

The Many Dimensions of Silence: An Interdisciplinary Approach

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Abstract: What is silence? According to *The Oxford English Dictionary*, silence is “abstaining or forbearing from speech.” However, an interdisciplinary approach to silence suggests that it can have many different meanings. Acoustic ecologists have a special interest in the “quiet” of natural soundscapes and the negative effects of noise on birds and marine life. As for human beings, we have a persistent drive to develop technology, and the noise of our machines is ubiquitous. In the first half of the nineteenth century, physicians began to ask about the link between certain industrial occupations and hearing loss. More recent studies in psychology have focused on the connection

between noise and stress, and how human beings learn to cope with noise as they perform certain tasks. In education, teachers worry about the way media noise displaces reflective silence in the inner lives of their students. The spiritual significance of silence is described in Biblical tradition and in the monastic rule of St. Benedict. Many legal traditions recognize a right to remain silent. When it comes to moral decline in organizations, would-be “whistleblowers” must decide whether they will break the prevailing “code of silence.” On the other hand, we should not discount the possibility that in other social contexts, silence can be an effective form of protest and a prelude to social change.

KEYWORDS: silence, environmental noise, Benedictine Rule, the right to remain silent, whistleblowers, Truth and Reconciliation Commission.

1. The Catalyst for a Reflection on Silence

The catalyst for this reflection on silence is a certain sense of dissatisfaction with the definition provided by *The Oxford English Dictionary*: “abstaining or forbearing from speech” (OED 1989). Silence, however, can be much richer than the OED’s brief definition suggests.

Johannesen marked out some directions for the kind of inquiry I pursue here:

The person lacks sufficient information to talk on the topic. (2) The person feels no sense of urgency about talking. (3) The person is carefully pondering exactly what to say next. (4) The silence may simply reflect the person’s normal rate of thinking. (5) The person is avoiding discussion of a controversial or sensitive issue out of fear. (6) The silence expresses agreement. (7) The silence expresses disagreement. (8) The person is doubtful or indecisive. (9) The person is bored. (10) The person is uncertain of someone else’s meaning. (11) The person is in awe, or raptly attentive, or emotionally overcome. (12) The person is snooty or impolite. (13) The person’s silence is a means of punishing others, of annihilating others symbolically by excluding them from verbal communication. (14) The person’s silence marks a characteristic personality disturbance. (15) The person feels inarticulate despite a desire to communicate; perhaps the topic lends itself more to intuitive sensing than to verbal discussion. (16) The person’s silence reflects concern for not saying anything to hurt another person. (17) The person is daydreaming or preoccupied with other matters. (18) The person uses silence to enhance his own isolation, independence and sense of self-uniqueness. (19) The silence marks sulking anger. (20) The person’s silence reflects empathic exchange, the companionship of shared mood or insight (1974, 25).

Following Johannesen’s lead, then, I will take an interdisciplinary approach to explore some of the many dimensions of silence.

2. Silence: Ecological Approaches

In Robert Frost’s poem, “The Census-Taker,” a civil servant, a city dweller, ventures into what is left of a Vermont forest. He is an “enumerator.” His task is to find people living on small farms,

or teams of loggers at work, and to interview them. Instead he finds that within a hundred square miles, all the trees have been cut down and the area has been abandoned:

The time was autumn, but how anyone
 could tell the time of year when every tree
 That could have dropped a leaf was down itself
 And nothing but the stump of it was left
 Now bringing out its rings in sugar of pitch;
 And every tree up stood a rotting trunk
 Without a single leaf to spend on autumn

He is dumbfounded by the lifeless silence he encounters there—no birds, no human inhabitants, only “An emptiness flayed to the very stone.” Little wonder that he is overcome with melancholy as he surveys the desolate scene (Doreski 1988).

Wilderness places, places where wildlife can flourish, *are* becoming harder to find. It takes more determination now, but human beings still seek them out, because we long for quiet and a sense of “sanctuary” in our lives. Perhaps no one is more serious about finding quiet places than acoustic ecologists, but when they take their sophisticated listening equipment with them into wilderness settings, they are also anticipating that – against a background of silence -- they will be identifying a rich matrix of *many* sounds, such as the humming of insects, birdsongs and calls from animals engaging in courtship rituals (Hempton 2017).

Birds rely on a repertoire of sounds to communicate with each other, but androgenic noise – noise created by humans and technology—can have serious negative effects that prevent them from flourishing. Their reactions to noise vary, depending on the species of bird, the type of noise they encounter, the frequency of the noise, its loudness, and its duration (Shannon 2016). Noise pollution near roads and highways can be harmful to birds’ auditory systems (Francis 2017). Invasive engine noises from personal water craft and motorboats often trigger fright-flight responses in shore birds (Burger 1998). Species that gather in colonies are especially susceptible to noise, since as soon as one bird reacts, many or all the birds in a colony will follow that initial fright response (Carney & Sydeman 1999). The foraging behavior of some birds can be disrupted by noise (Canaday & Rivadeneyra 2001) and reproductive success declines when birds are subjected to noise from all-terrain vehicles (Borneman 2016). Noise also interferes with the ability of birds to hear and avoid predators (Barber 2010). Noise can be a major factor in the displacement of birds from territory where they were once common (Brotons & Herrando 2001). These territorial shifts can have an adverse effect on other forms of life, too, since the birds missing from an area are no longer available for pollinating plants or dispersing plant seeds (Francis 2012).

