Southern Theories in ICT4D

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Abstract. This paper suggests that the dominance of northern research paradigms in ICT4D may be viewed as a continuation of colonial sway over the endeavors of the global South. The notion of Southern Theory - as introduced in the work of Raewyn Connell, the Comaroffs, and others - may be a route by which researchers in the global South can reclaim the intellectual territory of ICT4D, with indigenous and regional research paradigms and theories rather than those simply absorbed from the global North.

Keywords: Southern Theory, research paradigms, theory, philosophy.

1   Introduction

As pointed out by Heeks and Wall, "There is little overt engagement with research paradigms in ICT4D research but what there is shows a dominance of positivism and interpretivism" [**Error! Reference source not found.**].   There is no reason why this should be so, nor, as this paper will argue, that the research paradigms to replace them should themselves derive from the scholarly traditions that brought us positivism and interpretivism in the first place. One route being explored by some ICT4D scholars is the Critical Realism inspired by British philosopher Roy Bhaskar [**Error! Reference source not found.**, 2]. Rather than reiterate the possibilities of this route, this paper seeks to show that there are in fact many possible routes ICT4D researchers might take, in their search for alternative research paradigms, philosophies, and the theories that rest upon them. In this paper, we suggest both the philosophical backdrop and theoretical approaches of the global North originate and remain in the vein of colonial imposition, and that there is now an opportunity for philosophical underpinnings and theoretical tools more in keeping with the pre- and post-colonial global South to be unearthed, developed, and deployed, much to the enrichment of ICT4D as a discipline.

In the context of Avgerou's three theoretical dimensions for ICT4D research - (i) theories of technology, (ii) theories of action, and (iii) "foundational theory that problematizes the notion of 'development'" [3], this paper concerns most closely the third theoretical dimension, but with strong implications for our understanding of "the socially embedded capacity of people to act" [3] in the second dimension. As such, its arguments are closer to the realm of the highly influential 'capabilities approach' of Amartya Sen [4], focussing, however, rather on the local theoretical capabilities in development contexts, than on development per se.

ICT4D has a history of absorbing philosophical approaches and theories from outside of its own discipline. Despite this, the majority of ICT4D research seems to prefer the safe territory of certain established paradigms, rooted in "a distinct academic, US-centric, business school-oriented, private sector focus, interpretive research method, systems development bias" [5]. Much research in ICT4D, according to two notable studies, among others, follows this path [6, 7].

In the absence of any alternative histories, embracing a different focus, many scholars in the developing world interested in theory are perhaps left wondering whether there is a place for them in a discipline dominated by such North American and European parochial concerns. However, there are rich seams of philosophical tradition all over the world, and potential theoretical models that could rest upon them, and a discipline dedicated to the fostering of what people living outside of the 'developed' world consider to be 'success,' can turn to scopes and measures of such achievement that, like the innovations they seek, are rooted in local context, rather than handed down from former colonial or contemporary economic masters.

In this paper, then, following a brief presentation of our research methods, we introduce the opportunity for the development of Southern Theories, and suggest a few alternative theoretical paths ICT4D scholars might wish to explore. We illustrate our new theoretical perspectives using a case study of cloud-hosted software service adoption in sub-Saharan Africa. Finally, we present some concluding remarks.

2   Methods

This research adds a new perspective to theoretical debates within the ICT4D community. Following our theoretical discussion, in order to apply our perspective and ground our thinking in an empirical context, we use a case study on cloud computing adoption in sub-Saharan Africa. The case study comprises secondary evidence, which we reinterpret for the purposes of our theoretical exploration.

Case studies enable the investigation of phenomena in a real-world setting, where it is not possible to manipulate variables [8]). We review published accounts of evidence collected, notably in the form of semi-structured open-ended interviews conducted with technology practitioners and executives in enterprises in Ethiopia and Nigeria.

3   Theoretical Context

Rather than simply apply one or more of the many already available philosophical paradigms and theoretical models from the global North to our Case Study, we offer a rationale for a search for something different – in regional and local guises - that might provide a fresh and more contextualised theoretical lens through which to understand the case.

