced or inauthentic (Lim 2015).

Nonetheless, in relation to the jammers' goals to capture a distinct *kasi* look, the stickers were less than helpful. Instead, the options made available by the application provided a homogenous selection of styles, which revolved around popular visual design tropes – most notably elements that were derived from a "hipster aesthetic", a style which has been critiqued as contributing to a global "harmonisation of taste" in recent years (Sloane 2016, Chaykra 2016) and distant from kasi style to which the creatives aspired. Creatives thus use style *as* infrastructure for their creativity.

[32] A 'layer' in graphics creation software refers to the different levels at which the designer can place objects. They can be likened to layers of acetate stacked on top of each other, where underlying layers are visible if not blocked by objects on the upper layers. Layers can be stacked, merged, switched on and off, and re-shuffled to produce a design.


Figure 6: Example of image created in Studio Design

This "aesthetic gentrification" (Paulicelli and Clark 2009) that derives from the "capitalist workings of Silicon Valley" (Sloane 2016) can be seen as flattening the cultural richness of situated aesthetics. As Chaykra bemoans, these visual markers of Silicon Valley "taste" and "distinction" (Bourdieu 1984) have rendered diverse places and things to possess the same "cookie cutter […] faux artisanal" aesthetic (Chaykra 2016). Instead of creating images that capture the rich, distinct, and unique visual culture of the *kasi,* the jammers, by using the mobile applications, found themselves, not entirely willingly, reproducing these generic global design sensibilities. This kind of second-hand creativity echoes cases highlighted by Nyamnjoh, where African children, while provided with a limited media buffet, display agency in forging their own meanings and creativities through this media (Nyamnjoh 2008). Provided with these limited options, the jammers' originality, authorship and ownership over the images they produced was sacrificed at the altar of globalized convenience.

Beyond providing a pre-curated selection of design elements and a relatively homogenous style, many of the applications that we experimented with forced their own brands onto users' images by overlaying watermarks when images are exported to advertise their applications. In other cases, authoring tools were directly coupled with social media platforms such as Studio Design, where users couldn't download their pictures unless they published them to these connected sites. In both cases, such sites rely on a cloud-based ecology of use, which are designed around the assumption that the always-connected user

can upload and download their creations. But, as argued earlier in this thesis, data is a scarce resource which kasi creatives ration, making many of these cloud-based processes impossible. What provides the infrastructure for certain creative worlds, offers an obstacle for others.

The legal terms and conditions of mobile applications offer another, far more obtuse, obstacle to ownership. For example, *Studio Design*'s terms and conditions stipulate that they retain proprietary rights to all "application content" (Overlay Studio Inc 2017), which includes "trademarks, and other intellectual property of any kind in the Application" (Overlay Studio Inc 2017). This includes the design elements provided by the application. Thus, while creators who use the application can distribute these images to promote their content, they could not legally monetize these creations as they include copyrighted elements. Furthermore, in terms of "customer created content" (which include images that users incorporate into their compositions, not provided by the application, and the compositions themselves) the users retain their intellectual property, but the application, their agents and affiliates are granted "a non-exclusive, paid-up, perpetual, and worldwide right to copy, distribute, display, perform, publish, translate, adapt, modify and otherwise use such materials for any purpose regardless of the form or medium in which it is used" (Overlay Studio Inc 2017). In other words, while the application retains its own intellectual properties, it also gains control of the ability to monetize content generated by its users.

This aspect of the convenience of the mobile application thus turned out to be rather inconvenient for the jammers – who wanted to create original images. In this way, the market strategies of the applications were directly oppositional to the creative strategies of the designers, whose toolboxes could only contain tools that were free.

*Appropriating functions beyond the interface*

Despite these scripted interactions, the jammers still attempted to forge their own designs that exploited a mixture of functions that individual apps provided, albeit through a series of patched interactions. For example, Menzi and Bongani worked together to try to put together an image of Dizzy's typographic drawing of Lunga's graffiti design, compositing it with an image of a cropped torso donning a blank t-shirt.

As Figure 7 illustrates, Menzi and Bongani used five different applications to produce their final design. They imported images, and often, in lieu of export options, took screen shots

and cropped out any unwanted artefacts, footers or visible parts of the interface. The resulting image was of extremely low pixel quality and thus unsuited for print. Additionally, the process was extremely laborious since they saved out about 12 different images to obtain one final image. While the image could not be printed, the final low-resolution image was suitable for distributing the advertisement cheaply over mobile networks.

This way of working was largely improvisational: the jammers gave up on implementing the ideas they had drafted in their sketchbooks, through a systematic process of design, and instead drew on the available resources and design repertoires of the applications to produce brand advertisements. Separate images were then combined through a process of bricolage.

While the participants were trying to create designs that resonated with their own visual tastes, they had to make do with that which was at hand. And in the case of the abovementioned process, the resources and materials that were available to the jammers consisted of free applications – which are inscribed with branded aesthetics, forced actions, and imposed a limited visual vocabulary with which to make their creations.


Figure 7: The patched together brand advertisement that the jammers created using multiple applications, taking screen shots and cropping out footers.

This material, social, cultural and technical repertoire significantly restrained the opportunities that jammers had to produce their own visual cultural artefacts, imposing generic aesthetics and pre-designed elements.

### *Executing designs with Adobe Illustrator and Photoshop*

The next phase of the jam introduced a new set of design infrastructure – four laptops with Adobe Illustrator and Photoshop installed. The jammers continued implementing their ideas, but now they were able to draw on an industry standard ecology of resources and the professional practices they had started learning on campus.

*Taking Stock*

Up until this point Dizzy, Lunga, Bongani and Menzi had varying degrees of expertise with Adobe and spent the first day helping each other find tutorials that could assist them in their design processes. The mobile applications they had used the week before had offered a plug-and-play experience where interfaces were quick and intuitive to learn without the need to read manuals or tutorials. By contrast, using the densely-populated Adobe features demanded scholarly dedication over and above the participants existing university training. During this part of the process, the team watched video tutorials to assist them in figuring out how they might go about creating their designs. Most of the tutorials that jammers found were hosted on *YouTube* by a diverse cast of online personas – from amateur designers who shared their recently acquired knowledge, via screen captured processes at home, to design experts who presented these videos with all the punch and polish of a professional television production.

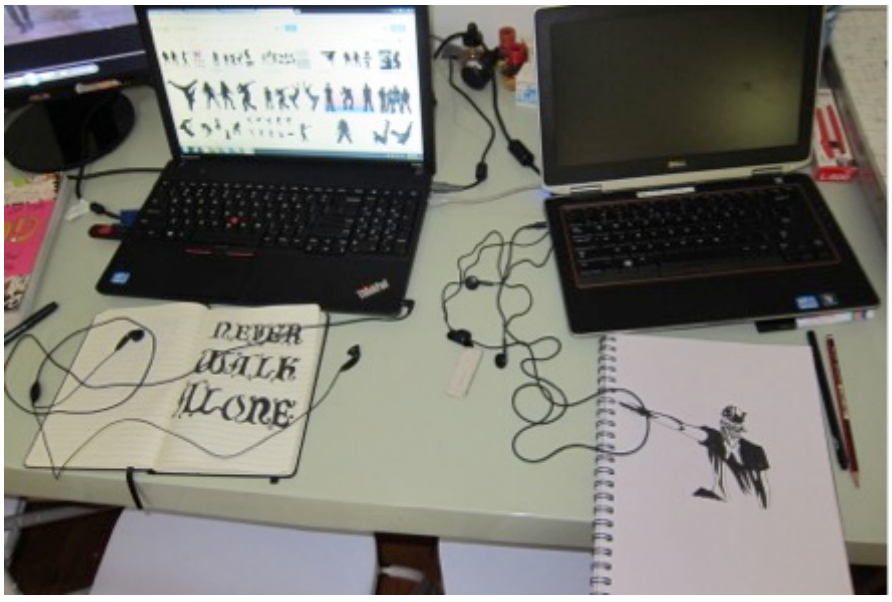


Figure 8 Bongani searches stock sites for hip hop dancers, while Lunga draws original artworks onto paper next to him.

In addition to studying how to navigate the complex and powerful interfaces of the Adobe products, the team also generated the raw materials that would bring their designs to life. Lunga had by this point drawn a number of black and white illustrations on paper. Both Menzi and Dizzy planned to re-work found images for their designs, and spent the morning using Google Images to find appropriate pictures. Bongani's strategy relied on a combination of hand-rendered typography and downloading ready-made vectors from a

well-known open source website, all-free-download, which provided a wide variety of royalty free Vectors, Photos, web templates, icons, fonts, Photoshop brushes, patterns and stylesheets (Figure 8).

*Design, Illustrate, Composit*

By the second day of the computer-jam, the group had begun compositing their planned designs. Lunga spent the first day drawing a number of illustrations onto blank paper, which he photographed with his mobile phone's camera. He then downloaded these photographic images from his phone's camera onto the machine and opened them in Photoshop to turn them into black and white images. Next, he imported these images into Illustrator, and simply used the "livetrace" function – an Illustrator feature which has automated the process of turning bitmap images into vector images – to simplify his photographs and turn them into printable vectors for compositing. Vectors, unlike bitmap images that can pixellate, render shapes and forms as geometrical equations, which can thus be reproduced at any size. Vectors can be printed without losing any image fidelity, at any size.

Lunga combined all of his illustrations into a crest-like graphic design (Figure 9). To finish his presentation, Lunga opened his design in Photoshop and overlaid it onto a blank t-shirt by simply switching to multiply mode, an overlay feature that renders all of the white in a composition transparent.