In ocean environments, humpback whales communicate with each other over vast distances by “singing.” Marine biologists theorize that their songs may function in several ways. (1) They can be taken as an index of association, as if to announce: “During this migratory season, I belong to *this* pod.” (2) At other times, their songs function in an agonistic way, as a form of competition in which males try to display their fitness to a prospective mate. (3) Their songs also function as a means to organize their efforts to capture prey, a way of cooperating with each other in order to find food (Darling 2006). Androgenic noise can interfere with whale communication, however, making life much more difficult for them. Commercial vessels are a major source of underwater

ambient noise, which limits the geographical range of what whales can hear. Sonar blasts from naval operations can wreak greater havoc in their world of sound, making it difficult for them to sense where they are and what is happening in their environment (Weilgart 2017).

What these various studies have in common is an emphasis on the harmful effects of noise. Animals communicate by transmitting specific forms of structured sound, but for these signals to be received, they have to be heard against a background of relative silence. Too much background noise makes it impossible for them to hear these vital messages.

3. A Public Health Perspective: Hearing Loss and Occupations

An English physician, Caleb Hiller Parry, was one of the first to make the connection between a person's occupation and hearing loss. He reported in 1831 that he had examined many navy personnel who were deaf on account of their proximity to cannon fire. Among them was Royal Navy Admiral Lord Rodney, whose flagship *Formidable* had fired eighty broadsides against the French in the Battle of the Saintes in 1782 (Thurston 2003). Joseph Williams (1840) noted a similar aetiology: "Artillerymen, blacksmiths, and the blasters in mines often become deaf." Textile mills, too, were widely recognized as places where workers might gradually lose their hearing. The proliferation of steam engines in factories and railroads created new jobs for boilermakers throughout the nineteenth century, but since their work involved hammering metal plates and rivets *inside* of metal boilers, many of them lost their hearing after only a few years on the job (Toynbee 1860).

Who is at risk of losing their hearing today? Conversations at home register at about 60 dB. The traffic noise heard by truck drivers in the city is 85 dB, just below the range in which sustained exposure can harm hearing (90-95 dB). If human beings are 50 feet away from a jackhammer being used at a construction site, they can expect to experience a noise level of 95 dB. Many lawnmowers produce 105 dB, which is hazardous to an operator's hearing. Since ambulances need to be heard over other forms of noise, their sirens are rated at about 120 dB. The estimated range of exposure for anyone who plays in a rock band or attends a rock concert is 120-150 dB (Chepesiuk 2005). Baggage handlers and aircraft mechanics need to be especially vigilant when it comes to protecting their hearing, as jet engines produce noise levels of 140dB (Center for Disease Control 2017).

A survey of workers at an underground gold mine in South Africa observed that only half were wearing the hearing protection freely provided by their employer, even though they worked in enclosed spaces where noise was at least 85 dB (Hansia & Dickinson 2010). Workers in lumber mills in British Columbia are often exposed to noise levels of at least 90dB from saws and planing machines (Davies 2009). In Nigeria, workers in a glass bottling plant showed significant hearing loss over a two-year period after coping with noise levels from 91dB to 97dB (Olajide 2008). Spinners and weavers in India's textile factories must deal with even more severe conditions, as the noise of the machines they work with registers between 90 and 110 dB (Bedi 2006). These studies indicate that noise-induced hearing loss in unprotected workers continues to be a world-wide problem (Nelson 2005).

4. When Is Noise Beneficial? Psychological Accounts of Silence/Noise

Some theories in psychology complicate this assessment by offering a more positive account of *some* kinds of noise and by arguing that silence might not *always* be more desirable. In the 1970's Donald Broadbent and Christopher Poulton engaged into a theoretical debate about the effects of noise on the performance of tasks. Broadbent's model of performance states that some forms of noise increase arousal because they help a person narrow his/her field of attention (1978). At relatively lower levels of arousal, this narrowing of attention facilitates performance because it helps the individual exclude irrelevant cues. Beyond an optimal level, however, increases in arousal cause task-relevant cues to be excluded, and performance is impaired. Poulton (1976) argued for a composite model of noise effects involving arousal and the masking of inner speech. From this perspective, the gains in performance in continuous noise early in the task occur because the increase in arousal compensates for the deleterious effects of masking. However, as more time is spent on task, arousal decreases, and masking effects come to dominate.