The idea of 'Southern Theory' originates in Frantz Fanon's classic 1961 book 'The Wretched of the Earth,' [9] and Edward Said's 1979 'Orientalism' [10], and 1993 'Culture and Imperialism' [11], that together spawned the field of postcolonial studies. These studies are arguably right at the heart of Avgerou's third theoretical dimension

for ICT4D: foundational theory that problematizes the notion of 'development' [3]. They have concentrated, in the main, on the nature and effects of colonialism, and post-colonial cultures in areas previously colonised, and the continuing legacy of the European colonial 'expansion' of previous centuries, and the more contemporary economic imperialism of the US, and China. The notion of social and critical theories originating and reflecting the concerns of the global South, as distinct from studies turning the social and critical theories of the north back upon themselves - what one might describe as indigenously 'southern theories' - is, perhaps, a more recent development, possibly as recent as 2007's book of the same name, by Raewyn Connell [12]. Jean and John Comaroff, in 2012, have added to it with their book, 'Theory From The South,' [13] and de Sousa Santos in 2014 with his 'Epistemologies of the South' [14], along with a range of papers and other work highlighting the possibilities of a different view.

Raewyn Connell, introducing the notion of 'Southern Theory,' describes it straightforwardly as "a term I use for social thought *from* the societies of the global South. It's not necessarily *about* the global South, though it often is." [15]. 'Theory,' for Connell, in this context, does not refer to any specific theory, but to the broad spectrum of social thought and its range of different theories. Stressing the diverse nature of such thought, we like to think of it, for the purposes of ICT4D, as 'southern theories,' in the plural, and have titled our paper accordingly.

What, the reader might then ask, is the difference between theories from the global North and theories from the global South? The answer, for Connell, is in the 'gaze.' In her book, Connell outlines how classical sociology, as it is known in the 'metropole' of Europe and North America, is founded upon a creation myth cooked up in the 1950s, based upon a canon that distorts the history of sociology rather than faithfully depicts it. The backdrop of the ancient-medieval-modern sequence in European history, and the theories of progress which arose from it in the 19th century and came to define the new academic endeavour of social theory, had, by the end of the 19th century, in fact, as Connell tells us, settled upon the contrast between metropolitan and colonised societies as the central proof of 'progress' - the key motif of all social study at that time. The 'imperial gaze' of sociology ever since is one that Connell says ultimately "directs…attention away from analyses of the social world that come from intellectuals beyond the metropole."[1] The 'gaze' of Northern Theory, for Connell, thus, is one tainted with colonial attitudes infused with notions of 'progress' in which the material culture and values of northern capital cities are the highest good and goal, and the more rural and colonised one's culture the further one has yet to progress. Southern Theory – or theories - by contrast, would, therefore, perhaps be less concerned with such 'progress', less enrapt with city life and the needs and concerns of northern metropolitan living, and represent the needs and concerns of a more rural, agrarian, village-centred world-view, closer to the rhythms of the natural world. Connell is not suggesting that southern urban life would be excluded, but that southern rural life would not be excluded either.

The work of Vandana Shiva comes immediately to mind, the Indian scholar, environmental activist, and food sovereignty advocate, whose life's work (including over

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[1] [12] p.25

twenty books) has been in the defence and celebration of biodiversity and indigenous knowledge, especially in the promotion of 'seed freedom': a rejection of corporate patents on seeds. She is a key supporter of the notion of 'alter-globalisation' – an alternative approach to global economic cooperation that runs counter to the more established economic globalisation [16,17].

According to Statista, in 2018 some 82% of North Americans lived in urban areas, and 74% of Europeans, compared to only 49% of those in Asia, and a mere 43% of those in Africa. Latin America and the Caribbean confounds this divide with 78% in urban areas – the sprawling urban conurbations (or megacities) of Sao Paolo, Buenos Aires, Rio de Janeiro, Bogota and Lima accounting for much of this high percentage. [18] A focus on the more rural concerns of more than half the populations of Asia and Africa, then, could be one definition of what 'southern theories' could offer.

But the notion is perhaps even deeper than this, revealing broader assumptions at the heart of Euro-American thought concerning universality. As Comaroff and Comaroff succinctly capture it, in their introduction:

> "Western Enlightenment thought has, from the first, posited itself as the wellspring of universal learning, of Science and Philosophy, uppercase; concomitantly, it has regarded the non-West - variously known as the ancient world, the orient, the primitive world, the third world, the underdeveloped world, the developing world, and now the global south - primarily as a place of parochial wisdom, of antiquarian traditions, of exotic ways and means. Above all, of unprocessed data."[2]

Sociology and social theory as academic endeavors, in other words, are rooted in a very North American- and Euro-centric worldview. The sociological project to seek always to be able to make universal statements - to summarise experience in a way that can apply anywhere, at any time - is one that Comaroff and Comaroff roundly reject as a strategy for theory-building. Finding such an imperial gaze in the work of Coleman, Giddens and Bourdieu, each in their different ways, Connell shows how all of them rest their ideas fundamentally on experience and research in developed-world contexts, leading ultimately to what she describes as the utter 'northernness' of general theory. Comaroff and Comaroff likewise highlight how Euro-American social theory "has tended to treat modernity as though it were inseparable from… the rise of Enlightenment reason" and "a distinctively European mission to emancipate humankind from its uncivil prehistory."[3] The counter-history of European critical theorists who have spent their careers contesting aspects of or the very notion of the 'Enlightenment,' - for example Karl Marx, Hannah Arendt, Michel Foucault – seems, if anything, to underline this point.