Menzi created his envisaged Parapara Johnnie Walker from a variety of found images on the web. These included a golf stick which he would use to replace the walking stick; a wool beanie with a pom-pom on top which would replace the standard Johnnie Walker top hat; a pair of All Star Converse which would take the place of the striding man's boots, and a pair of oversized sunglasses to finish it off.

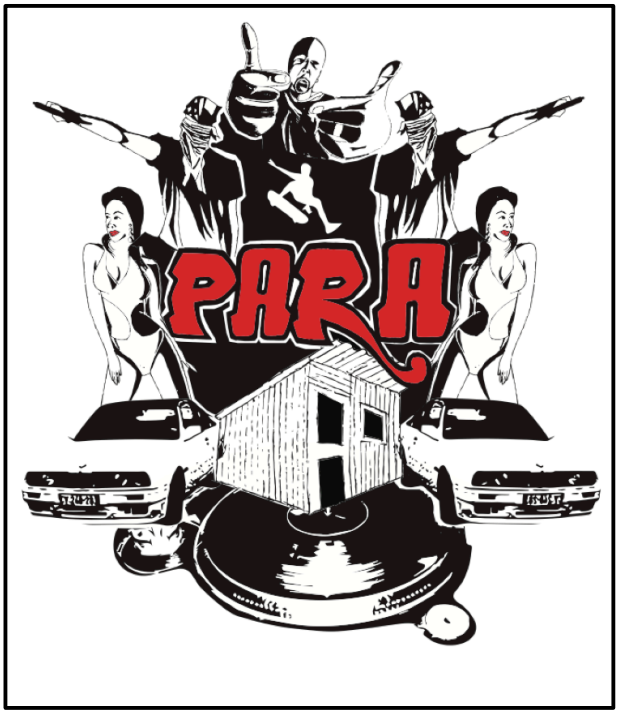


Figure 9: Lunga's Para design.

To integrate these new elements with the existing logo, Menzi also used the livetrace feature in Illustrator. The software provided a number of pre-specified options, including variables that limited the amount of colours included in the final vector images, as well as an option that determines the fidelity of the tracing algorithm. By setting the tool to black-and-white, and fine-tuning the fidelity, Menzi turned a number of elements into clean black and white vector symbols. Next, these gangster accessories were seamlessly integrated into the original Johnnie Walker pictogram (Figure 10).


Figure 10: Menzi's Johnnie Walker design.

Meanwhile, Dizzy found a number of images of guns, pangas[33] and knives on Google Images, which he used as the raw materials from which to construct his pictorial typography – first treating these with a half-tone filter in Photoshop to gain consistency and offset any possible pixellation of the web-images, and then vectorising the design in Illustrator, so that the lines would be smooth at print resolution (Figure 11).


Figure 11: Dizzy's design.

Bongani, on the other hand, sourced already-vectorised images of hip-hop dancers, which he juxtaposed with his "*never walk alone*" hand typography (cleaned up in Photoshop and vectorised in Illustrator) and a "parental advisory" sticker which he found on Google

[33] A large broad-bladed African knife that is used as a weapon or as an implement. It is very similar to a machete.

Images, and livetraced in Illustrator (Figure 12). These images, which closely resembled the initial plans mapped out by the jammers, were ready to be sent to the printers by the end of the second day.

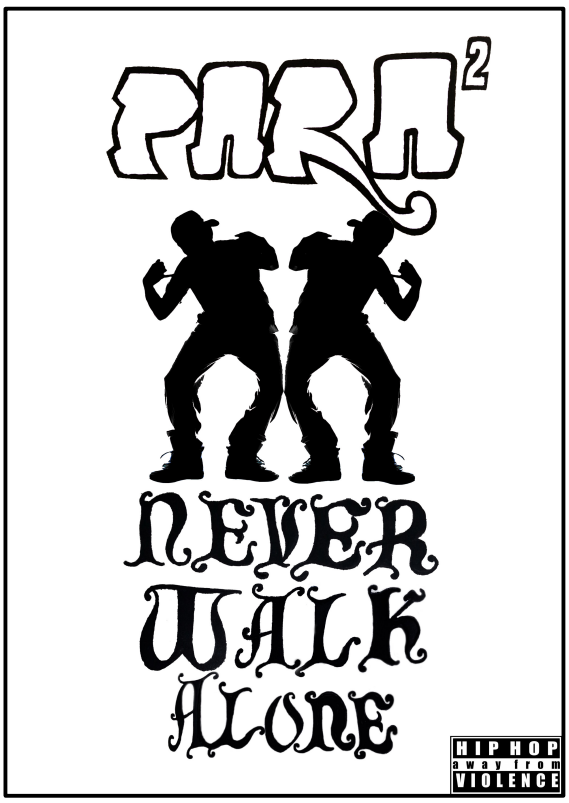


Figure 12: Bongani's "never walk alone" design.

These two infrastructured media ecologies – of mobile-centric creative tools and laptop-based creative tools – offered vastly different creative possibilities. Zittrain has argued that there has been a shift in consumer priorities, which has seen the design of internet systems moving from generativity to stability (Zittrain 2006). By generativity, Zittrain refers to one of the very keystones of democratic digital systems – where third parties can build on flexible open source resources to create their own systems, modifications and programs. In Photoshop, for example, there are nascent communities who develop plug-ins, libraries and other assets which can be freely downloaded and used with the software. For example, while creating graphics using the Adobe Creative Suite, the jammers were able to access a wide variety of libraries, filters, brushes, assets and elements that created by a global community of independent and corporate creators. Through simple actions the jammers could import these into their own compositions, access the underlying settings, and tweak them to suit their semiotic visions.

In addition, when trying to learn how to navigate the authoring software, the jammers could access numerous tutorials and guides created by an international crowd of PhotoShop users. While these elements were free, obtaining the Adobe range of software was unaffordable to the jammers, both economically and practically.

Yet, in the mobile ecologies we were using, where the authoring tools were free, creatives were unable to load their own creative assets. This has been done in an attempt to perhaps avoid security risks to systems, but are also intentional regulations by markets to protect their products (and profits). Mobile infrastructures were generally closed, and offered a limited set of visual discourses, with no third-party developments that could 'plug into' these systems. The architecture of the system is designed to support mobile-based casual, social and communicative practices. The apps that we tried during the jam reflected this, giving rise to what Zittrain describes as "closed endpoints". In such closed systems, users of technologies are not able to lift the hood on their creative tools (Venter 2015) and modify them to suit their own needs, but are instead provided with "appliancized PCs" (or, in this case, mobile devices) that only run programs, plug-ins and libraries that are approved by the entity who created the device/application.

Similarly, with the sticker packs or decorative elements, these are not open for anyone to create their own visual assets, as is the case in the the nascent creative worlds of Photoshop, but closed in order to protect stability, and keep the applications simple (Misra 2004). In this case, fewer options make for simpler applications, but also serves to shape creative possibilities, with extremely limited options for any creative deviations.

Although Adobe had created a number of applications that run on mobile devices, these "companion apps" were designed to extend Adobe's desktop software, and thus formed part of the company's larger software ecology. For example, applications are built to sync to desktop software, providing a way for creatives to generate assets on the go. Yet this affordance necessitates both computers and cloud access. While we did experiment with the Photoshop mobile app, it only provided a basic photo editor, and could not perform the extensive compositing capabilities of the desktop tool. The Adobe mobile applications were furthermore expensive, and frequently crashed the phones that we were using. The 'master narrative' that is inscribed in Adobe tools as infrastructure for creative practice thus foreground a well-resourced user.

**Experiencing creative practice through jamming**

In this chapter I described how I jammed with a select group of kasi creatives to experience mobile-based creativity first hand and observe these design practices up close. In jamming on a novel visual design project, myself, Menzi, Bongani and Lunga found that, while many had claimed to be 'Photoshop-for-your-phone', such an application was certainly not available for their phones…yet. Most of the applications that we experimented with revolved around similar functions – image editing, lite compositing, bitmap drawing or vector design.

During our sessions, these jammers expressed semiotic goals which spoke to their desires of participating in a particular range of creative worlds which revolved around local styles, genres and discourses (van Leeuwen 2005). Participants sought to bring these cultural artifacts, which they seldom saw represented in the world around them (Pretorius 2015), into the world as physical merchandise. The rich cultural tapesty they aimed to represent revolved around remixed appropriations of meaningful consumer brands, tapped into an extensive visual history of township street culture, and added the voice of the jammers – as children of the townships who were fighting the stigma of poverty, and were humorously claiming power in their divergence from the gangster life that many of their peers chose to follow.

In order to breathe life into their vision, the team had to draw on available visual resources, aesthetics and symbols to forge their designs. Yet, the free affordances that this mobile ecology provided, posed a number of issues to their creative agency. Among them, their slightly older smartphone handsets frequently crashed, overheated, or ran through battery life in record time. Such inconveniences were a result of newer applications that could not "plug into" (Star and Bowker 2006) the outdated standards on their devices. In an innovation-centric world, technology users who are not able to afford the latest gear or the ability to constantly upgrade their systems are inevitably on the losing end of the planned obscolescence of software.

It was exceptionally hard for the jammers to capture the visual identity of their kasi brand within the bounds of these applications. Many of these authoring systems were developed for the widest possible market, privileging a very particular aesthetic look which revolves around globalized trendy design tastes – which largely consisted of a Silicon Valley-borne

"faux artisanal" (Paulicelli and Clark 2009) selection of graphic elements. When considering how diverse the cultural practice of visual design is, it was especially telling that most of the tools we experimented with provided visual style with which one could, at best, decorate photographs or images with watered down, culturally ambigious visual artefacts, which could be done anywhere in the world, by anyone. In this way these authoring applications encoded existing cultural norms in both their design and the visual discourses they provided.

