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## **Tentative Title**

Internet Infrastructure, Artistic Practices, and Power Relations in Western Equatorial Africa

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## **Introduction**

I propose a dissertation to improve our understanding of how contemporary African creative practices might reflect, or even influence, recent changes to internet technologies, at the infrastructure and network levels. I want to find out how the advent of access to and use of free/libre/open-source technologies, in and around creative practices, impacts extant relations of power as manifested through institutions of governance and standardization. I concentrate on this region, and specifically on Ghana and Nigeria, because here the pace of internet infrastructure-building far outstrips the rate at which end users gain access to the global internet, and to the technologies in question. To state the puzzle plainly, I want to help us better understand how art-making might affect power relations as a user-accessible internet is introduced to this region.

The study will undertake methodologically rigorous cataloging and analysis of contemporary African art practices and artworks engaging with both power relations and technical knowledge, building on earlier studies from related fields such as art history and political economy. Ultimately, the work may contribute to a theory of artistic production that can explain not only the influence of technical and political conditions of creative work, but that work's impact on the conditions themselves.

## **Background Information**

Several questions must be answered as background to this study, especially its choices of terms. Art-making indicates creative work: the productive activity of skillfully encoding cultural meaning in sensuous media; aesthetics indicates the patterns expressed in and through that activity. One challenge from this definition will be the winnowing out of specific creative work on which to focus, from the wealth of writing, drawing, painting, movie-making, sculpting, crafting, song, dance, acting, or even coding available for observation. Likewise, the many practices, methods, and techniques involved in art-making, and the various traditions and innovations at stake, the transmission or diffusion thereof, and the complex cycle of production, distribution, consumption/reception, and discarding or renewal, that all cultural objects undergo, challenge the study to concentrate on a focused selection of them, such as the processes of production in particular.

Technics include specific applications of technical knowledge, as well as the complex of infrastructure, networks, and systems that undergird specific connections between people, machines, and places. The concept of free/libre/open-source (F/L/O/S) technologies, especially software, is variously implemented by technologies that do not cost anything, and by those made available, in practice or by license, for anyone to view, use, share, copy, and modify. In the Bight of Benin, an infrastructure for global Internet traffic of unprecedented scale is now in place. However, local end users' abilities to connect to that backbone remain acutely limited. Beyond the massive installations of long-distance fiber optic cables and of routers in regional or national internet exchange points, the layers of operating networks, locally available bandwidth, internet service providers, data centers, and access to personal computers are not yet built in the region. This disjuncture between cutting-edge infrastructure and minimal access is highly unusual in internet history, since most of the global internet was constructed in the opposite pattern, first connecting computers, then local networks, then regional networks, with minimal long-distance connections early on that were gradually upgraded to meet the demands of traffic. In Ghana and Nigeria, where end users' access has not yet caught up to the potential capacity of the networks closest to them, both the structures of power and the practices of art-making seem poised to shift upon those technologies' introductions.

This is also why my approach would circumscribe a geographical and political region, limiting its scope to Anglophone Western Equatorial Africa (i.e. Ghana and Nigeria). Because these countries have similar colonial and postcolonial histories, they also provide ideal conditions to compare political, technological, and aesthetic shifts in tandem. The contemporary relations of power in each include indigenous, contact, colonial, post-colonial, and globalized spaces. Similarly, cultural histories in each state incorporate trans-national, ethnic, linguistic, and religious elements, while communities exist in each that are built on physical and practical organizations, villages, schools, formal and informal markets, and associations of all manner. This is the landscape of power relations within which the study would commence. It incorporates political-economic systems negotiating both neoliberal capitalism and anticolonial socialism. Its institutions of governance and apparatuses of governmentality extend from international bodies to local arrangements. To hold all these levels of complexity in mind at once, I draw a

comparison between power relations and source code: each goes uninterrogated by the vast majority of those who come into contact with what it makes, yet when its constituent parts are made known and openly available for review and modification, community improvements (including aesthetic improvements) can be made, the effects of which cycle back to what the relations or code produce in the first place.

