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Listening as life: sounding fetal personhood in South Africa
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ABSTRACT
In many parts of Africa, antenatal care is primarily an auditory affair. Midwives evaluate the health of the fetus in utero by listening into the womb with an ear carefully attuned to the sound of heartbeats – of the pregnant person and the fetus(es). These midwives are aided by inexpensive and portable technologies – the fetal stethoscope being the most common – that amplify resonance. With a focus on South Africa, this article examines listening devices themselves as well as the conceptual questions those devices raise. In particular, it explores two main areas of inquiry: first, the deployment of sound in the development of fetal personhood, and, second, the particular kinds of sonic relation that are established through listening in environments of antenatal care. A close examination of antenatality in African contexts invites a reconsideration of conventional notions of sound – especially those having to do with transduction, vibration, and resonance.

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Introduction

In many parts of Africa, antenatal care is primarily an auditory affair (see Figure 1). Midwives evaluate the health of the fetus in utero by listening into the womb with an ear carefully attuned to the sound of heartbeats – there are always two at least. These midwives are aided by inexpensive and portable technologies – the fetal stethoscope being the most common – that amplify and focus resonance. Sound and listening are crucial for the determination and maintenance of human life.

With a focus on South Africa, this article examines listening devices themselves as well as the conceptual questions that they raise – I emphasize two in particular. The first question concerns the manner in which antenatal practitioners deploy sound in the establishment of “fetal personhood.” By fetal personhood, I mean the ways a fetus may be said to be alive (or not), have agency (or not), and participate within the social field (or not) (see, e.g., Conklin and Morgan 1996; Layne 2000; Draper 2002). In this article, I investigate the specific practices of healthcare, healing, and diagnosis, especially as these deploy sound and listening (Lachmund 1999; Rice 2013; Moreno 2019). The second question expands upon, and calls into question, dominant conceptualizations of sound as they are constructed through Western scientific technologies and institutions. In particular, I put pressure on the definition of sound exclusively as “transduction,” a notion that has significant explanatory power but that arguably finds its limit in African antenatal care. Taken as a whole, the article argues that African
antenatal contexts invite us to generate new ways of thinking about sound, listening, and the acoustic.

Although I draw on the rich body of literature on medical auscultation (Reiser 1978; Lachmund 1998, 1999; Sterne 2003; Rice 2013), this article is not meant primarily as a contribution to the history or sociology of medicine. Why? Mostly importantly, the broader terrain of healthcare that I am interested in here cannot be apprehended through a narrow focus on biomedicine and hospital settings. Instead, a robust analysis of antenatal care in southern Africa requires considering a range of positions, from obstetricians and professional midwives to informal birth attendants and “traditional” healers. If Tom Rice’s (2013) classic ethnography of stethoscope listening in a UK hospital expertly elucidates the social and phenomenological contours of medical auscultation in a hospital setting, and if Jens Lachmund (1998) has documented the gradual movement of the stethoscope from the confines of the hospital to a much wider terrain of medical and diagnostic practice in nineteenth-century Europe, then this article broadens the context even further as a way to expand the study of auscultation beyond Western medical scenarios.

Figure 1. Nurse in Uganda. Used under Wiki Commons licensing.
Here I aim to contribute, not primarily to the history or sociology of medicine, but to the field of sound studies. As a radically interdisciplinary field, sound studies does not fit neatly into pre-existing epistemic configurations – this makes the field challenging but also, I would suggest, particularly generative. My methodology is equally eclectic: although I draw selectively on fieldwork and interviews with midwives in South Africa, the article is not deeply “ethnographic” and rather moves between nursing history, anthropology, and critical theory. Examining antenatal care in South Africa in the broadest possible terms, this article invites a serious meditation both on the multiple uses of sound and on what sound actually is. I show that an analysis of sound and listening within and beyond the hospital in South African antenatal care puts pressure on conventional conceptualizations of the acoustic.

By listening in to the movement and pulsation of the fetus, midwives sit at the acoustemological nexus of sound and life (Feld [1982] 2012). They participate in what Ana María Ochoa Gautier (2014) calls the “spectral figuration of the acoustic,” “an invisible yet highly perceptible and profoundly felt (im)materiality, which hovers between live entities and the world.” I will argue, moreover, that in antenatal listening sound does more than conjoin or hover over entities. Sound participates in constituting, generating, and producing new entities – including life itself.

The article proceeds in five parts. First, I attend to the fetal stethoscope qua listening device by considering it in relation to other horn-based practices in Africa. Second, I delve into the history and politics of South African antenatal care. This takes me to a more extended discussion of conceptualizations of pregnancy and personhood in southern Africa (this is section three). The final full section (section four) develops material from the first three sections to put pressure on Western hegemonic conceptualizations of sound. In particular, I focus on the figure of “analogism” as a way to unpack the notion of sound qua transduction. Through an extended theoretical meditation on transduction, analogism, and other key terms from anthropology, critical theory, and science studies, I argue that what is at stake is nothing less than the very ontological determination of sound itself. In the short conclusion that rounds out the article, I suggest that opening up the question of the ontological in this way is the first step toward decolonizing our inherited Western understanding of sound.