For the world of development, it is important to recall, moreover, that sociological attention paid to the phenomenon of globalisation, began with the proclamation of 'a new form of society'. The emergence of new sociological theories of that new 'global society' were based around the idea that boundaries were breaking down and new linkages were being created. The progress motif, of course, however, continued, expressing

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[2] [13] p.1
[3] [13] p. 2

the spread of 'global society' as being the spread of this same Euro-American modernity. This sociological theory was paralleled by the neo-liberal ideology of the universal market, with all the imbalances of economic imperialism that accompanied it, so heavily critiqued by Vandana Shiva.

British sociologist Mike Featherstone was one of the lone voices sounding caution: "The process of globalisation, then," he wrote, "does not seem to be producing cultural uniformity; rather it makes us aware of new levels of diversity. If there is a global culture it would be better to conceive of it not as a common culture, but as a field in which differences, power struggles and cultural prestige contests are played out" [19].

Connell's project, then, is to foreground thinkers from beyond this metropolitan northern world. De Sousa Santos throws the oppositions of globalisation into sharp relief by positing a new 'universal' gaze from the south. Such 'southern theory' is thus not a branch of the northern social sciences wherein one is allowed to study non-northern contexts, such as anthropology. Nor is it development economics, or Area Studies, international relations, or the kinds of political economy which have spawned such 'world-system' approaches as Wallerstein's. That globalisation "involved from the start a differentiated multistate economy" was a "great contribution,"[4] but Wallerstein's generalised analytical model for the concept of a social system was as fundamentally 'northern' as other globalisation theories. The geo-political logic of all such systems is to treat the majority world as the object of theory; theory undertaken by the subjects in the northern metropole.

By contrast, theorists based in and reflecting a truly southern gaze have an exceptional and extremely valuable - and pivotal - role to play in what ought to be a global intellectual project to approach an unbiased perspective. Perhaps, after Featherstone, such a perspective must inevitably be one that will, perforce, admit of a multiplicity of views, celebrating diversity for intellectual health as biologists celebrate biodiversity as a key determinant of the health of ecosystems.

Connell, Comaroff and Comaroff, and de Sousa Santos identify a fantastic range of thinkers from Australasia, Africa, the Islamic World, the Indian sub-continent, and South America, and we might also add that China and South-East Asia ought also to be considered in this light. There is not space in a conference paper such as this to cover even a representative sample of this incredibly diverse material.

For all that both authors of this paper, of course, are products, and denizens of the West, we are struck by how the more recent and diverse counter-history of Western (anti-Northern?) philosophy – e.g. Marx, Arendt, Foucault - seems to be crawling slowly, or as Jean and John Comaroff would say, *evolving* towards, a more (pre-colonial) African approach to personhood and social organization. One might equally point to Indian and Chinese pre-Western epistemological, philosophical and social positions and practices. These pre-colonial positions—the Confucian ethics of kinship and loyalty, the compassion and consensus building in Buddhism, the Shinto, Hindu and Bantu attention to how dynamic forces work through ancestors, places, and communities—all seem to share in common a sense of relationality, context, and contingency as foundational conditions of possibility for self-concept in ways those of us brought up in the

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[4] [13] p. 67

context of the West's 'autonomous individuality' find quite difficult to conceive. (Working with Chinese and Japanese businesses has required some interesting education for American businessmen!) The diversity, variety and difference between all of these non-Western positions around the world seems more in the manner in which this relationality is played out: the sense of connectedness is shared.

Alongside the contrast between northern capital cities and southern rural living, then, another fundamental difference between Northern and Southern Theories, we argue, is in the foundational philosophy of individualism that permeates in particular the Anglo-American model of Western dominance and universalism, in comparison with the far more relational and contingent philosophies of the global South. Theories resting upon each philosophy are likely to be completely different. The methodological individualism of the North, "a doctrine about explanation which asserts that all attempts to explain social (or individual) phenomena are to be rejected… unless they are couched wholly in terms of facts about individuals" [20] is bound to produce fundamentally different theoretical models to a relational and contingent philosophy. The belief that common ownership of a resource inevitably causes its demise, prompted by biologist Garrett Hardin's flawed 1968 paper published in *Science*, famously entitled, 'The Tragedy of the Commons,' has been challenged and debunked [21]. As Locher describes it, such a 'tragedy' was "a misconception with no concrete basis, skewed by a highly ideological perception of social systems." [22] The tragedy of the commons has been their disenfranchisement and impoverishment by corporate forces, not some half-baked theory that common ownership and control is always, and by definition, less successful or efficient than private ownership and control.