Myriad other background questions arise in the course of this inquiry. For example, I will ask what patterns of internet access and use can tell us about social structures in the region. In the preliminary research, I will have to examine the extant cultural conditions under which the technological innovations under question here are deployed, and consider how informational and communicative technologies have historically affected this region. As most internet users in the region connect through a mobile device, at internet cafés, or through institutionally located computers, but not in a household, indicate about the social role of technology? And I will have to find out how the flow of information and communication through these new technologies relates to existing national boundaries. However, to do so, I do not approach this research problem in a vacuum.

## **Review of Prior Scholarship**

The previous scholarship on which this study builds has three broad bases: studies of the region from various perspectives, research into information and communication technologies, and theories of society and its relations of power. Prior work has established how power relations and technological changes affect one another. The mutual interaction between creative practices and structures of power are also well-studied. However, whereas opportunities for new creative practices engendered by new technologies are heavily theorized, less attention has been paid to the potential for creative practices to shape changes in technological development as such (and therefore to affect broader political institutions and structures of power). It is this gap that provides an opportunity to contribute original research on this topic, while trying to determine whose interests are served by the establishment of an up-to-date communications infrastructure in a region where not even one percent of the population owns a personal computer, whose are elided or excluded, and how access to such technologies might lead to their use for politically invested ends.

A wealth of prior study on international and transnational political economies, has laid paths to investigate institutions and cultural patterns that both structure and are changed by shifts in the technical and cultural situation. These studies include quantitative measurements and concrete challenges on the implementation and adoption of new technologies. The field of information and communication technology for development (ICT4D) research, along with international relations and international development, brings a macro-level view of these institutions to bear on problems of broad consequence -- employment, food distribution, and international politics, for example. Their perspective on the internet's introduction to Western Africa has largely

concentrated on either the opportunities for international business and diplomacy to stake claims on and through the infrastructure at hand, or on the complex negotiations that take place at the United Nations and other governance bodies over who assumes the duty and privilege of administering, regulating, and overseeing these technologies' practitioners. Similarly, political science and economics approaches to these topics have demonstrated the concrete challenges of the deployment of new technologies and their integration into deeply embedded local systems. These studies tend to consider hegemonic historical and political formations as their primary objects of focus, leaving available for further study more qualitative, subjective, and interpretive work, particularly on theoretical problems requiring less immediacy of results and more critical distance.

Another group of research that maintains close concentration on the people of the region as their subjects comes from regional and area studies traditions. Descriptive, encyclopedic research as undertaken by scholars such as Kwame Anthony Appiah and Henry Louis Gates provides a strong referential base for this study. This field of study also makes clear certain assumptions that drive much Africanist research: national borders, for example, may be taken for cultural ones. More critical approaches to these assumptions include research on the history of colonialism and on contemporary African society in the region, such as that of Toyin Falola. His concept of bio-historical criticism takes into account the fragility of colonially and neoliberally ascribed cultural demarcations. For example, he argues that to produce contemporary knowledge from an African or Afrocentric perspective, constrained by nineteenth-century constructs of proprietary and bounded epistemology that derives from colonial nationalism, is to produce a paradox. This school of thought is challenged and complemented by that of more liberally critical historians such as Isidore Okpewho, approaching creative practices in West Africa, particularly of literary work, as matters of incremental, evolutionary development within these same conditions, complicated but still ontologically possible.

The clearest open area for Africanist research centers on technological development. The rise of an African internet infrastructure has, so far, only been addressed speculatively by Africanists, especially in relation to questions of African creative practices. Though I would eschew speculation in favor of empirical investigation, I situate this study firmly on theoretical grounds born of extant Africana studies.

The lessons from Africanist scholars, of attention to the problems of people in the region, Research from media, communications, and technology studies, particularly the maturing field of internet studies, grounds a technical and epistemological understanding of this topic. This work explains how the internet is constructed, and by whom, though not yet regarding this specific region in detail. It follows the diffusion of technologies into cultural paradigms, and how technological impact might be measured within a specific set of people or practices. Technical literature on the components and practices that constitute the internet become crucially important here, as do more abstracted theories of networks as simultaneously social and technical phenomena.