**The ubiquitous horn**

According to Michel Foucault (1973, xiv), the birth of clinical medicine in Europe meant nothing less than “the opening up of the concrete individual, for the first time in Western history, to the language of rationality, that major event in the relationship of man to himself and of language to things.” Rice (2013, 126) similarly avers: “Western biomedical practices involve the transformation of the body into frames of reference which create objectification at many levels.” The ear, no less than the eye, was instrumental in this process. As Jonathan Sterne (2003, 99) comments: “a [new] technique of listening was instrumental in reconstructing the living body as an object of knowledge” (see also Sterne 2001). The technique to which Sterne refers is “mediate auscultation,” first named (and elaborated) by the French physician René-Théophile-Hyacinthe Laennec in his treatise of 1819 (Reiser 1978; Lachmund 1999; Rice 2013, especially chapter 3). By this term, Laennec meant a practice of listening into the body...
(auscultation) by means of an instrument – in his case, the stethoscope, which he had invented a few years earlier (in 1816, according to his own account; Laennec 1819). Mediate auscultation was shortly thereafter adapted for obstetric purposes, mostly notably by French clinician Adolphe Pinard (1844–1934), after whom the present-day instrument is named (Blaufox 2002): in contemporary medical parlance the fetal stethoscope is often referred to as the “Pinard horn.” Made from wood, plastic, or metal, this device is a simple, conical, monaural tube whose current going rate is as little as a couple of dollars (see Figure 2).

The introduction of mediate auscultation into African health regimes was largely the result of colonization on the continent. Historical details are unfortunately very sketchy, and as S. Levin (1968) observes, “South African medical literature is almost devoid of references to early stethoscopes.” Although there exist a few scattered mentions in newspapers and popular periodicals going back to the late nineteenth century, Levin is probably correct that the earliest medical paper to discuss stethoscopes in South Africa is R. Schaffer’s “The Misleading Stethoscope” of 1942 (Schaffer 1942).2 The archive is even quieter on the topic of fetal auscultation, which hardly appears in print until the 1960s.

Available evidence suggests that fetal stethoscopes rose to prominence in Africa in the second half of the twentieth century, as obstetrics was increasingly institutionalized, on the one hand, and as obstetric practice in Europe and North America became increasingly high-tech, on the other. Indeed, since the 1980s ultrasound technology has completely transformed obstetric medicine in the global North. We live in “an age of monitored reproduction” in which ultrasound’s visualizations are employed “to measure, date, position, and intervene in pregnancies, while ‘reassuring’ their patients that their fetuses are developing in a normal matter” (Rapp 2007, 608). Sonograms (that is, visual representations of ultrasound)

Figure 2. Fetal stethoscope or “Pinard horn.” Used under Wiki Commons licensing.
allow the physician to bypass pregnant women’s self-reporting in favor of a window on the developing fetus; these images also form part of the fetus’ “biography,” which might circulate widely amongst family and friends (Mitchell 2001; Taylor 2008). Jan Draper (2002, 781) refers to this process provocatively as “a kind of antenatal birth” (see also Hockey and Draper 2005).

Although ultrasound technology is available at most larger state hospitals and many private clinics in South Africa, fetal stethoscopes are often employed by midwives in more rural environments, especially in areas where electricity is not easily accessible. In other words, the ubiquity of fetal stethoscopes in South Africa (and indeed, in most of sub-Saharan Africa) is due, in large part, to a relative scarcity of resources. But there is also another side to the story. While the “Pinard horn” can be traced directly to European medical practices, horns have long been employed as medical instruments in southern Africa. 4

Written accounts of southern Africa frequently mention that healers customarily carried antelope horns under their arms and that such horns served as professional insignia (e.g., Thompson 1965, 83). It is interesting to consider this observation in light of Rice’s (2013, 73) insight that in “the act of applying the stethoscope [in Western contexts], a doctor produces a particularly neat encapsulation or performance of the primary dispositions of the medical habitus.” In both Western biomedical and African “traditional” contexts, it seems, material devices function partly by virtue of a semiotics of professionalism.

Throughout southern Africa, antelope horns are used primarily as cupping or suction devices to extract toxins (or, more generally, anything that might cause illness) from the human body (Turner 1967, 1968). “A favorite treatment among the Zulus [of South Africa] is cupping,” writes Nozipho Ngubeni (2002, 27). “Incisions are made on the skin with a sharpened iron and blood drawn through suction by a horn.” By all accounts, cupping is a geographically widespread and ancient practice – perhaps as old as several thousand years. The authors of a recent and comprehensive review summarize: “Although the beginnings of CT [cupping therapy] are shrouded in controversies, the practice has provided assistance in curing medical and surgical ailments, and was an important component of the effective therapeutic methods of ancient times” (Qureshi et al. 2017, 172).

At the same time, horns have been deployed in southern Africa as sound-producing devices for centuries, if not millennia. The Khoisan in the Cape are known to have fashioned horns from washed-up kelp or seaweed, a practice that today exists only in residual form. Percival Kirby (1934, 82) notes the instrument’s use by fish-cart drivers; apparently kelp horns were also occasionally used in dance music ensembles (121). Writing in the early 1930s, Kirby also commented on a “curious kind of trumpet” played by “the Zulu” called an icilongo (81). “It is carried at the present time by young bloods on their courting expeditions,” he noted, and “is also played by herd boys” (82). Another example is the side-blown kudu horn, known as impalampala in Swati (a Nguni language that overlaps considerably with Zulu), historically used to summon villagers to ceremonies or events (78–9). Horns are also used in ritual contexts, such as initiation ceremonies (79). More generally, horns have a deep symbolic resonance in many southern African populations; indeed, the important anti-colonial hymn (and current national anthem of South Africa), “Nkosi Sikele’ iAfrika,” begins in Xhosa: “Nkosi sikele’ iAfrika/ Maluphakanyisw’ uphondo lwayo” (Lord, bless Africa/May her horn rise high). 5

Southern African populations have long placed value on cupping horns, on the one hand, and the blowing of horns, on the other. Hence, while there is little evidence of precolonial medical auscultation as such, it is not difficult to imagine how an instrument
such as the Pinard horn was easily adopted by local health practitioners. If cupping horns remove pollutants from bodies and blown horns resonate with rich social or spiritual significance, then the idea that one might listen into a body to detect ailments seems not very far-fetched. Hence, although the ubiquity of fetal stethoscopes in southern Africa is due partly to the fact that these devices are cheap and easily transportable, it seems very likely that their enthusiastic adoption was “prepared” by the prevalence of horns for a variety of purposes prior even to the advent of mediate auscultation in Europe.