These apps exemplify what Zittrain would describe as "appliancized" systems - (Zittrain 2006) which have very little generativity. The affordances that mobile technologies offer for creativity observed in the jams – modularity and remixability – reflect the political economy of these applications. Most notably there was very specific revenue models baked into these systems driven by advertising, downloads and subscriptions. Thus, by limiting the available options behind a paywall, or controlling how users can reproduce or publish their work, developers encourage users to use their products in a particular, more profitable, way. In turn, many of these applications provide an experience of "implicit participation" (Schäfer 2011) which is akin to the creativity of a paint-by-numbers artwork.

The "master narratives" (Star 1999) that were inscribed in the visual design applications that we experimented with revolved around convenience: they typically appealed to a broad audience and did not require expertise from the jammers. Mobile devices and applications are designed as infrastructure that has very particular social, ethical, cultural and political choices folded into their development. In most cases, mobile applications have to be easy to acquire and quick to use. Mobile standards revolve around high compression, the reduction of metadata and particular visions of use. For example, while we attempted to do so, none of these applications provided us with options to print our creations from design applications. Mobile devices also didn't typically support the export of print-size design files, as they quickly filled up the phone's storage capacity. Instead, these applications foregrounded creativity and sharing that easily plugged into a mobile ecology – quick to learn, create and share. In Zittrain's terms we might argue that mobile applications are highly generative for mobile-based authoring practices, yet not generative at all for the purposes of printable visual designs (Zittrain 2006).

If practice and infrastructure are co-constituents, then the infrastructure of applications as we experienced them during the jams support practices that prioritize functionality, speed, casualness, and ease of use for quick online publishing. These businesses are built around the exploitation and monetization of social labour (Schäfer 2011, 51, Zittrain 2006). While the mobile applications were free, the artifacts produced through them could never truly belong to those who used these applications to create. As Goggin has argued: monolithic companies still "hold the whip hand" on the structure of applications, and control upon "what terms, and subject to what social, and power, relations" they are used, and by whom (Goggin 2011, 150). As the application universe is constantly in flux, it's difficult to provide a deeper taxonomy and analysis of what is, or could be, available to creatives who rely on smart phones to forge their visual designs.

Perkel has argued that users of technologies produce the meanings of the platforms they use: Infrastructure and practices are mutually constituted (Perkel 2011). Schäfer too argues (Schäfer 2011, 68) software is "tentative" (Schäfer 2011, 68) – features, interfaces, affordances and objectives are always in development, and thus as technologies evolve, and the political economy of application development shifts, kasi creatives might one day very well have the equivalent of Photoshop in their pockets. Yet, many applications rely on user databases, forums, feedback and documented use evolve and adapt the features of their services. As the kasi creatives predominantly use applications in patched and frugal ways, their use cases and needs seldom register with the developers of these technologies. Thus, while infrastructures and practices are mutually constituted, they are asymmetrically so in the case of kasi creatives.

In fact, one of the purposes of this analysis was to explore possible answers to questions of re-designing digital authoring tools in supporting the creative worlds of township-based young people as an extension of the "beyond consumption" project. This work provided a starting point for a group of post-graduate Computer Science Honours students in producing such authoring tools. While their project falls beyond the scope of this thesis, I have included an appendix (Appendix D) which offers examples of the paper prototypes we produced after our jam, and during subsequent participatory design (Halskov and Hansen 2013, Suchman 2002) sessions we held with the Computer Science students.

Jamming, as described in this chapter, also offered a different kind of observation than I experienced in the classrooms: it foregrounded these young people's material and embodied processes of creativity from conception to completion. In addition, jamming highlighted my position as both a researcher, and a fellow creative practitioner. Instead of merely observing, I was able to approach this creative process as a collaborative and reflective exercise. Like a musical jam – the jammers and I were able to play to our strengths, and play off each other. At the same time, participants were able to undertake projects which they deemed important and learn from more seasoned creatives both in the space provided, and online.

While jamming is predominantly used in game development as a means to develop rapid prototypes, it has been noted as being integral to the culture of the game development community. It has been argued that jams foster collaboration, mentorship opportunities, friendships and a greater sense of community (Musil, et al. 2010). I, too, found that during these sessions, the jammers and I grew close and had ample time to delve deeply into subjects that interested us. Jamming thus provided the foundation for us to develop a trusting relationship, which resulted in ongoing friendships. If it were not for these sessions, I would not have had nearly as rich an understanding of kasi brands in general, and the aspirations of this particular group of young people in particular.

After these sessions, I was able to remain in contact with the group of creatives, who have warmly engaged in follow up questions, and in turn, have sought out my help as a mentor. These exchanges have continued up until this day, long after the fieldwork period concluded.

Jamming also highlighted the necessity for physical spaces as creative meeting points. For many of the kasi creatives I encountered during this research period, their exposure to creative worlds were limited outside of the university – largely because there are few spaces for them to practice in – and jamming emphasized these embodied dimensions of creativity. For creative worlds to thrive, young aspiring creatives need space and infrastructure to bring their semiotic goals to life. As things stand, their agency is severely hampered by tools that aren't well-suited to their practice, and a lack of spaces to seek out communities of practice beyond the university.

*Chapter 7*

# CONCLUSION

In this dissertation, I have provided a snapshot of how a particular group of young, poor and working class designers appropriated digital technologies to participate in creative culture inside and outside of university. The tensions between these settings, which revolved around shifting identities, changes in embodiment, and infrastructure for practice, reflected many of the current dialogues around the disenfranchisement of young students of colour in Cape Town. As protestors, academics and policy makers begin envisioning ways of "nibbling" at "resilient colonialism" in South Africa (Nyamnjoh 2016), this dissertation contributes an analysis of how broader societal powers, and particular master narratives (Star 1999) are embedded in everyday infrastructures. I have documented how mobile ecologies are adopted, experienced and navigated in the quest for participation. As creative cultures, communities and economies increasingly aggregate on digital networks and distribution systems, it is important to note how these technologies enable or constrain practices.

Yet deeming particular technologies as enabling or constraining, amateur or professional, generative or closed, authentically kasi or colonial in relation to creative practice is a gross oversimplification of the work of creativity. Design practice in essence is dynamic, improvised, disruptive and metamorphic. While celebratory accounts of digital technologies in the creative consensus are tempered in this dissertation, they are not wholly scrapped. Creative potential emerges between humans and their environments, as both continually, radically, and powerfully shape the other. Arguing, for example, that the cultural norms encoded in digital authoring systems, which have predominantly emerged from western countries, are colonizing the means of production is partially true. Accessibility is determined through standards envisioned by capitalistic corporations from the west. However, it is difficult to label particular media systems as western/colonial when local appropriations bypass, rework, embrace, co-opt, remix and consume many of these systems and signifiers as infrastructure for local design meanings. Take for example the work of the artist Loyiso Mkize, who was among one of the biggest inspirations for the jammers. Wright has argued that Mkize's comic book hero "Kwezi" for example, is not merely an appropriation of American popular culture, but rather contributes

postmodern and "syncretic adaptations of the genre for local cultures" (Wright 2017). In Wright's discourse analysis of the comic, he argues that Mkize's work appropriates the archetypes of typical superhero narratives and aesthetics to "disaggregate contemporary black identity into a variety of different dispositions and suggest the contestations, divisions, and tensions within it" (Wright 2017). Menzi appropriated, for example, the Johnnie Walker logo to bend the significance of his pedestrian status, forging his own creative meanings in response to the meanings embedded in these sign systems. Kuhle exploited the features of Instagram to connect her local fashion identity to a broader world of Cape Town fashion. Neo appropriated video tutorials into his own media ecology to learn. Yonela combined free editing apps and her selfies to produce herself as a site for Afropolitan identity – a mishmash of cultural roots, extending into the global mediasphere. As Nyamnjoh offers, western media offer sites for the traditionalizing of modernity, but also the modernizing of tradition (Nyamnjoh 2008). Onwaba appropriated free editing applications, chat messengers and pirated software to patch together a marketing and distribution system, that instead of submitting to the colonizing force of increased digitization (Star and Bowker 2006), poses a paranodal other to the logic of the network (Mejias 2013).

Smart mobile devices are among the most powerful creative, expressive and communicative tools that young creatives have at their disposal, and are actively contributing to emerging South African visual and cultural identities. These intersections are a crucial sites for increased research and development. In the conclusion, I return to this thread and suggest possible directions for future research and implications for design. First, I revisit the questions that I set out to answer at the beginning of this dissertation.

**How do aspiring creatives appropriate digital technologies, particularly mobile devices, as infrastructure for creative practices?**

I have complicated the concept of "creative practices" as broad descriptor, drawing attention to the fact that practices are diverse, tied to particular technologies, spaces, people, conventions and tastes that form amorphous and dynamic creative worlds. From such a vantage point, what might be vital infrastructure (Star and Bowker 2006) for some creative practices does not support others.

I have also demonstrated how for many poor and working class young people, the intersections of creativity and digital technologies firmly revolved around their access to mobile devices. These devices offered a means to produce, access, share, and store media. Here, mobile devices became the "habitual setting for practice" (McCullough 1998, 192-193). Thus, off campus, mobile devices were often the only, or most accessible, technologies for them to appropriate creatively.