These internet studies detail the infrastructure of the internet as well as its supported layers of technology, including networks, links, data, and all the services that run on top of these. Their theoretical traditions are still broadly distributed. In studies of communication and technology use, a critical turn from determinism and nominalism has taken place over the last decade. This project situates its own analysis of communication among its research subjects close to the schools of thought of adaptive structuration and constitutive communication. Wanda Orlikowski and Robert McPhee have demonstrated how groups of people can form their identities through the use of communication technologies. They are complemented by studies in the same field that show how media use is fundamentally enmeshed in social and cultural contexts. Wendy Chun and Friedrich Kittler's works, for example, mark the fragile distinctions between public and private life, hardware and software, that we rely upon in casual conversation about digital life. The dialectical relationship that these two bodies of work reveal – between technology and subjectivity, between media and everyday life – has, however, remained quite narrow in scope, usually limited to organizational or sometimes national behaviors. Its relevance to this project, then, requires a reframing in regional terms.

The major benefit of the communications and media studies approaches to the issues at stake here is their attention to the nuances of culture and behavior. Rather than measuring, predicting and controlling such behavior, other cultural theories seek to explain its roots. Among theoretical works that do address Africa, everyday life, or a technology-society nexus, though, none takes on their particular combination. The clearest demonstration of this can be found in the necessary agglomeration of methods and methodologies necessary to undertake this project. Some of the most productive cultural theories surrounding and informing this project are described as methodologies, above. However, others also help demonstrate where this study will fit into a broader survey of the field. These include Michel de Certeau's description of “everyday life,” Henri LeFebvre's corresponding critique of the concept, and the resulting theoretical conversation.

This is also the case with the literature from new media studies, but theories and research from the field mark out a certain middle ground here. Henry Jenkins's seminal thesis on “convergence culture” gives a concise and convincing overview of likely outcomes for a society in which digital media proliferate. Other proponents and detractors of the internet at large abound, such as Cory Doctorow and Dana Boyd who speak from a techno-libertarian point of view, or Jaron Lanier and Sherry Turkle, both staunch humanists. However, all these writers tend towards a starkly ethnocentric perspective, rather than the comparative approach undertaken here; further, most of them tend to generalize about human-computer interactions from studies of media and their contents, rather than from attention to infrastructure or cultural context. Lisa Gitelman's refreshing admonition to the field at large – that media are never so new as they may appear, after all – can keep the theory and the method implicated in this study honest. Most importantly, however, both the context and the object of my research seek an historiographically critical approach to interpretation of the current conditions on the ground, one which is thereby distinguished from both predictive and presentist accounts of technological and aesthetic change.

To abet this critique, I draw on philosophies of history, economy, and politics, particularly in the footsteps of the Frankfurt School and of Michel Foucault, to inflect my ontological framework for considerations of power relations as materially constituted and actively mutable by social activity as well as by discourse. These also include approaches to media from visual culture studies, whose techniques of observation and interpretation help frame the questions about the structure and formation of technology and society that are relevant here. To this end, I draw on other poststructural paradigms, such as the “control society” envisioned by Gilles Deleuze, to describe and explain how such discursive and intellectual abstractions work their way into lived effects. The important accounts of globalization from writers like David Harvey, Andrew Ross, and Frederic Jameson mark out a different kind of economic territory for my study – in particular, the importance of labor. And, returning to similar lines of thought as those named above under Africana studies, postcolonial studies have long traced the complications of subjectivity in cultural contexts inscribed with colonial histories. However, since none of these theoretical discourses, in themselves, address the peculiar concatenation of culture, geography, and history at work here, I will limit their invocation to what remains relevant to my central puzzle. In particular, social theories of the drivers of technical change provide a meta-analytical perspective on many of the issues raised so far, and allow me to categorize value-based approaches to those issues. What these scholars bring forward in terms of critical thought, however, they often lack in concrete technical literacy.

So I must balance this study between theoretical trajectories, historiographical critiques, and technical literacies. That balance of research gaps indicates the opportunity for original, unique research here: an overlap of aesthetic and art-historical theories with a technically literate detailing of the diffusion of a new technological innovation, in a complicated historical moment close to the present, as it is demonstrated through struggles for power. I hope to navigate this maelstrom by maintaining a focus on the material effects of the cultural phenomena in play, and through the research methods detailed next.