Most basically, what the (fetal) stethoscope does is invert the function of a blown horn (such as impalampala), reversing the vector of sonic transduction. With the horn pressed against the belly of a pregnant person and directly over the fetus’ heart, vibrations generated by each beat of the heart are funneled into an attentive listening ear. A horn, then, can be used either to amplify sound or, inversely, to enhance audition. Cupping is done by placing the wider, open end of a horn onto a patient’s skin to draw something out of the body. This implies the removal of pollutants from the human body in the form of a focused stream rather than a diffuse and scattered amplification. Irrespective of its modality of use, in the final analysis the horn is always a transducer, a technology that “convert[s] something and especially energy or a message into another form.” But a question remains whether transduction as a concept can accommodate the wide range of African horn-based practices. I return to this issue in section four.

Antenatal care in South Africa

Viewed over the longue durée, African health systems have harnessed the transductive capacity of a simple device – the horn – in multiple and hybrid ways. On this view, the fetal stethoscope is simply one further addition to the transductive repertoire. It makes sense, furthermore, to understand the Pinard horn’s popularity in the historical context of African healing practices more generally. Indeed, many researchers have observed an openness on the part of African healers to the introduction of new technologies and ideas. For example, in her comprehensive history of South African nursing, Shula Marks (1994, 80) observes that in the nineteenth century “African healers and patients were adept at adopting and adapting those aspects of western medicine that worked without allowing this to undermine belief in the efficacy of their remedies and belief system.” John Janzen (2015, 47–48) thus cautions against opposing the terms “spirit” and “science” in the context of African health regimes:

This distinction is not a dichotomy between present practices versus past practices, nor between foreign-introduced biomedicine and traditional medicine. Rather, it has to do with the advance of understanding and practice of science in the service of healing, as well as continued use of spiritual healing and views of the world that engage spiritual forces – human as well as non-human.

Antenatal care in southern Africa typically works in both registers, although as we will see the relationship between the two is not always without conflict – especially where white medical practitioners and white-dominated institutions are concerned. Put more basically, antenatal care in South Africa is undertaken by a wide range of individuals,
from medical professionals (obstetricians and trained nurse-midwives) to certified (but not medically trained) doulas and uncertified “traditional” healers (such as sangomas). Many, if not most, black South African women interact with more than one kind of birth attendant during the gestational period.

The official registration of nurses took place in southern Africa before anywhere else in the world (in 1891). Nurses “in the Cape Colony were registered nearly three decades before nurses in the UK,” writes Marks (1994), who goes on to explain:

In contrast to the situation in late nineteenth-century England where many doctors felt threatened by the registration of nurses and midwives, and where Florence Nightingale herself opposed their registration, in the Cape Colony the self-consciously British doctors seem to have seen the new cadres of “lady nurses” as fitting “helpmeets” and appropriate adjuncts to their newly acquired status. (114–115)

The important point, however, is that these early nurses were all white. The history of South African nursing, then, is what Marks calls a “divided sisterhood.” A comprehensive analysis of South African midwifery must therefore be resolutely intersectional, and must account for the mutual entanglements and, indeed, the contradictions, of race and gender. For, just as European colonizers violently suppressed African spiritual beliefs during the “civilizing process,” so too did male doctors suppress the practice of midwifery for several centuries in Europe – particularly during the witch hunts of the early modern period (79).

Nonetheless, black women (and, to a lesser degree, men) gradually entered the nursing profession already in the early years of the twentieth century, even if the numbers remained low for the next several decades. The Cape Town–based white South African midwife Marianne Littlejohn told me why black women were permitted into the profession: “Because white women were not really allowed to nurse black men, they needed somebody who could do that. And who better than the black women? So originally the missionaries trained black women to be nurses so that they could nurse the black men.”

Littlejohn’s claim is bolstered by historical details provided by Marks (1994, 52):

At the South African Imperial Union Congress in Grahamstown in 1906 … it was resolved that the training of black nurses be encouraged in order to prevent whites nursing African men while, while at the beginning of the following year a delegate to a conference of the Guild of Loyal Women passionately declared that “no white women should be called upon to pass through such an ordeal.”

In brief, because of racist anxieties surrounding black men, black nurses were “conscripted” into the nursing profession – and, thereby, into “Western civilization” (cf. Asad 1992).

This conscription increased substantially over the course of the twentieth century, leading to what some have referred to as a kind of “biomedical imperialism” (Decoteau 2013, 136). In the past decades, biomedical imperialism has been targeted not only at nurses but at pregnant women as well. As a medically-trained (white) midwife told me, one major focus over the past ten years has been to bring obstetric medicine to those living in rural areas and thus outside the orbit of typical state-sponsored medical care.