Mobile cameras in particular played an integral role in affording these young people the ability to forge their own creative representations, to reify and "congeal" their personal experiences into "thingness" (Wenger 1998) and express "voice" (Burgess 2006). Examples included the creation of self-portraits, memes, decorated and composited mobile artworks, and the documentation of analog drawings. In all of the cases I've discussed in this thesis, these creative artifacts were created, stored and shared in a context of digital frugality. Mobile storage was severely limited and sharing could only happen if both the sender and receiver could afford the data to communicate or share their files. Media were grabbed in patches and snippets, and multiple applications were used in tandem to forge creative work and participation in social worlds. Enterprises included the exchange of creative goods for money, where innovative new distribution systems were infrastructured by low-cost chat networks and connected human resources.

In other cases young people went online at public access venues, grabbing (Senft and Baym 2015) digital takeaways and distributing these on a pavement internet (Walton 2014) to offset data costs and shape these media snippets to better suit their embodied infrastructure (as in Neo's case). Instead of vast networks with flows of data that connect infinite nodes, these creatives experienced the web and digital media as an assemblage of technologies and tariffs for mobile data. In this sense, these media-related practices were more patchworked than networked. These sharing and distributing practices pose a paranodal other to the nodocentric logic (Mejias 2013) of platforms such as Facebook, Instagram or Behance.

The applications and software that young people used to author and distribute their creations also had to comply with their thrifty strategies. This meant that these young people's palettes were very limited – consisting of free applications, and low-cost chat services such as WhatsApp. Many of the applications that participants used to create and

distribute their digital media were built around the monetization of global social and communicative practices, and offered interfaces and visual discourses that encoded cultural norms. The visual designs that kasi creatives wanted to produce during the jam demonstrated significant desires to express their own realities, experiences, stories and visual cultures in their creative practices. Yet creatives had to use these second-hand media resources (Nyamnjoh 2008) to forge their own semiotic meanings. Thus, as a creative jam demonstrated, creativity emerged through a process of bricolage – where many applications and built-in mobile functions were appropriated and patched together to produce images that captured the intended communicative designs of jammers. Jammers also played off of the second-hand resources; co-opting, remixing and extending their meanings as part of their creative infrastructure.

Yet, the creative communities of practice (Wenger 2000) that these young people had access to were severely limited and few of these young people reported active participation in any creative worlds where they could form identities as designers through legitimate peripheral participation (Lave and Wenger 1991). Thus, in lieu of such communities, university was among the only options that these aspiring creatives had to turn their interests into careers.

**How do these practices change within the university context, and relate to professional creative worlds?**

When these same creatives enter university, their creative practices changed in relation to a set of new technologies. In order to become legitimized at university, creatives had to use technical infrastructure that conformed to particular standards, which shaped their discursive and work practices.

Typically this involved a new repertoire of skills that revolved around specialist materials, hardware, software, platforms and conventions. For many students, few of the skills that they used outside of the university offered any valuable currency within the university. Instead, these students were often framed through a deficit discourse where they were marked through their need to be "caught up" (Arnott 2010) on the correct way of being, doing and knowing that corresponded to standards in industry.

However, for many of the kasi creatives these standards were difficult to embody – especially as few of them had the economic means to keep up with the material demands

of participating in class projects. In such cases these institutions were alienating, and seen as places where their ways of knowing and being were stigmatized and perceived as lesser.

At the same time many young people who had already established their own creative projects prior to their university enrolment, co-opted the newly available infrastructures to extend their practices. In such cases, porting their own practices to these new technologies and platforms drew their creative worlds closer to established creative worlds. In turn, many of their creative practices began to intersect with lucrative opportunities. But when these students left the university campuses during holidays, they were unable to generate these valuable creative artefacts without the necessary spectrum of materials. These tensions demonstrate how a very particular range of infrastructure is necessary to connect aspiring designers to the creative worlds of professional design.

**What research methods can be used to supplement classroom ethnography and understand the creative practices and the materialities of these young people?**

As argued in the previous chapter, I had great difficulty in observing processes of mobile creativity as these were typically not undertaken in the classes where my research took place. These creativities were also intimate – and difficult to observe under normal circumstances. While I paid a great deal of attention to visual artifacts produced on mobile, these digital objects only revealed part of the story – that which *was* created, and not how that which came to be, came to be.

In this thesis I suggested that observing such practices can be done through structured improvisation in a creative jam. Taking cues from Ingold's formulation of creativity, I approached the creative process as something that is always in motion, with all senses continually in play, through the relationship between body and resources. In my personal experience facilitating such a session came down to simply setting aside a set time for participants and myself to hang out and jam on creative projects together. Employing decisive constraints allowed us draw focus to mobile-based creativity in particular.

Taking cues from musical improvisation and game jams, I organized an environment where we could play off each other, without any structure or end-goals and see what emerged. As Ingold argued, there is no prepared script for the cultural sites of creativity (Ingold and Hallam 2007) – we make sense as we go along. From this perspecive, researchers can better uncover embodied creativity by *experiencing* the process and

*improvising* as they go along. Jamming was useful in foregrounding the material and embodied processes of creativity from conception to completion.

**Contributions and recommendations for future research**

In this dissertation, I have made two distinct contributions. Firstly, I offered empirical case studies that flesh out studies of creativity, digital technologies and young people from resource-constrained contexts in Cape Town, South Africa. Such accounts have complicated a discourse of democratization, revealing dynamism in the mutual, yet asymmetrical, constitution of infrastructure and practice. Tensions emerged around issues of agency, empowerment and forces that control.

Secondly, I have provided an example of how jamming can be used as a generative method for situated and embodied creative research. This method has provided rich data, provided the foundation for future relationships and collaborations, and served to better articulate my research goals to and with participants. While it is difficult to provide prescriptive delineations of how such a jam should be conducted, I have demonstrated how the basic mechanics of such an exploratory, collaborative and reciprocal research undertaking could work. My recommendation is that creative jams should be guided by principles of improvisation, collaboration, openness and reciprocity.

The themes that I have explored in this thesis provide first steps for diverse applications in research and development. Among these, research into young design graduates from resource-constrained contexts would be useful analogue to this study. Additional scholarly focus on the role of digital technologies in creative practice is imperative in infrastructuring a more culturally inclusive and creatively dynamic population of designers, artists, media makers and creatives of all kinds. Documentation of existing practices is also paramount as African design is an understudied and emergent field, which could benefit from diverse scholarship and expertise.

In addition, further research in the interfaces of digital systems could provide a useful starting point for computer scientists, human-computer-interaction scholars, and participatory designers. Those in the fields of technological innovation might find useful cues for development in this dissertation. I suggest that such work focus on the development of new authoring systems. Such applications might provide young people with extended discourses from which to produce their creative work, which reflect local

and situated aesthetics, styles and meanings. In tandem, such inventions could also take into consideration the potential of alternatively configured creative worlds and consider how mobile devices could provide infrastructure for participants to connect, learn, discover and accomplish their goals.

As this work took place within the context of an institution the findings presented here might be of use to those who teach design or arts in any capacity in South Africa. In his radical manifesto "Design for the real world" the design theorist Viktor Papanek argued that design schools globally were doing both their students and their environments a disservice by perpetuating an education which centred around standardized design methods, tools and cultures - which he exemplifies through the constant regurgitation of the Bauhaus design theories for all introductory courses in design (Papanek 1972). Instead, Papanek argued that educators should allow their students to "design for the real world", starting with the problems that are most familiar to them. While the practicalities of preparing students for careers in design disciplines are matters far beyond the scope of this dissertation, the case studies provided here present a provocation for educators.

And lastly, this thesis has underlined the importance of physical spaces and material resources that offer habitual places of practice for young creatives. While a fully realized and equally distributed formal primary and secondary school education in (decolonial) arts and design is still the first prize, this thesis has demonstrated that creativities can flourish beyond the classroom. In this regard, I advocate for a renewed focus on the establishment of community arts centres, and other places which provide infrastructure for young people to come together, hang out, envision, dream and patch together the visual cultures, industries and creative worlds of a South African future.