Southern Theories, in this sense, then, would be models based upon a philosophy of connectedness, of human kinship, and our responsibilities to one another. Doubtless the most famous such has to be the work of Amartya Sen, who wrested neoclassical economics from its methodological individualism and re-centred it upon a concern for the distribution of opportunities within society, upon non-materialistic calculations of human welfare such as health and education, and upon human freedoms far wider than the mere utility of income, such as participation in political activities, and living to old age. Sen's individuals are connected, contextualised within a society that either supports or hinders them, both in simple monetary terms and in terms of other freedoms. [4].

Southern Theories for ICT4D

So, if Amartya Sen and Vandana Shiva are to be considered exemplars, alongside a need for a focus upon more rural concerns and upon relationality, then there is already a clear guide to what Southern Theory is, and how to practice it. We could probably identify quite a few other writers in the field who are already (mostly) there. Prakash and De, for example, critiquing the meaning of 'development' through reference to dependency theory, and the neoliberal focusing of a great deal of such development on the interests of a Euro-American 'centre' around which the rest of the world must spin, rightly conclude that the findings in their study "should encourage ICT4D policy makers and project designers to broaden their perspectives of what constitutes development

and explicitly acknowledge the importance of development contexts in influencing the outcomes of ICT4D projects."[5]

It is not the contention of this paper that the approaches of scholars in ICT4D who are not using what have we described as 'southern theory' are in any sense 'wrong,' or even 'misguided.' Yet, echoing the concerns of Yang Bai [24], whose three-journal study wonders if the global South has "become a playground for Western scholars in information and communication technologies for development," this paper nonetheless respectfully suggests that new theoretical directions for understanding the ICT4D context, and underpinning philosophical paradigms that might help it to flourish in continually changing circumstances, might best be sought for in traditions other than those of North America and Europe. "IT implementation projects" as Krishna and Walsham pointed out, "are not episodes disconnected from historical, organizational and economic circumstances from which they emerge" [25], and nor, necessarily, this paper argues, should be the theories and research paradigms through which they are analysed and understood.

Nor, importantly, is it our place, as northern theorists ourselves, necessarily to define what is or isn't a 'southern theory', beyond the exemplars and the broad themes that we have tentatively outlined above. Our wish, in this paper, is rather to point out the opportunity that exists for scholars in ICT4D to seek out and to create theories rooted in southern values and philosophical paradigms, rather than northern ones.

4   Case Study – Cloud Adoption in sub-Saharan Africa

Cloud computing is a utility approach to providing computing services (such as storage or computation) using internet technologies. Cloud computing is characterised by providing essentially limitless access to scalable computing resources, often using a pay-as-you-go contract model [26]. Cloud computing has had a dramatic impact on the provision of computing applications and services to the public. Business start-ups, in the digital sector, can avoid the need to establish computer server infrastructure by purchasing pay-as-you-go computational services. A new server can be made operational within 5 or 10 minutes. The use of a free and open source operating system, such as Ubuntu, provides industrial strength services with long term support commitments, while eliminating license costs. The cloud reduces up-front capital costs for new business entrants. The elasticity of cloud services means that computational resource provision can be more accurately tuned to actual demand than is often possible when establishing in-house server provision. Software applications, in the global North, are increasingly accessed through a user-interface rendered using a web browser rather than downloaded or installed from disk.

Considering the adoption of cloud technologies in sub-Saharan Africa, there are obvious impediments in rural areas due to the lack of internet access (and telecommunications in general). However, the case study found evidence of awareness and adoption of cloud-hosted software services in urban areas notably in Nigeria, Ghana and Kenya.

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[5] [23] p. 276

In these countries business owners valued the reliability of foreign data centres. Local server infrastructure is highly prone to damage from local power outages. Power outages come in the form of black-outs where power is lost but also brownouts where voltage is unexpectedly and arbitrarily reduced. Brownouts can be more damaging and are more difficult to manage for business consumers.