Especially in the last ten years, we’ve got mobile clinics that offer the basic antenatal care, which we call BANC. And they would probably go around to a few of the more rural areas – like especially during some seasons when there’s apple picking or this picking, or whatever picking, and they’ll go and see the mass of people that are there, for all type of things. So
that might include family planning, that might include coughs, colds, etc., etc., immunization or whatever. And then they would offer this basic antenatal care.\(^8\)

The most important aspect of BANC, she told me, is attenuating the use of traditional practices and the idea that “everyone’s [an] expert.” In South Africa today, “[n]inety-four per cent of women attend antenatal care and 96% deliver in healthcare facilities” (Wiim, Vannevel, and Bothma 2019, 28). More than eighty percent of the South African population relies on public sector medical facilities, and the “majority of public sector obstetric medical care in South Africa is provided by midwives at primary care facilities” (ibid.).\(^9\)

Without denying the benefits of modern obstetric medicine, it is also possible to understand programs like BANC as in some sense a continuation of longstanding colonial apparatuses. Stated in the most general terms, while “traditional” health practitioners have long been “adept at adopting and adapting [certain] aspects of western medicine” (Marks 1994, 80), the Western medical fraternity has been less open in the other direction. That said, it would be wrong to accuse all South African midwives of complicity in “biomedical imperialism.” The midwife quoted above also acknowledged that “traditional midwives, or unskilled, untrained birth attendants [have] probably followed the physiological process of birth more than us medical practitioners.” What is more, she emphasized the agency of the pregnant women, saying that “a mother should do what she intrinsically wants to do.” I have often noted this kind of oscillation – or even contradiction – in my discussions with medically-trained midwives. It speaks again to South Africa’s heterogeneous contexts of antenatal care, in which different kinds of practitioners and different epistemological frameworks overlap even within a single community.

The complex and occasionally antagonistic relationship between biomedical practitioners, traditional birth attendants, and pregnant women raises a more general political question surrounding abortion and women’s right to choose. A pregnant woman is certainly less than two people. However, for many pregnant people around the world – especially at later stages of gestation – the fetus is registered as more than a mere constellation of cells within the womb. This is just as true in Western contexts (Hockey and Draper 2005) as it is of those in Africa. Taking a cue from Marilyn Strathern (1991), I argue that pregnancy is a case of “more than one but less than two” persons (see also Moreno 2019). Along similar lines, feminist theorists have advocated a qualified “recuperation of the fetus” in public discourse (Michaels and Morgan 1999). Authors such as Rebecca Wilkin (2008) worry that an overly aggressive dismissal of fetal personhood may lead to a politics of rampant individualism. From this perspective, those invested in the rights of women to decide on their own bodies should not feel emotionally blackmailed into denying (or ignoring) the emotional and psychological investments pregnant women may have in relation to their fetuses.

These ethical and political questions are all the more urgent in the South African context, haunted as it is by gender-based and sexual violence (see, e.g., Nuttall 2004; Morris 2006; Mathews, Jewkes, and Abrahams 2015). My interest in midwifery and antenatal care more generally originally stemmed from the conviction that any adequate response to South Africa’s health dilemmas – especially those that disproportionately affect black women – needs to place pregnant women, midwives, and birth attendants at the center of analysis.\(^{10}\)
Personhood and the principle of *ubuntu*

The question of fetal personhood – of how, if, and when it is acceptable or useful to invoke the concept at all – is not incidental to the audile practices of midwives in South Africa. Indeed, midwives and other birth attendants have an important role in determining how the fetus is known and registered to the mother, as well as to others within the mother’s kinship network and beyond. At risk of exaggeration, it might be said that midwives are largely responsible for mediating the relationship between fetus and society, including cultural beliefs concerning issues such as fetal personhood.

As the midwife Marianne Littlejohn told me, the long history of professional midwives in South Africa means that “the medical model of midwifery care is entrenched in South Africa amongst all midwives. Deeply entrenched.” This “model” includes not only technologies and practices, but also ways of understanding what and how the fetus is. Biomedicine measures the development of the fetus in terms of its morphological features. By week eight, for example, lungs typically begin forming, and between weeks thirteen and sixteen fine hair develops on the head, while the liver starts to produce fluid secretions. Around week twenty-one, nails begin to appear on fingers and toes, and by week twenty-six the cochleae are developed. Although the heart begins beating as early as twenty-two days into pregnancy, the organization of heart cells develops far later – as late as twenty weeks. The fetal heartbeat can be heard with a stethoscope around twenty-eight weeks.

The biomedical measurement and evaluation of the fetus differs considerably from the way many South African women conceptualize the development of life. For many black population groups, life is closely associated with personhood and is constituted less through morphogenesis than through a web of associations with other people. The Xhosa/Zulu word *ubuntu* (usually translated as “personhood” or “what it means to be human”) embodies an ethical principle, often expressed as *umuntu ngumuntu ngabantu* (a person is a person through other people).

According to Jewkes and Wood (1998, 1048), it is typical for rural Xhosa women to consider the fetus alive (ukuphila) from the moment it is felt or experienced by another – usually the mother (who experiences fetal movements), but also, I would add, by a midwife who listens to the belly of a pregnant woman. In Xhosa, the verb stem -phila means “to live,” but it also has connotations of well-being. Hence, in a traditional greeting, one responds to the question “Unjani?” (How are you?) by saying “Ngisaphila” – functionally “I am well,” but literally “I am still alive.”

The Xhosa women interviewed by Jewkes and Wood further distinguish between the first moments of life and the protracted period of developing personhood. Thus, while life begins when a fetus is experienced or sensed by mother or midwife, stillbirths and even infant deaths are not ritually mourned by the community, or even by the mother, because it is considered that the infant was never properly known and, therefore, did not fully develop into a person (Jewkes and Wood 1998, 1049). In the Eastern Cape communities that Jewkes and Wood studied, a newborn child is introduced to the community gradually through a series of rituals and ceremonies. Key among these is umsebenzi, a ritual in which the infant is introduced to the community and acquires “ancestral protection against sickness” (ibid.). Another, related practice is ingqithi, which entails removal of the last joint of the pinky finger and similarly aims for ancestral
security (ibid.). According to one middle-aged woman I spoke with in my research, *ingqithi* is also sometimes performed in cases of bed-wetting in slightly older children.