## **Methods**

The proposed study will employ a tiered set of methods to answer its question. First, it will observe cultural objects. This will require the objects' collection, and then a diligent, unaffected practice of reading, viewing, and so on. The collections will include artistic work that engages F/L/OS technologies, and the practices of observation will follow each work as closely as possible through its processes of production, taking note of the people and places involved along with the techniques. If necessary for the gathering of this data, I anticipate talking to people who work on any of the three elements of these processes, such as artists, internet operators, and political or governmental actors. I will supplement (or, if necessary, replace) these conversations with practices of reading: relevant transcripts, scholarly literature on the subjects at hand, and popular literature on specific works or processes, will all help complicate and flesh out an up to date understanding of art-making in practice. This practice of reading will also deepen my

study's engagement with existing scholarship and theory.

Having observed the cultural objects and related data, the study will turn to curation. This stage will organize the collections of artwork according to shared characteristics of their production, content/form, and conditions of production. It will correlate any relevant conversations and literature to specific works and parts of the collections. Finally, this stage will present the works in a cohesive and choate format. For example, a content management system may be used to categorize, detail, and present the works online.

Third, much of the work of this study will come in its writing. This stage has three components in itself. First, I will explain the objects at hand in detail. One object will be the technological stack underpinning the operation of, and access to, F/L/OS technologies. A second object will be the role of F/L/OS technologies in the collections, and the significance of F/L/OS techniques used. The extant institutions and other structures of power that form the context within which the works were produced will require its own explanation. And both the expected and actual impacts on systems of power of the works' production will round out the explanations required to move forward.

Next, I will analyze the details provided by explanation. In this part, I will apply lessons from art and media histories to show why artists use particular technologies in the ways that they do. I will apply lessons from communication and technology studies to measure the qualitative impact of art and technology on structures of power. And I will apply lessons from critiques of political economy and governance to determine what impact any changes to power relations and art-making have on the technologies in question over time.

Finally, I will work through the theoretical implications of the results of analysis. I will detail the purpose and impact of an aesthetics of contemporary creative production in and on its specific political and technical conditions. I will assess to what extent the interaction b/w technical and cultural factors on creative work requires attention to different levels of a socio-technical complex including the confluence of elements at stake in art-making, institutions, and the internet. If this produces a cohesive, holistic theory of that complex, then such a theory might itself constitute an original contribution to knowledge.

## **What Counts for Answers**

Myriad possible answers to the central question of this study suggest themselves, wherein each of the three elements might change. For example, artists might use free/libre/open-source technologies to connect to one another in free and low-cost ways to build social networks and/or communities of practice. Artists might use F/L/OS technologies in the production and/or distribution of their artworks. Artists lacking technical literacy and/or access to F/L/OS technologies might remain unable to use them, and suffer from exclusion from an increasingly internetworked art world. Artists might contribute to F/L/OS technology projects as an artistic

practice (e.g. writing, design, coding), agreeing to some extent with the goals of the project. Artists might contribute to F/L/OS technology projects as a practical matter (e.g. coding, development, management), agreeing to some extent with the goals of the project. Artists might create F/L/OS artworks as a political statement and/or economic intervention.

Other outcomes are also possible. Artists might remain unaware of F/L/OS technologies, and whether or not they might seek to affect political economies or power structures, they might not use these technologies in the process at all. Artists using or contributing to F/L/OS technologies might struggle to legitimate these practices against the scrutiny of corporate and/or state skepticism of such projects, and/or of the political activities of the artists involved. Artists might forego F/L/OS technologies in their engagements with systems and structures of power, approaching politics and/or technics in more traditional ways. The physical infrastructure supporting F/L/OS and internetting technologies (as opposed to abstracted, software and digital components) might become the material and/or medium for aesthetic work. In general, I would expect to find that either artists do use F/L/OS technologies for creative work with political effect, or that they do not do so, and then delve into the reasons for either answer.

## **Conclusion**

The study is likely to take about twelve to eighteen months to research and write.

The work of gathering artworks and technologies into collections has already begun. Review of the relevant literature is also underway, and I attach here a bibliography that demonstrates both the breadth of extant research and the need to focus down on the most important conversations therein.

If I can secure appropriate funding, a physical trip to the region would make possible the detailed collection of infrastructure and technological data, as well as the opportunity to talk directly with those involved in aesthetic, technological, and political spheres. If I cannot secure funding, that time will be filled with conversations with people in the two countries' diasporas, and with more detailed collection and curation of the artwork and technology in play.

However the details turn out, I look forward to contributing new knowledge to our understanding of how art, the internet, and power move through and around one another, in the context of the contemporary developing world.