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# APPENDICES

## APPENDIX A: RESEARCH ACTIVITIES

| | Date | Location | Activities | Participants | Time |
|---|---|---|---|---|---|
| 1. | 27/01/2013 | ICT4D centre | Meeting with aspiring creative applying for ECP in 2014 | M270113 | 10:00 – 13:00 |
| 2. | 29/04/2013 | Frank Joubert Art Centre | Pilot meeting | Head of Art school | 14:00 – 17:00 |
| 3. | 03/05/2013 | Zonnebloem Nest High School | Pilot meeting | Headmaster and head of arts program | 11:00-12:30 |
| 4. | 09/05/2013 | Frank Joubert Art Centre | Interview: head of school, and introduction to students participating in art show | N130513, S060613 | 12:00 – 17:00 |
| 5. | 13/05/2013 | Frank Joubert Art Centre | Interview: student | N130513 | 13:00 – 15:30 |
| 6. | 17/05/2013 | Zonnebloem Nest High School | Participant observation of art class | Grade 11 class: 33 students | 10:00 – 12:00 |
| 7. | 03/06/2013 | Frank Joubert Art Centre | Interview: Centre student | F030613 | 14:00 – 15:30 |
| 8. | 06/06/2013 | Frank Joubert Art Centre | Interview: ECP student | P060613 | 13:30 – 15:30 |
| 9. | 06/06/2013 | Frank Joubert Art Centre | Interview: ECP student | S060613 | 16:00 – 17:30 |
| 10. | 12/06/2013 | ECP class 1 | Interview: ECP student | F120613 | 14:00 – 15:30 |
| 11. | 06/03/2014 | ECP class 1 | Pilot meeting with lecturer, and Class Participant observation | MA01, 27 students | 09:00 – 15:30 |
| 12. | 07/03/2014 | ECP class 2 | Pilot meeting with lecturer, and Class Participant observation | A02, 35 students | 09:00 – 12:30 |
| 13. | 07/03/2014 | ECP class 2 | Interview: lecturer | A02 | 13:00 – 16:00 |
| 14. | 10/03/2014 | ECP class 1 | Participant observation | 27 ECP students | 09:00 – 15:00 |
| 15. | 11/03/2014 | ECP class 2 | Informal interview: ECP student | M270113 | 15:30 – 18:00 |
| 16. | 12/03/2014 | ECP class 1 | Participant observation | 35 ECP students | 08:30 – 11:00 |
| 17. | 17/03/2014 | ECP class 1 | Participant observation and informal interview with lecturers | 27 ECP students, MA01, D01, MO01 | 11:00 – 14:00 |
| 18. | 03/04/2014 | ECP class 2 | Participant Observation | 35 ECP students, A02, L02 | 09:00 – 11:00 |
| 19. | 03/04/2014 | ECP class 2 | Interview: student | O030414 | 13:00 – 15:00 |
| 20. | 07/04/2014 | ECP class 1 | Participant observation & informal interviews | Class01, W01, D01, M01 (lecturers) | 09:00 – 11:00 |
| 21. | 08/04/2014 | ECP class 1 | Participant observation & informal interviews with lecturers | Class01, M01 | 08:30 – 11:30 |
| 22. | 14/04/2014 | ECP class 2 | Participant observation & informal interviews with lecturers | Class 02, A02, L02 | 08:30 – 12:30 |
| 23. | 22/04/2014 | ECP class 1 | Participants observation, and informal interview with lecturers | Class 01, W01, O01, N01, M01, D01 | 08:30 – 14:30 |
| 24. | 23/04/2014 | ECP class 1 | Participant Observation & Informal interviews | S120514, R060514 | 08:30 – 12:30 |
| 25. | 24/04/2014 | Student Residence | Informal Interview | R060514 | 16:00 – 17:45 |
| 26. | 06/05/2014 | ECP class 1 | Participant Observation | 16 students during studio time | 11:00 – 13:00 |
| 27. | 06/05/2014 | ECP class 1 | Interview: student | Q060514 | 13:00 – 14:45 |
| 28. | 07/05/2014 | ECP class 1 | Participant Observation | 20 students during studio time | 14:00 – 16:00 |
| 29. | 08/05/2014 | ECP class 1 | Interview: student | L080514 | 14:00 – 16:00 |
| 30. | 12/05/2014 | ECP class 1 | Participant Observation and interview: lecturer and 1 student | 10 students, W01, S120514 | 13:00 – 17:30 |
| 31. | 13/05/2014 | ECP class 1 | Interview: 2 students | I130514, S130514 | 13:00 – 16:45 |
| 32. | 20/05/2014 | ICT4D centre | Supervision meeting | Meeting with 3 Computer Science Honours students who will develop app. We work on propotype sketches based on "missing app" segment of interviews conducted thusfar. | 11:00 – 12:45 |

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| 33. | 22/05/2014 | ECP class 1 | Interview: 2 students | P220514, J220514 | 11:00 – 16:00 |
| 34. | 23/05/2014 | Long Street, Cape Town | Informal Interview | J220514 | |
| 35. | 26/05/2014 | ECP class 1 | Interview: lecturer | D260514 | 13:00 – 15:30 |
| 36. | 27/05/2014 | ECP class 1 | Interview: student | Y270514 | 14:00 – 15:15 |
| 37. | 02/06/2014 | ECP class 1 | Interview: student | K020614 | 14:00 – 15:30 |
| 38. | 03/06/2014 | ECP class 1 | Interview: student | L030614 | 14:00 – 16:00 |
| 39. | 04/06/2014 | Various locations | Informal Interview during shopping excursion | L030614, D260514 | 16:00 – 17:30 |
| 40. | 05/06/2014 | ICT4D centre | Supervision meeting | Meeting with ComSci Honours students. Refining concepts for potential app development | 10:00 – 12:30 |
| 41. | 09/06/2014 | ECP class 1 | Interview: 3 students | J090614, L090614, R090614 | 11:00 – 16:00 |
| 42. | 11/06/2014 | ECP class 2 | Recruit Jam participants, informal interview | 15 students, Q20140506, B20140904, S20140902 | 15:00 – 16:00 |
| 43. | 12/06/2014 | ECP class 1 | Recruit Jam participants | 10 students | 12:00 – 13:00 |
| 44. | 20/06/2014 | My home in Mowbray | Consult with two ECP student collaborators before creative jam commences | O030414, M270113 | 10:00 – 15:00 |
| 45. | 27/06/2014 | ICT4D centre | Meeting with student collaborator | M270113 | 09:00 – 15:30 |
| 46. | 01/07/2014 | Coffee Shop, Constantia | Meeting with course convenor for ECP class 1 to debrief | MA01 | 10:30 – 12:30 |
| 47. | 01/07/2014 | Coffee Shop, Garden Centre | Meeting with post-graduate design student at Field Site 1 | S010714 | 13:30 – 15:30 |
| 48. | 03/07/2014 | ICT4D centre | Interview: student (with translator) | L030714 | 12:00 – 14:00 |
| 49. | 07/07/2014 | My home, Mowbray | Creative Jam: Day 1 (3 ECP students, myself, 3 creative professionals) | M270113, O030414, L030714,Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | 09:00 – 18:00 |
| 50. | 08/07/2014 | My home, Mowbray | Creative Jam: Day 2 (4 ECP students, myself, 3 creative professionals) | M270113, O030414, D070714, L030714, Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | |
| 51. | 09/07/2014 | My home, Mowbray | Creative Jam: Day 3 (4 ECP students, myself, 3 creative professionals) | M270113, O030414, D070714, L030714, Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | |
| 52. | 14/07/2014 | My home, Mowbray | Creative Jam: Day 4 (4 ECP students, myself, 3 creative professionals) | M270113, O030414, D070714, L030714, Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | |
| 53. | 15/07/2014 | My home, Mowbray | Creative Jam: Day 5 (4 ECP students, myself, 3 creative professionals) | M270113, O030414, D070714, L030714, Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | |
| 54. | 16/07/2014 | My home, Mowbray | Creative Jam: Day 6 (4 ECP students, myself, 3 creative professionals) | M270113, O030414, D070714, L030714, Anja Venter, Ben Rausch, Jason Sutherland, Jamie Dimitra Ashton | |
| 55. | 04/08/2014 | ECP class 2 | Interview: Class convener, chat about accepting new students for 2015 | A02 | 12:00 – 14:00 |
| 56. | 05/08/2014 | ICT4D centre | Supervision meeting: honours students | 3 Honours students, Edwin Blake | 11:00 – 12:00 |
| 57. | 11/08/2014 | ECP class 2 | Participant Observation | 30 students | 12:00 – 16:00 |
| 58. | 12/08/2014 | ECP class 2 | Interview: Creative Jam participant | D070714 | 14:00 – 16:00 |
| 59. | 14/08/2014 | ECP class 2 | Participant Observation and Interview: student | 30 students during studio time, N140814 | 10:00 – 16:00 |
| 60. | 15/08/2014 | ECP class 2 | Interview: student | O150814 | 12:00 – 14:00 |
| 61. | 18/08/2014 | ECP class 2 | Participant Observation | 30 students | 09:00 – 14:30 |
| 62. | 21/08/2014 | ECP class 2 | Participant Observation | 20 students | 14:00 – 16:00 |
| 63. | 02/09/2014 | ICT4D | Supervision meeting: student | Discussing the vector-based app | 10:00 – 11:30 |
| 64. | 02/09/2014 | ECP class 2 | Interview: student | M020914 | 14:00 – 16:00 |

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|---|---|---|---|---|---|
| 65. | 04/09/2014 | ICT4D | Supervision meeting | All Honours Students working on MobivisApp and MobiVecApp | 11:00 – 12:00 |
| 66. | 04/09/2014 | ECP class 2 | Interview: student | S040914 | 14:00 – 17:00 |
| 67. | 08/09/2014 | ICT4D | Participatory Design Workshop | Q060514, Y270514, O150814, N161014, M270113 | 08:30 – 17:30 |
| 68. | 09/09/2014 | ICT4D & Mendi Lab | Participatory Design Workshop & User Testing Workshop | Q060514, Y270514, O150814, N161014, M270113 | 08:30 – 17:30 |
| 69. | 10/09/2014 | ICT4D | Supervision meeting | All Honours Students debriefing after PD workshops | 14:00 – 17:00 |
| 70. | 12/09/2014 | ICT4D | Supervision meeting | All Honours Students feedback on prototypes | 11:00 – 12:00 |
| 71. | 16/09/2014 | ICT4D | Supervision meeting | Prototype overview | 09:00 – 10:00 |
| 72. | 25/09/2014 | ICT4D | Supervision meeting | Feedback on Prototypes | 14:00 – 15:00 |
| 73. | 03/10/2014 | ECP class 2 | User Testing Session with 5 students | D070714, O150814, N161014, M270113, S141014 | 12:00 – 17:00 |
| 74. | 13/10/2014 | ECP class 2 | Interview: 3 students | A131014, L131014, M131014 | 09:00 – 16:00 |
| 75. | 14/10/2014 | ECP class 2 | Interview: 3 students | A141014, H141014, S141014 | 09:00 – 16:00 |
| 76. | 15/10/2014 | ECP class 2 | Interviews: 2 students | K151014, M151014 | 10:00 – 14:00 |
| 77. | 16/10/2014 | ECP class 2 | Interviews: 2 students | W161014, M161014 | 09:30 – 14:00 |
| 78. | 07/11/2014 | ECP class 2 | Interview with lecturers ECP 2 | A02, M02 | 10:00 – 12:00 |
| 79. | 11/11/2014 | ICT4D | Informal Interview ECP 2 student | M270113 | 14:00 – 17:30 |
| 80. | 18/11/2014 | Public Talk, Cape Town | Informal Interview ECP 2 student | M270113 | 19:00 – 21:00 |
| 81. | 11/12/2014 | My home, Mowbray | Informal interview and Hang out | M270113, N161014 | 13:00 – 22:00 |
| 82. | 15/12/2014 | Art Exhibition, Cape Town | Informal interview and Hang out | M270113, N161014, L131014, Y270514 | 18:00 – 20:00 |
| 83. | 25/01/2015 | Café, Cape Town | Interview with User Interaction Designer about Molio wireframes | Jana Schoeman, Andrew Mori | 14:00 – 16:00 |
| 84. | 26/01/2015 | Participant's home, Gugulethu | Follow up about wireframes | M270113, N161014 | 11:00 – 15:00 |
| 85. | 03/03/2015 | ICT4D | Refining wireframes, meeting with participants | M270113, N161014, Y270514 | 10:00 – 14:00 |
| 86. | 01/03/2016 | Mowbray | Informal group interview | 20140602KN, 20140814NM, 20130127MG, 20140403OO, | 15:00 – 19:00 |