What emerges is an understanding of personhood as processual and gradual. Personhood is established little by little through the forging of associations with kin, other people in the community, and those who have died (that is, the ancestors). This conceptualization of personhood does not imply a lack of physiological (or “scientific”) knowledge. Indeed, the problem is not simply knowledge in some abstract sense, but rather who has access to knowledge and who has “ownership” over it. One feature of modern obstetrics is that it significantly shifts both knowledge and agency from the pregnant person to a medical professional (who, if a physician, was until recently almost always male). Thus, one is not surprised to learn that when a white single mother in the Cape Colony sought an abortion in 1869 she turned not to healthcare professionals but to her “black ironing servant” (Bradford 1991, 124). As Helen Bradford (1991) notes, it was well known at the time that the indigenous peoples of South Africa had ample and quite safe ways to induce an abortion. More important for the current discussion, however, is Bradford’s observation that a great deal of heavy ideological work was required to establish the notion that life begins “at conception.”

In South Africa today, notions of processual, gradual personhood are being challenged by state vital registration systems that view natality and death as *instants* that can be pinpointed to a day, an hour, or even a minute. Such registration systems are part of a larger transformation in South African political economy (Jewkes and Wood 1998). Particularly after the end of apartheid in the 1990s, the South African state began to increasingly exercise forms of modern biopower (as described by theorists such as Foucault [2003]). Today, populations are managed through the deployment of multiple “dispositifs” such as birth registration and an elaborate system of social grants (Ferguson 2015). Of course, such changes have for the most part been both welcome and long overdue, bringing with them a basic set of human rights and legal protections. Nonetheless, the firm establishment of human rights discourse, along with the pernicious rolling out of technocratic neoliberalism, has put local notions of personhood under tremendous pressure. The result is a kind of “biomedical citizenship” (Decoteau 2013).

Hence, contrary to an ontology that sees personhood as a gradual process of establishing associations, pregnant women and midwives are expected to accept (one might say they are coerced into accepting) a temporality of life that trades in punctual moments. The biomedical view of personhood was articulated to me very clearly, and in aggressively Eurocentric terms, by a white South African midwife trained in Cape Town in the late 1970s. In her words:

> I mean, in primitive cultures a baby’s not a person until they can speak. So in African cultures, here in Khayelitsha [a largely impoverished “township” outside Cape Town], they’re doing studies on mothers and babies. And as far as mothers are concerned a baby’s not a person until he can speak. So how do they relate to their children? How do they care for them if they’re not conscious that the baby is a person? 

It would seem that this midwife fails to understand the conceptualization of personhood based on *ubuntu*. While for her a human is a person from the moment of natality, a moment that the Judeo-Christian tradition has long viewed as a miraculous instant (cf. Arendt [1958] 1998), the women in Khayelitsha to whom she refers likely view...
personhood as a protracted process. Certainly, speech is an important feature in the trajectory of African personhood, but not so much because of the "developmental stage" it signposts. It is more that through speech a person enters into new and increasingly complex relationships with others.

By the same token, when Xhosa birth attendants detect the earliest sounds of a fetus, they do not simply feel or listen to a being that is already alive – for this would imply that the fetus is alive simply by virtue of its physical attributes. Instead, life is established through the relation between the fetus and the midwife who hears that fetus. Listening does not merely detect a life that already exists. Rather, listening composes life under the sign of *ubuntu*, of becoming a person through other people. On this view, it is possible to affirm those oft-cited "relational" dimensions to sound (for an excellent survey, see James 2019). Life is not of or within the fetus but is rather something that – like sound – takes place between or traverses two beings. The fetal stethoscope, then, is like a cupping device that channels the flow of vital energy into the ear of the midwife.

**On analogism**

But how far can this relational theory extend? And to what extent is the relational character of sound isomorphic with the relational character of *ubuntu*? Theorists should be wary of attributing essentialized characteristics to sound, as Jonathan Sterne (2003) has long argued. Among other things, Sterne’s warning encourages greater attention to specificity. Hence, a more comprehensive account of antenatality in southern Africa might benefit from a closer look at conceptions of health and well-being. While it is of course difficult to generalize – and while I am fully cognizant of diversity and historical change in southern Africa – I turn to one useful anthropological account as a way to offer a few modest observations.

According to Robert Thornton (2008, 214), *sangomas* (diviners or healers) in southern Africa conceptualize health as resulting from a "balance of substances both within the body and between others involved with the person’s social and sexual network of kin, friends, lovers, and associates.” In the vast constellation of southern Bantu languages, blood is known by similar terms – for example, *madi* (Pedi), *ingati* (Swati), and *igazi* (Zulu) – and is typically comprehended as an “enduring substance that survives the death” of bodies through which it circulates (213). Similarly, “spirit” or “breath” (known by some variation of the word *umoya* in at least half a dozen Bantu languages) is transmitted vertically through the generations. Yet unlike blood, which circulates only through intimate contact – sexual, medical, or otherwise – spirit can be “selectively activated through ritual and/or prayer” (213–4). As such, spirit is a “nonmaterial substance or essence” that can “cross lines” and leap across a landscape.¹²

One might wonder about the utility of horns or stethoscopes when it comes to nonmaterial and non-localizable spirits. After all, medical auscultation – at least as it has been bequeathed to contemporary practitioners by Laennec and his European contemporaries – is essentially just a generalization of the far older practice known as percussing, in which a physician knocks on a patient’s skin to ascertain the density of what lies beneath. Auscultation, in other words, functions according to a very simple mechanism of acoustic transduction, its only difference from percussing being that “auscultation
does not proceed by tapping blindly around, like percussion does: it stops at some points on the surface in order to overpunctuate them, by dividing their stigmatic unity, by listening to more than one sign in one point” (Szendy 2015, 22). What, then, would it mean to use a Pinard horn for umoya?