One key case study finding was the surprising difference in attitudes to cloud services between SMEs in the global South and global North. In the global North, the two issues of "security, privacy and trust," and of "data loss" are considered impediments to cloud adoption. Businesses are reluctant to commit their data to a third-party. In contrast, the case study revealed that African SMEs are more concerned about local risks to security and data loss. The fear of local employee data theft meant that foreign cloud providers are perceived to be more trustworthy. Whilst US tech giant Microsoft now deliver cloud services across Africa from Cape Town and Johannesburg, Chinese company Huawei, notably, have won the contract to build Kenya's government cloud infrastructure.

In this sense, cloud computing can be seen as the latest incarnation of colonisation and globalisation by powerful foreign commercial enterprises, with goods and services, in the form of computational and storage resources designed and implemented abroad and flows of payment finance out of Africa [27]. But an evolution toward China is visible, too.

In the case of Ethiopia, cloud technology adoption is much less common than the other parts of sub-Saharan Africa in the case study, impeded by lack of awareness, the history of state-run nationalised industries in the telecommunication sector and fear caused by the uncertain legal status of exporting local data to foreign server storage infrastructure [28]. Arguably, state monopoly ownership of the telecommunication sector has meant Ethiopia is much less open to these new forms of commercial colonisation.

So, what form might an alter-globalisation perspective take on a technology trend such as cloud computing? At a time when we might be concerned about centralising technology trends towards "Surveillance Capitalism" [29], we might instead focus on the indigenous African cloud hosted software services that have now started to emerge. For example, locally designed cloud hosted financial service products, notably pension portfolio investment products, have been developed in Ghana [30]. These fintech products are developed and marketed in Ghana for Ghanian and Nigerian consumers. Such providers benefit from low capital investment requirements and draw on the elastic and pay-as-you-go characteristics afforded by cloud-server hosting. Here the technology is supporting new, indigenous, entrants into the fintech market.

Initially, these indigenous services are hosted by foreign cloud service platform providers, though the financial service products are more closely aligned to local needs. However, we can also see evidence of indigenous cloud service platforms emerging. Specialist providers, based in the global South and serving local or regional markets, focus on the provision of high availability servers and use virtualisation to enable resource sharing and support elasticity. For example, cloudafrica.net is located in Johannesburg which, for South African consumers, eliminates the risks of undersea cables

through local hosting, keeps client data within their legal jurisdiction and mitigates foreign exchange costs by charging in local currency.

Hence, cloud hosting has the potential to create opportunities for "southern" improvisation and digital innovation. In commercial settings, reduced costs of (market) entry, eliminating capital expenditure for start-ups and pay-as-you-go models that can allow self-funded growth without significant investment funding create a uniquely level playing field for new entrants against (likely foreign) incumbents. We can predict that such benefits will eventually provide benefits to the co-operative and non-governmental sectors – the 'sharing' economy where the relationality of southern Theory might have much to teach us. We are already seeing cloud hosted open source not-for-profit applications in areas such as disaster management. We expect this trend into community-based initiatives will grow as knowledge about the benefits of cloud deployment become more widely disseminated.

Theoretical models that help us to understand trends outlined in the Case study, above, we conclude, might usefully turn both to the alter-globalisation and to the capabilities approach features being displayed, rather than, say, to maximising shareholder value for northern corporates. Further theoretical models – developed in the south – may tell us much more.

5   Conclusion

The power of the West has begun to decline, and the rise of both China and India as economic powers heralds a newly 'multipolar' world. But it is in Africa that the world's population is growing at its fastest. [31]. By the mid-2020s India's population is expected to have grown larger than China's, and by 2050 Nigeria will have become the world's third most populous country, behind India and China [32]. With a growth rate in 2017 of 3.2%, Tanzania is expected to be the sixth of the nine countries in which half of the world's population growth will be concentrated over the coming decades. No fewer than 26 African countries are expected to at least double their current population by 2050.

In this newly 'multipolar' world, then, where if only by sheer weight of numbers the West's decline will be accelerated, the Enlightenment project of general theory, expanded globally through colonialism, and then through neoliberal globalisation, will undoubtedly begin to find that its voice is not only not alone in trying to set the epistemological and philosophical agenda of global intellectual endeavour, but an increasingly contested voice, at that.

This paper, then, is a call to the community of ICT4D researchers to look further, in their search for methodological paradigms, theoretical lenses, and philosophical approaches in the various theoretical dimensions identified by Avgerou, than the canon of Euro-American academe, and to discover, explore, develop and promote 'southern theories,' indigenous sociology, African philosophy, Chinese philosophy, Indian philosophy, and more, in its analyses of what development is, and how information communication technologies – such as cloud-computing services - in development contexts can, should be, and are deployed.

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