# APPENDIX B: INTERVIEW QUESTIONS

***Demographics***

1. What is your full name?
2. How old are you?
3. What do you do?
4. Do you know much of your family's history? Where do you come from?
5. Have you lived here your whole life?
6. What do your parents do?
7. Where do they live?
8. Do you have any siblings? What do they do?
9. Tell me about your best friends…what do they do?
10. Do you have many friends in the creative industry?
11. Are you like your family and friends? What makes you different to the people around you?
12. What is your first language?
13. What other languages do you speak?
14. What are your hobbies, what do you enjoy doing?
15. Physically, what spaces do you frequent on a weekly basis? (home, school, clubs, sports, friends' houses) *note location of each
16. How do you travel between these spaces? What modes of transport do you use? How much does it cost?
17. What are your dreams for the future? Where do you imagine yourself?

**Education and access**

18. What schools did you go to?
19. Did your school have a computer lab? How often did you use it?
20. Did your school have a library? How often did you use it?
21. Did your school have an arts program? Did you study art? If so, what art subjects did you have? What other subjects did you have?
22. Did you ever use your mobile phone to help you with school or university projects? How?
23. When did you decide that you wanted to follow your chosen career?
24. WHY [this university]? How did you hear about it?
25. Are you on scholarship/loan/plan? Which one?
26. Do you think your knowledge of digital media helped/hindered you?

**Cape Town**

27. Cape Town has been chosen as the world design capital for 2014. This is quite a big honour, but I would like to know from you if you think there are enough opportunities for creatives in Cape Town?
28. Do you know any creative in Cape Town in the industry?
29. Did you ever struggle to follow your dream? Why?
30. how did you "get into" image making/design/creative industry?
31. Are there people who help you with image creation?
32. Tell me about friends, family, etc. who have helped you along the way.

[Draw mindmap]

**Name each person, and how they've helped you, what was the mode of communication/contact**

33. Do you think that it's easier for those with lots of money to follow a creative career? Why?
34. How do you create? What tools do you use and what different outputs do you gain from each of these tools?

[Draw mindmap]

**Probes:**

How do you composit images? What physical tools and what digital tools do you use? Which do you use more often? What software do you use for projects? How did you obtain these programs/items? What do they allow you to do?

35. What has been the most difficult part of studying this course?
36. Do you feel that you belong here?
37. How are you managing with the skills?
38. How did the first examination go? Did you think this was a fair marking?
39. What do you think of the lecturers? Who is your favourite? Do you dislike anyone? The way anyone teaches? Any woes? Worries? Fears?
40. Do you feel supported in your studies? Are lecturers available to help you with issues that arise?
41. Do you ever struggle to afford the tools you need to create art/design/visual artefacts? Probes: have you ever not been able to create something in the way you envisaged because you couldn't obtain the tools to make it? Tell me about it.
42. What institutions have you encountered in Cape Town that have helped or influenced you? How have they done this? How did you hear about them? Where did you first encounter them?
43. What can the lecturers do to make the course better for you?
44. Do you have any online resources of lectures/lessons/expectations/FAQ?
45. Would you use a Facebook group, if the lecturers set one up?
46. Would you feel that is an invasion of privacy? How would you feel if lecturers went onto your Facebook right now?

***Personal ecology***

47. Do you have frequent access to your own or someone else's computer? (what kind of computer? when? How? Elaborate?)
48. Is it connected to the internet?
49. How often do you go online?
50. How has your internet access changes since starting at the university?
51. What do you do online?
52. Do you have any creative websites you like visiting? Which ones? What do you enjoy about them?
53. Do you find any design inspiration or resources online that help you with your creative process?
54. Are you on any social networks? Elaborate. Mxit, Facebook, twitter – do you share any of your creative works on these? With who? How do you upload these?
55. What groups are you a part of? Do you and your friends have any WhatsApp/Facebook/etc groups? What kind of things do you share?
56. Do you have an "online name" – why is this your name? whats the story? Do you think you can have a different persona online?
57. When did you receive your first mobile phone?
58. What model phone do you have now?
59. How much storage does it have?
60. What does your phone say about you?
61. What are the rules for phone usage in class?

62. Do you like it? Dislike it? Why?
63. What applications do you most frequently use on your phone, and for what? [draw mindmap] – each program, and use
64. Do you take selfies? Why do you think this have become such a phenomena?
65. What do selfies mean to you and your own sense or representation?
66. What applications do you use for visual creation purposes?

[Draw mindmap]

**Probes:**

67. Do you create images on your phone? (mention photographs, any visual expressions)
68. How do you share your images? (Do you post them on social networks, mail, sms, mms, mxit, etc.)
69. Do you use any of the visual design programs online or on the computer to create designs/art/gifts for friends?
70. Which ones?
71. Who do you share them with?
72. When was the last time you sent someone an image that you authored? Photograph/edited photograph/artwork. Can you show me?
73. Why do you share your images?
74. Can you show me? What is the thing on your mobile phone that you've created, that you are most proud of?
75. What would your ultimate phone be? And why?
76. How many phones have you had in your life?
77. How did you get them? Buy, borrow, handed down, etc. any stories of getting a new phone?
78. How much airtime do you use in a week? How do you use this? On data?calls?SMS?
79. Do you think "having the right phone" is important for your social life? Why?
80. Where do you store all of your images? Do you have a hard drive, flash drive, computer, mobile phone, memory card, etc…
81. What do you do when your phone/computer is stolen?
    - Are those files anywhere else?
    - Has this ever happened to you?
    - What did you do?
82. Has your phone ever helped you with your education/profession/jobs?
83. Can you use your phone anywhere? Do you ever feel like there is a situation where you couldn't take out your phone? Where do you most often use your phone?
84. Have any of your phones ever been stolen? Tell me about it.

***App development***

85. Do you think that you could live without any computers, and just use your mobile device? (why?)
86. (what would your device need for it to be like that?)
87. Do you think making digital versions or digital copies helps the creative? How? Has it ever helped *you*?
88. Do you know any creative work social networks like behance or deviant art?
89. Have you ever used these? (if no, explain what they are)
90. Does that sound like something you would use?
91. Do you know of any other ways people network with their visual creations online?
92. If there was a local art-centred social network for your phone would you use it?
93. What would you hope to gain from it? Why is that appealing?
94. Have you ever had to make a CV? How did you do this?
95. Do you have a portfolio that promotes your art/design/manifestation?

96. How did you make it?
97. Is it available for people to see?
98. If you could have any program on your phone that would help with your creative process or for professional networking, what would it be? What would it do? How would it work? Use your imagination!

APPENDIX C: BRIEF FOR HONOURS STUDENTS

HONOURS PROJECTS OFFERED 2014

**Project : A mobile visual design application for entry-level smartphones**
**Proposer:** Edwin Blake
**Abbreviation:** mobvisap
**Brief Description:**
Design and build an application for a mobile device which allows small and micro entrepreneurs to create printed and digital visual materials, and generate branding (e.g., Logos) for a social media presence (Facebook Page, Multimedia Messaging (MMS), BlackBerry Messenger (BBM), WhatsApp).
Creative disciplines are fundamentally involved with digital media in the world today - creative software, social networks and mobile interfaces pervade formal and informal creative practices globally: enabling bedrooms or garages to become micro- recording studios, fashion houses or advertising agencies, to name a few.
Our recent research shows how aspiring creative people overcome constraints to produce, market and network their creative media on mobile phones: a fringe network of free applications, low data costs, Bluetooth sharing, and real world communities which are seldom taken into account in the design of creative applications.
This project will encompass the development of a micro-branding application for lower-end touch screen phones within the bounds of these resource constraints. This project will be split between team members and will include building
basic image and text compositing tools
a logo builder, including a vector drawing tool
include design templates (e.g., Facebook cover page, profile pic, mobile ad)
export to various image sizes for social media sharing and if possible, printing
This is part of a larger Nokia/Microsoft research initiative for visual design on mobile, exceptional work may be taken further or considered for inclusion in publication
Computer Science Content: This project falls in the ICT4D sphere where the challenges are both technical and HCI related. Technically the challenge is to make responsive apps for things like vector drawing and image manipulation on a phone. There are also HCI issues related to design and usability of the mobile interface.
Specific Learning Outcomes: mobile programming and performance measurement, user experiment design, visual design.
Skills Required by Team as a Whole: This project requires a diverse team with both mobile programming and HCI skills.