An excellent example of how horns are used in ailments caused by “nonmaterial substances” can be found in Victor Turner’s work with the Ndembu. While Turner did fieldwork in Zambia rather than South Africa, the basic ontological principles of life are shared widely across Africa’s southern region through principles of ubuntu (personhood) and ngoma (a spirit-drum-sound complex; see e.g., Janzen 1992). In his classic book, The Drums of Affliction (1968), Turner describes two rituals in particular: ihamba and kaneng’a. He writes:

Both rituals are performed to cure sickness. When either is invoked it is believed that the patient is being afflicted by a mystical agency. Ihamba is the name not only of the ritual but also of the afflicting agency, in this case the shade of a dead hunter, which is thought to inhere in one of the two upper front incisors of the dead man … Under the influence of the shade, the tooth is believed to fly about invisibly and to fix itself in the body of a living relative of the dead hunter. In this way it punishes a person who has failed to pour out a libation of blood or beer to the shade of the deceased, who has “forgotten the shade in his heart,” or who has offended the shade by quarrelling with his kinsfolk. In some cases the ihamba may afflict someone as a representative of a kin group that has collectively offended the dead hunter …. The tooth, it is believed, tries to avoid capture as long as possible, and travels about beneath the skin of the victor, dodging the cupping-horns. (114)

I have quoted this passage at length to illustrate just how mystical this ailment is. Where mediate auscultation transforms the vibrations of an organ into acoustic phenomena for the ear, the cupping horn searches for the tooth of a dead hunter to exorcize it from the body. Both are kinds of relation. Both deploy horns of some variety. But one would hardly say that mediate auscultation and cupping fulfill the same function.

As Turner elsewhere observes, cupping aims to remove “harmful objects” by “mystically propel[ling]” those objects “from the patient’s body” (1967, 341). Thus, when cupping is used for gynecological purposes – for example, in cases of dysmenorrhea (menstrual cramps) – treatment proceeds “symbolically.” Turner describes the treatment in detail: “[A] doctor goes to a stream with his patient and performs symbolic actions indicative of the removal of obstructions that impede the flow of the water and cause flotsam (= the disease) to pile up. The symbolism of two banks or sides is repeated in another form with the cupping horns – one in front and one at the back of the patient – and in the cutting of incisions on either side of the navel” (314–5). In other words, when blood is removed from the body to treat dysmenorrhea, this is done symbolically, almost mirroring externally what it aims to achieve inside the human body.

Similar types of “symbolic” (as Turner calls it) treatment have also been widely documented in South Africa. In their study of a community of rural women in KwaZulu Natal, Selepe and Thomas (2000) write about a number of measures taken by pregnant women and “traditional birth attendants” to secure the health of the fetus. For example, pregnant Zulu women often have their hair plaited, the idea being to prevent knots in the umbilical cord (Selepe and Thomas 2000, 99). In this case, there is no sensory or direct causal relationship between the antenatal practice and the fetus it
affects. Instead, the technique functions by means of an analogy between the plaited hair and a twisted umbilical cord.

It seems to me, in fact, that “analogy” is a truer characterization of such mechanisms than “symbolism.” Symbols, after all, are often purely conventional or arbitrary (in the Saussurian sense). But in both Turner’s examples (the flowing of rivers and blood) and in Selepe and Thomas’s (plaited hair and a knotted umbilical cord) the terms are structurally isomorphic rather than just symbolic. Philippe Descola (2008) identifies “analogy” as a “primary cosmology” of the world’s peoples that is also distributed widely across Africa. He describes analogy as a schema according to which “the world’s elements are ontologically distinct from one another, thence the necessity to find stable correspondences between them” (8). The example of plaiting to prevent knots in the umbilical cord certainly seems like a case of analogy. Other examples in Zulu antenatal care include prohibitions against “sleeping during the day, which may cause the baby to follow suit after delivery” and “peeping through doors and windows, which is believed to cause the fetal head to protrude, then recede through the vaginal orifice at delivery” (Selepe and Thomas 2000, 99–100).

Now, on the one hand these analogistic practices contribute to the establishment of fetal personhood in similar ways to what we saw in the earlier Xhosa examples. How? Because the life of the fetus (and later, the child) is determined by more than its morphogenetic development: it is also, and more importantly, determined by the bonds it establishes with others. In the cases that Selepe and Thomas describe, these bonds are analogistic rather than auditory or tactile. But bonds are indeed established through the careful adherence to particular practices or prohibitions. In this way, analogy is very much like the other forms of relationality we encountered earlier, for example, in cases where the fetus is heard or physically felt by another. By interacting with the fetus through analogy, fetal personhood is gradually established. Personhood – and indeed, life itself – is nurtured under the sign of ubuntu, of becoming a person through the actions of other people.

In some sense, then, it does not matter that analogistic practices do not directly touch the fetus, that they “interact” with the fetus at a distance and through the play of analogistic correspondence. Whether through direct sonic vibration (a midwife listening through a fetal stethoscope) or analogy (a passerby avoiding peeping through the window of a pregnant woman’s home), people in the community engage with the fetus and thereby add to its associations and personhood.

On the other hand, however, the mechanism of analogistic action is quite different from the kind of relationality often attributed to sound, that is, what typically goes under the banner of “transduction.” And analogy bears only an oblique relationship to other figures commonly associated with sound – vibration and resonance being the most common. Analogistic action does not make objects “vibrate” or “resonate” as much as it affords a kind of causation that leaps across physical space in some occult manner. Or else, if entities “touch” via analogy they do so through a formal correspondence (what I have also called a structural isomorphism) far more intimate than what physical space could ever allow.

What, then, is analogy precisely, and what resources might we deploy to adequately understand it? One way to clarify the contours of analogy may be to contrast it with a figure often harnessed in studies of sound: transduction. Earlier, when providing the broadest possible definition of a horn, I suggested that it might be understood as a transducer, a technology that transforms something (often energy or a message) into
another form. But does this definition adequately account for the analogistic practices described in relation to Zulu antenatal care and the *ihamba* ritual?

In its most common usage, transduction refers to the physical transmission or transformation of energy. Sterne (2003, 22) famously identified transduction as the fundamental principle of modern sound reproduction, noting that all technologies based on that principle “turn sound into something else and that something else back into sound.” Stefan Helmreich (2015, 222) elaborates: “Transduction names how sound changes as it traverses media, as it undergoes transformations in its energetic substrate (from electrical to mechanical, for example), as it goes through transubstantiations that modulate both its matter and meaning.” Examples are not difficult to come by, as Sterne (2003, 22) suggests: “Telephones turn your voice into electricity, sending it down a phone line and turning it back into sound at the other end. Radio works on a similar principle but uses waves instead of wires. The diaphragm and stylus of a cylinder phonograph change sound through a process of inscription in tinfoil, wax, or any number of other surfaces.” Early sound reproduction devices used the middle ear as a model, leading Sterne to call “the mechanical principle behind transducers tympanic.”

The notion of “the tympanic” as deployed by Sterne is meant only to underscore a particular transductive logic deployed in sound reproduction, and should in no way obscure the larger terrain of possible transductive processes. Consider the fetal stethoscope as it is deployed by a midwife in a typical medical setting: the heartbeat of a fetus generates vibrations that travel through the aquatic environment of the amniotic sac and through the medium of bodily tissue, then into the monaural stethoscope (or “horn”) and into the ear of the listener. Fetal stethoscope listening thus traverses multiple media, including the “environmental” media of air and water (Peters 2015) in a complex process that Lewis (2017) calls “amniotechnics” (cf. Helmreich 2007). Hence, although it does not deal with electrical energy, stethoscope listening is clearly “transductive” in the most basic sense of the word.

In the context of Western scientific practices – whether those of sound-reproduction technologies or auditory-based medical practices – the focus on transduction makes complete sense. Indeed, all the examples in the preceding two paragraphs (from the telephone to the fetal stethoscope) can be explained through a series of transductions. And yet, as Helmreich (2015, 228) notes about transduction, “It is important to understand the limits of the concept.” I quote him at length:

> Transduction would seem beside the point in getting at the sonic ecologies of social worlds like those studied by ethnographer-of-rainforest-music-and-sound Steven Feld (2003); in the Papua New Guinea he studied, distance and presence are otherwise materialized, through the synonymy of upward and outward sounding through the canopied forestscape. Transduction may not work to think about Paul Stoller’s work on Songhay possession, about which he writes: “for the Songhay, the ‘cries’ of the monochord violin and the ‘clacks’ of the gourd drum are the voices of the ancestors, voices filled with the power of the past” (2011: 112). Though one can imagine transduction being employed to understand these phenomena, it seems to me that the historical and technical specificity of the term attaches it more logically to cases that have at their heart technoscientific – and even electric, electronic, and electromagnetic – infrastructural instantiations.

In other words, the problems begin whenever a historically specific engagement with sound becomes the definition of sound itself (Helmreich 2015). But, against Helmreich’s warning, a large body of literature characterizes sound as *inherently* transductive. On this
view, sound is a material vibration in a medium. (This view is bolstered by its proximity to contemporary physics, even if not being reducible to it.)

Most historians of science, however, understand the equation of sound with transduction as a metaphor, as a mere way of thinking and talking about sound. For these scholars, the idea that sound “moves” or “travels” is likewise purely metaphorical. For them, there is no such thing as “sound in itself.” Helmreich (2015, 228) is himself a proponent of this position, which he pithily articulates: “Transduction is not the really real material substrate of sound. . . . [It is rather] a representational recipe with its own rhetorical, historical, and technical starting points.”

The debate between these two camps (which we might gloss as “realist” versus “constructivist”) has been rehearsed at length – I do not dwell on it here. My own view is that there are indeed reasons to doubt a naively realist account of sound’s ontology that would characterize sound as essentially transductive. But I am also not satisfied to simply catalogue the history of sonic metaphors. What analogism adds to the discussion, then, is a fundamentally different form of causal relation, similar perhaps to the Papua New Guinean “lift-up-over-sounding” or the ancestral voices of the Songhay. But contra Helmreich, I think we need to push beyond the interpretive framework of metaphor. In South African antenatal practice, analogism is more than a metaphor. I would argue, in fact, that both transduction and analogism are both “really real” social and material practices with ontological weight.

What one finds in South African antenatal care, ultimately, is a heterogeneous practice that incorporates horns in both ways: as transductive and analogistic. And life, it seems, emerges from the combination of these two forms of relation. In South African antenatal practice, to sense a beating heart is perhaps both to hear its vibrations and to decipher a hidden form of correspondence. The actual work done in this hearing and deciphering gradually builds up the personhood of the fetus (and later the child). The horn is not just a transducer between energy states: it is a portal between worlds.

Concluding remarks on the tympanic relation

This article has provided a synoptic sketch of antenatal care in southern Africa in relation to a variety of horn-based practices. Though this would be hard to verify, I suspect that the ubiquity of Pinard horns in African antenatal care is attributable, at least in part, to an extensive ensemble of other horn practices. I have emphasized that horns work quite differently in different circumstances, functioning either in a transductive manner or stretching the notion of transduction to, and perhaps beyond, the breaking point.