- Theory: Android Programming, Visualization and 2D graphics, HCI, Experience in vector drawing and graphic design is a plus
- Implementation: This project will include mobile programming and some graphic design concepts that might be unfamiliar. Assistance will be available.
- Other: Similar software might exist for more sophisticated hardware, the challenge is to simplify these and present an appropriate interface for a lower-end mobile device and mobile-primary end-user

Facilities needed: Android mobile phones, access to users

Supervision: You will join in activities of the interdisciplinary ICT4D centre. You will have access to mobile programming expertise and will be co-supervised by Dr Marion Walton (Media Studies) and Anja Venter (PhD student and experienced graphic designer). Please see http://www.cs.uct.ac.za/~edwin/honsProj.html for more details.
Number of Students: 2 or 3 (4 possible depending on the scope tackled)
**Project : Vector Variations**
**Proposer:** Edwin Blake
**Abbreviation:** mobivect
**Brief Description:** *Vector art creator for entry-level smartphones*
This project concerns different ways of tackling the problem of producing vector drawings on a smartphone. It is related to our "A mobile visual design application for entry-level smartphones" (mobvisap) project but focuses exclusively on different ways of tackling the important issue of creating vector illustrations. Our recent research show how young people from resource-constrained settings are increasingly using their mobile phones to create and share visual creations – combining elements from their mobile cameras, free in-phone editors, type, and clip art libraries. These young people are finely negotiating the limited capabilities of mobile phones for the purposes of self-expression.
The approaches can be quite independent parts of the project and include:
drawing directly on HTML5 canvas with a command line type interface, taking a photo of a paper drawing and tracing over it . Drawing directly on an interactive phone app

Option 1 can also be supported by drawing tools. The advantage with this option is that it is a web-based approach, which removes platform dependencies.
For Option 2 you will design and build an application for an entry-level smart phone that allows users to transform mobile phone photographs of drawn elements into editable vector objects.
Option 3 (and perhaps 2) will require a pointing device linked to the phone (such as a Bluetooth mouse).
Further common requirements for the options listed above include:

- A tool which can effectively "cut out" illustrations and add transparent background, for the purposes of overlaying these in other compositions.
- A selection of editing tools for vector fine-tuning: isolating and editing curves or lines; dragging anchors and using control handles, rotate and scale
- Exporting these vector elements into library sets

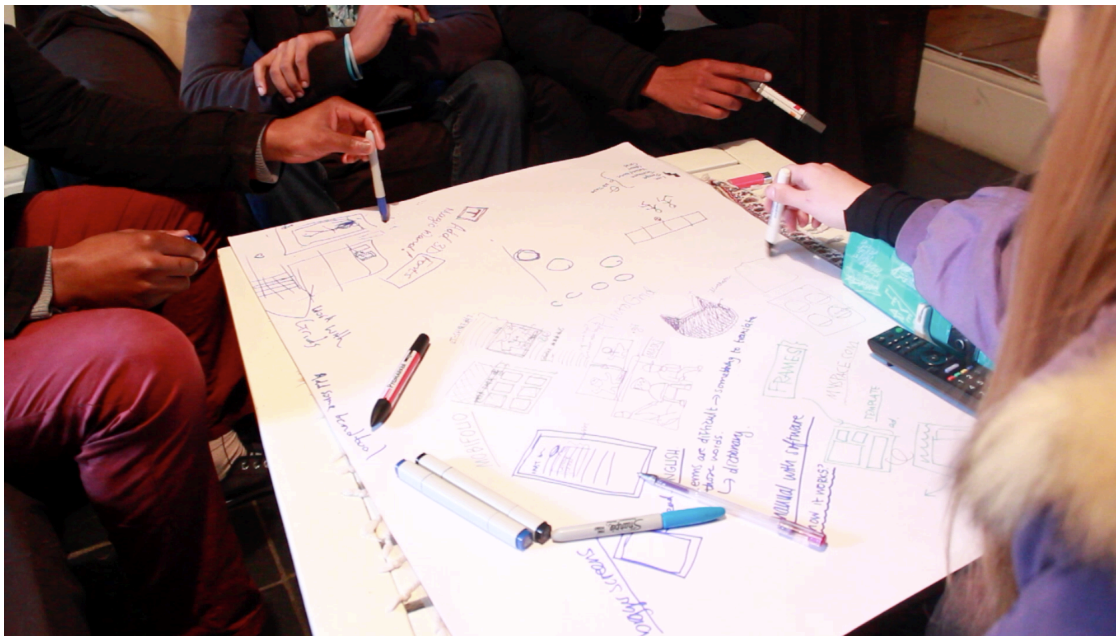
This is part of a larger Nokia/Microsoft research initiative for visual design on mobile, exceptional work may be taken further or considered for inclusion in publication.
Computer Science Content: This project falls in the ICT4D sphere where the challenges are both technical and HCI related. Technically the challenge is to make responsive apps for things like vector drawing and manipulation on a phone. There are also HCI issues related to design and usability of the mobile interface.
Specific Learning Outcomes: mobile programming and performance measurement, visual design. In this project user experiments are optional and heuristic (expert) evaluations may suffice..
Skills Required by Team as a Whole: This project requires a diverse team with both mobile programming and HCI skills.

- Theory: Android, or HTML and javacript, Programming; Visualization and 2D graphics; HCI; Experience in vector drawing and graphic design is a plus.
- Implementation: This project will include mobile programming and some graphic design concepts that might be unfamiliar. Assistance will be available.

- Other: Similar software might exist for more sophisticated hardware, the challenge is to simplify these and present an appropriate interface for a lower-end mobile device and mobile-primary end-user

Facilities needed: Android mobile phones, access to users
Supervision: You will join in activities of the interdisciplinary ICT4D centre. You will have access to mobile programming expertise and will be co-supervised by Dr Marion Walton (Media Studies) and Anja Venter (PhD student and experienced graphic designer). Please see http://www.cs.uct.ac.za/~edwin/honsProj.html for more details.

# APPENDIX D: PAPER PROTOTYPES FOR APPS



*The Missing App*

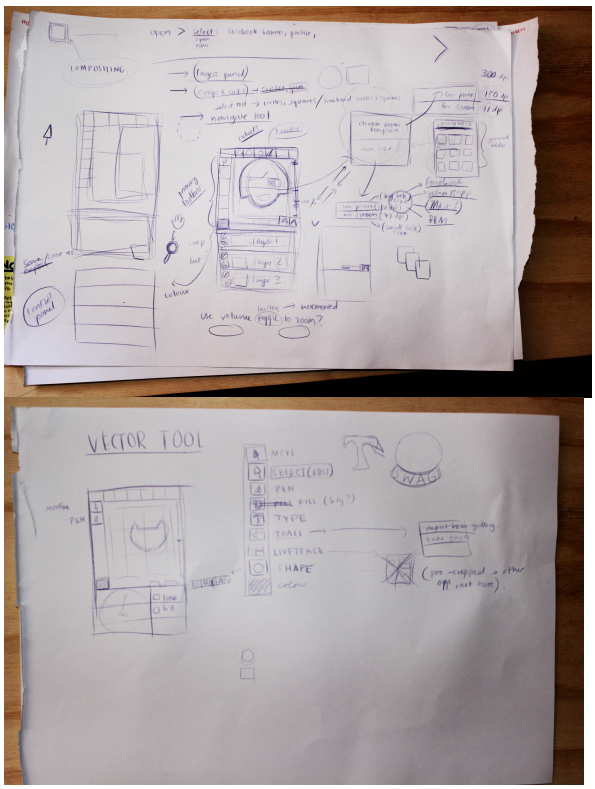
In order to make sense of the kinds of tools that were available on mobile versus those that were available on laptops we sat around a large piece of poster board and visualized the differences. Although the jammers identified the big obstacle of screen size for design on mobile, they feel that this wasn't something that neccesarily bothered them when they were younger, *"Only once you work on the laptop all the time, then it becomes difficult…"* was Menzi's opinion. For Lunga, a similar logic prevailed, although, for him, this was much more related to the dominant mode of display, "When you just have a phone, then you only see images on the phone. So you don't see that thing must be big. Like with Bongani's brand, you can see everything on the screen. It's better, you design it for that screen, and people see it on that screen. Only when you want to be a professional designer, I think then it is a problem." The guys felt that a lot could be simplified for mobile designs.

For the participants, for mobile to provide a more open and free design experience they identified the need for a number of basic features:

- *layered design features*

- *expanded drawing features*: with pressure sensitivity on lines and opacity settings for shading
- *live trace*: to transform big bitmap images to small vector images
- ability to *import fonts* from the internet (as .otf or .tff)
- ability to save out (and share) *vectors* to be used in future compositions (as .svg)
- ability to save out *layers as pngs* with alpha channels
- ability to define the *canvass size* for print or web

Based on this session I produced more in-depth scamps for the design of such a mobile app.




(These designs were then given to a group of Honours students to develop. Unfortunately the app that was produced was of very low quality.)