Acknowledging the range of practices is an important step in the decolonization of antenatal thinking. Moving conceptually between transduction and analogism causes a veritable ontological equivocation (Viveiros de Castro 2004; Ochoa Gautier 2019). As Xoli Makabane – a Johannesburg-based professional midwife who grew up in the rural Eastern Cape – told me, the biomedical establishment in South Africa desperately needs to seriously engage so-called “traditional” principles. For Makabane, this is at once a decolonial and a feminist gesture. She told me: “I think finally we will win the battle wherein there will be a recognition of the mom as a human being and not just as an object that has come to medical personnel to seek, or beg, for service.”16
My aim in this article has been to honor such a sentiment by advocating a conceptual reevaluation. As a final gesture in this spirit, I return ever so briefly to sound qua transduction. It is a truism of Western physiology that when sound passes from the outside world into the ear canal it must pass through – and be transduced by – the eardrum. The eardrum is therefore a kind of border separating the human body from the world at large. Jacques Derrida (1982) famously examined the eardrum as an organ that clearly establishes the separation between inside and outside, while simultaneously marking the point where inside and outside come into contact. In *Reason and Resonance*, Veit Erlmann (2010, 47) notes that for Derrida the eardrum “excludes the possibility of the self knowing . . . the true other that remains forever outside. To hear another is therefore always to hear oneself.” Rather than dwell on the metaphysical implications of Derrida’s work, Erlmann goes on to present a stunning genealogy of the eardrum in Western thought. Erlmann suggests that we consider the eardrum, “not as the privileged signifier of the operation of equilibrium we call philosophy, but as the product of the particular and the sign merging into a new style of scientific reasoning” (60).

In this article, I have shown how transduction has become both a style of reasoning and the definition of sound itself – both are evident in the biomedical deployment of stethoscopes, including fetal stethoscopes. But I have also shown that horns can serve a quite different function, and a quite different style of reasoning. Cupping horns in particular work at the level of analogy, as if – it would seem to the Western observer – by magic. Furthermore, South African concepts of personhood challenge Derrida’s lament that “hearing another is always hearing oneself.”

Whether we are able to hear those other conceptual frames depends, finally, on how we choose to listen.

**Notes**

1. Following Mol (2002), Rice (2013, 51) advocates maintaining a focus on “actual medical practices, rather than abstract concepts, at the center of efforts to understand disease.”
2. I have only found several brief mentions, in passing, in nineteenth-century periodicals: one in the *Natal Witness and Agricultural and Commercial Advertiser* and one in *The Journal* (a newspaper based in Grahamstown).
3. I will mostly refer to pregnant women in this article, particularly in cases where the people under discussion are almost exclusively cis-women. At other points in the article I will refer more generally to “pregnant people” to recognize that not all pregnant people are women. On this topic, see, for example, Stritzkeand and Scaramuzza (2016).
4. Intriguingly, in 1917 the botanist E. P. Phillips mentioned that a plant known in Sesotho as *semameloana*, or “the small one who listens,” was used by Basotho healers to concentrate pain on one side of the body to aid in chest auscultation (Phillips 1917). Very little information exists on this plant or how it was used, however. See Moteetee and van Wyk (2007).
5. This lyric was composed by the mission-educated composer Enoch Sontonga in 1897.
7. Interview with Marianne Littlejohn (Cape Town, 6 October 2015).
8. Interview with midwife (Cape Town, 7 October 2015). This midwife asked to remain anonymous.

9. “Of all births, 60% take place at primary level Community Health Centres and District Hospitals, 25% at regional hospitals and 15% at tertiary hospitals” (Wium, Vannevel, and Bothma 2019, 28).

10. Physicians (particularly male physicians) cannot be allowed sole domain over antenatal care. Nor can positivistic science monopolize discourse on the topic, especially when so much scientific literature continues to be motivated by finding ways to persuade Africans to abandon “harmful,” “traditional” practices, thus replicating centuries-old colonial logics.

11. Interview with midwife (Cape Town, 6 October 2015). This midwife asked to remain anonymous.

12. Thornton says that spirits “flow across the landscape,” but the figure of “flowing” seems inexact to me here. Note also that Thornton presents a more detailed cartography than what I have reproduced. He observes that the sangoma’s model of the body also incorporates aspects of “body” and “spirit.”

13. In (Peircean) semiotic terms, one would say that the association is “iconic.”

14. Elsewhere, Descola (2013, 201) provides the following partial definition: “the idea, common in Africa, that social disorders are capable of provoking climatic catastrophes, and also in the medical theory of signatures that bases the etiology and therapy of illnesses upon the apparent resemblances between, on the one hand, substances or natural objects and, on the other, symptoms and parts of the human body” (my emphasis). But he actually lumps several disparate examples under the rubric of “analogism.” In addition to Africa, he provides the example of Europe in the “Middle Ages and the Renaissance,” when a “great chain of being” connected all the elements of the cosmos (201). Can Zulu antenatal practices in contemporary South Africa be compared with premodern European thought? That “analogy” seems far-fetched.

15. If one considers that vibrations from the horn are finally converted into energy processed by the nervous system, then indeed stethoscope listening includes electrical energy transduction, as well.

16. Interview with Xoli Makabane (Johannesburg, 21 October 2015).

17. This scientific reasoning was related to new styles of philosophical reasoning as well. Of particular interest, here, is Ermlmann’s (2011) illuminating work on Descartes’ writing on the fetus. The fetus, as it turns out, presented numerous problems for Descartes’ famous theory of subjective dualism.

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References