*Molio – a social network*

However, some of the biggest findings from the participants was their call for a community aspect to the design process:

Menzi recognized my role as mentor over the six day period,

> *"You see, I can sit here…and I can say, 'Anja, how do I do this?'…I couldn't do that when I was young. Maybe I can find someone to ask…but not then…not when I'm busy with drawing or designing on my phone. You have the answers, but I can't always be able to ask you for those answers."*

For Lunga, it was his unfettered access to tutorials and online sources on inspiration that facilitated this creative process,

> *"I think…okay, I can't do this…I don't know how…Then I can Google it, and maybe there is such a tutorial. Or I feel…hmmm…I don't know what to do now. And then, like, you told us about Behance…So I take a look there. And then I can find inspiration."*

Although the focus of the workshops was not on this aspect of the creative process, we sat and thought of what such an app might look like. The guys immediately considered already existing apps that they used. But felt that nothing, as it existed, could meet the requirements of a creative networking app in South Africa.

*Bongani:* *But, I really like Instagram. It is very simple.*

*Anja:* *Isn't it very data heavy?*

*Bongani:* *Oh ja…it's hectic. You can't look at many pictures unless you have wifi.*

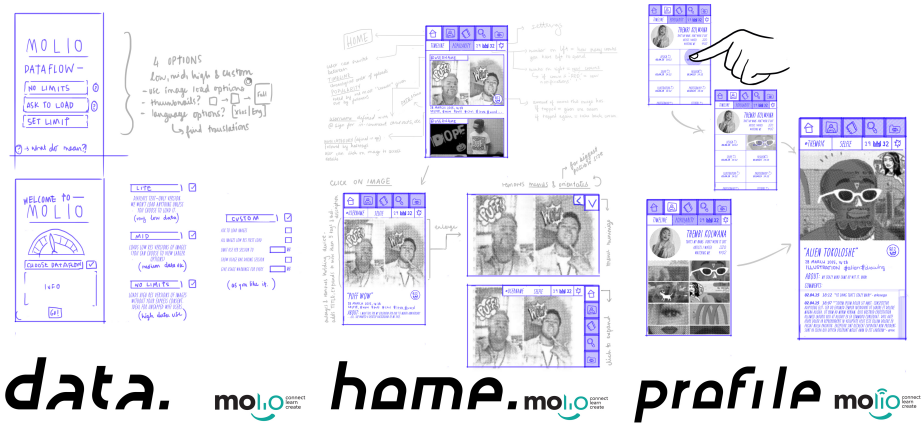
*Lunga:* *But see…maybe…if you can make it simple. Like you only look at some pictures…like just this or like, what-what…*

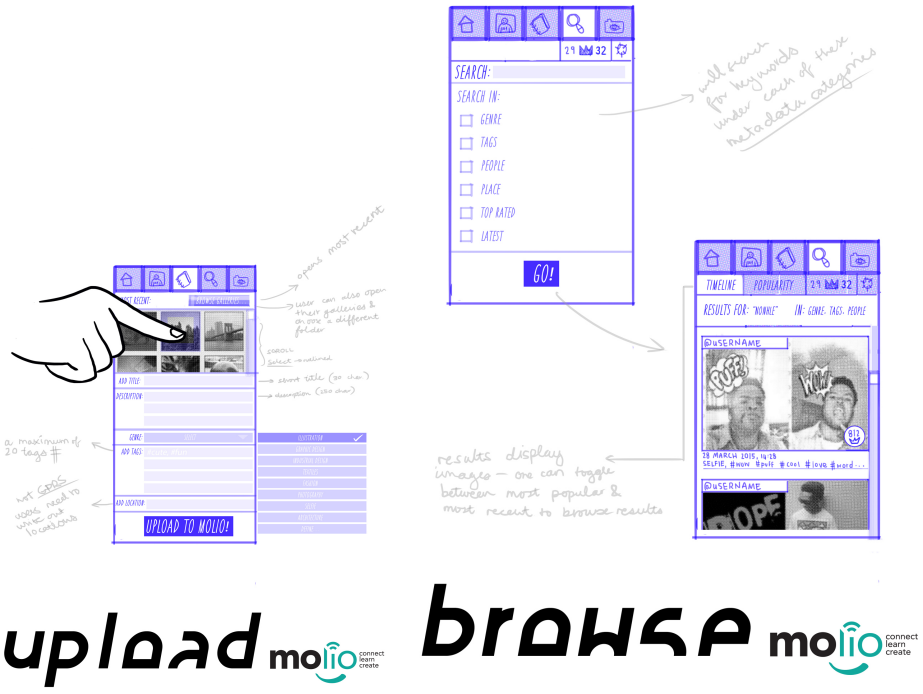
*Anja:* *Do you mean…Like, do you think that could work like…hmmm…maybe you can set a data-limit? Like, 'I only want to use 5 MB" in this session. And then it can make the pictures very low data…very low quality…*

*Lunga:* *Ja – that would be cool. So you can say, 'I want to spend R2'. Yes! that would be*

*very good.*

Although the intended focus of the workshop was on the technical affordances, and underlying infrastructures of mobile tools for design. Particularly in relation to commonly used desktop tools. It was this need for additional networking, community, portfolio display, and mentorship (in showing where to look, how to go about it, who to ask) that the participants lifted out as a very important part of the creative process. Based on our initial ideas, I put together a speculative mockup for such an app. Using the user interface on instagram as a starting point. I added a way to regulate the data flow of the app (from 'lite', 'mid' or 'custom'); A number of ways to categorise posts by location (so young creatives can find others within their area) and genre (illustration, photography, design, etc); ideas for an 'appreciation' system; and ways to search the database over time.




Although this mockup, as well as my 'designs' from the workshop, are only entrypoints towards realizing real-world designs. These visual aids, backed by an extensive workshop experiment, can act as a boundary objects that pry open a space for conversations between social scientists, who unpack real-world problems, and the technology developers who build tools to support and enhance practices.

APPENDIX E: CONFERENCE PAPERS AND PRESENTATIONS

1. Venter, A. (2016). Creative Jamming in Cape Town: improvisation as a method in technocultural research. *8ICOM 8th International Conference on Multimodality*. Cape Town, South Africa. 7 – 9 December 2016

2. Walton, M. Venter, A. Reitmaier, T; Molapo, T (2016). Gumzo: new dialogies for HCI. AfriCHI: *The first inaugural ACM SIGCHI African conference for Human Computer Interaction*. 21st – 25th November 2016

3. Venter, A. (2015). Digital Alternatives: mobile-centric creatives. *IR16: Association of Internet Researchers*. Phoenix, United States of America. 21 – 24 October 2015.

4. Venter, A. (2015). Smash the Black Box – designing for creative mobile machinery. In *Proceedings of the 21st International Symposium on Electronic Art (ISEA 2015 – Disruption)*. Vancouver, Canada. 14 – 19 August 2015. ISBN: 978-1-910172-00-1

5. Venter, A. (2014). Hacking Design: creative participation and Mobile ecologies. Johannesburg: *Fak'ugesi Digital Conference*

6. Venter, A. (2014). Creative participation and mobile ecologies among resource-constrained aspirant designers in Cape Town, South Africa. In *Proceedings of the 13th Participatory Design Conference: Short Papers, Industry Cases, Workshop Descriptions, Doctoral Consortium papers, and Keynote abstracts - Volume 2* (PDC '14), Vol. 2. ACM, New York, NY, USA, 225-228. ISBN: 978-1-4503-3214-9

7. Walton, M., Bidwell, N., Venter, A., Reitmaier, T. (2014). Mobile technologies and society in South Africa. Towards transdisciplinary perspectives on mobile social media. Potchefstroom: *40th South African Communications Conference SACOMM*

8. Venter, A., Walton, M. (2014). On Context: Exploring mobile phones as gaming consoles among resource-constrained youth in Ocean View, South Africa. Vanderbijlpark: *First International Conference on serious games in South Africa*

**9.** Noakes, T., Walton, M., Venter, A., Nel, J. (2014). Phone to Photoshop: Mobile workarounds in young people's visual self-presentation strategies. Bellville: *Design Development Research*

**10.** Venter, A. (2013). Creative participation and mobile ecologies among aspiring visual designers. Cape Town: *IPID 8th International Annual Symposium.*

# APPENDIX F: THE CREATIVE JAM INVITATION

CREATIVE JAM.

If you've always wanted to get into t-shirt design, or set up a portfolio, or make a music video, or promote yourself or a friend as a artist/photographer/DJ/model/fashion designer/whatever – come hang out and we'll make it happen together. We are facilitating a creative jam! The only condition is, these projects have to be primarily made from you and your teammates' mobile phones/tablets.

We'll run the projects from my home/studio in Mowbray (very close to the train/bus station, so transport shouldn't be a problem). There will be an first meeting where we will decide together on the meeting times for the project - we don't want to steal anybody's well-deserved holiday time!

From our side, we need to see how you create/want to create, what is missing on the existing technologies, and how you guys share/spread ideas and cool images. I will then take these problems and try incorporate them into our Mobifolio/Nokia visual design app.

There will be some perks, like unlimited wi-fi, airtime and transport costs covered, takeaways for lunch, and access to professional animators/illustrators/sound designers/editors to help guide you. Mostly, what you guys should be excited about, is that you can plant this on your CV as some first-rate design/research experience.

I'm looking for students who use their mobile phones to go online and create images*.
If you are ONLY creating/surfing/sharing from your PC/Mac –
this one's not for you, sorry. But don't despair, we are hosting a few more jams,
so fill out the form attached anyways, and we might call on your for the next one.

ICT4D mobi.folio NOKIA Cool Your Jets design.direct.animate. NANNA©

*Name:* _____ _____

*Contact number:* _____

*Phone model:* _____

*I mostly use my mobile phone or tablet, not computer, to create and share images* *yes* *no*

*I've completed a one-on-one interview with Anja* *yes* *no*

*I want to take part in the jam* *yes* *no*

*I'm away during the holidays from* _____ *until* _____