Hancock and Warm (1989) joined the discussion ten years later. Their model of silence/noise describes a general "comfort zone" in which there is neither too much stress nor too little. There is enough noise to prevent a person from falling asleep, but not so much as to overpower his/her attention to the task. On the lower end of the scale, we might find complete silence unnerving, while on the upper end of the scale there is a point at which too much noise makes it impossible to concentrate (Lonsdale & North 2011). Yet there appears to be a fairly wide zone in which noise can work to our advantage—an alarm clock prevents me from being late for work, a warning bell reminds me to fasten the seatbelt in my car, the chiming of the kitchen timer suggests that the bread is ready to come out of the oven ... Other types of noise can be annoying, though not completely distracting: the sounds made by a dishwasher (Ozturk 1996), the whine of a vacuum cleaner (Fatima & Mohanty 2012) or the colleague who insists on playing "his" kind of music in the office (Hodgetts 2014).

Reflecting more generally on the interplay between stress and the desire for a completely stress-free life, Kaplan suggests human beings need phases of stimulation followed by phases of restoration. The rhythm between them "is essential to a coherent life and to the identification and carrying out of worthwhile purposes. Looking back on a life of purpose and productivity, even if one experienced some stress along the way, might well be more satisfying than looking back on a stress-free life in which little was accomplished" (Kaplan 1995).

5. The Noise of Media Versus the Child's Need for Silence

Audiologists have expressed concern that recreational MP3 use might be causing physical damage to the hearing of an entire generation of young people (Twardella 2017). Researchers at The Kaiser Family Foundation (KFF) have been asking a somewhat different question, however: Does the noise of media displace reflective silence in the inner lives of children? KFF conducts surveys on media use by young people, from newborns to 18 years old. In 2005, KFF reported that young people spent an average of 6 hours per day with television, music, or computer-based entertainment (Rideout 2005). In 2010, that average had jumped to about 7.5 hours per day, or 53 hours per week – the equivalent of a full-time job with overtime (Rideout et al 2010). Newborns

are initiated into media use almost as soon as they come home from the hospital, and year by year their exposure to the “noise” of electronic media increases, until they reach a plateau in high school (Altimier & Phillips 2016). Young people are strangers to silence, and the odds are good that they will grow into adults who are strangers to silence, too.

Teachers witness the results every day. Their students are always learning from an informal curriculum of commercial ads from television, recorded songs, cartoons, televised gossip, sports images, viral videos and smart phones (Gitlin 2003). The official curriculum approved by an older generation will almost certainly have less appeal. It cannot deliver the same emotional jolt that popular culture can, since the two primary characteristics of the informal curriculum are permissiveness and immediate entertainment. And if the real world should turn out to have long stretches in which nothing exciting happens and the range of choices is unexpectedly narrow? Students may not have developed the inner resources to cope with such challenges. At some point in life, those resources need to be nourished in reflective silence – silence, rather than continual noise.

6. Silence in Scripture and Tradition: Elijah and St. Benedict

The story of the prophet Elijah is found in 1 Kings. The respect for silence that Buber describes was not part of Elijah’s natural make-up. Elijah stirred up dramatic events wherever he went. After he challenged the prophets of Ba’al to a contest of fire up on Mt. Carmel, he called upon God to send down lightning. YHWH obligingly did so, and Elijah took this a sign that he should purge the land of Jezebel’s prophets. In the wake of Elijah’s victory, four hundred prophets of Ba’al were put to the sword without mercy. Fleeing, then, from the anger of Queen Jezebel, Elijah hid in a cave and waited for the Lord to come and rescue His most faithful servant from danger.

A great wind passed by the mouth of the cave, strong enough to break the rocks in two. Elijah expected *his* mighty God to speak to him from out of that wind, but he heard nothing. Then came an earthquake, and Elijah thought that God might speak to him through an event of that magnitude, but God was not in the earthquake. After the earthquake came a roaring fire, but God did not address Elijah from the fire, either. Elijah must have been disappointed when God finally did speak to him, in a still, small voice (1 Kings 19:12). Elijah had been expecting great signs and wonders, but suddenly he was forced to question the correlation he had been making all along between faith in God and the annihilation of all his enemies (Tonstad 2005). At the cave on Mt. Horeb, God did not come to Elijah as an overpowering champion to be summoned for every battle that Elijah himself wanted to fight, but as a voice that was very close to silence.

Christian monasticism has been shaped by the practices of silence since the time of St. Benedict (480-543AD). Benedict and his followers deliberately chose geographical settings that were far away from the noise and business of the city. St. Benedict’s *Rule* seeks to replicate the *silentium* of the wilderness within the walls of the monastery. The Latin word *silentium* is often translated into English simply as “silence,” but “stillness” might be a more appropriate word. Benedict teaches that, while silence is a monastic ideal, complete silence is not possible (Gehl 1987).

Chapter 6 of Benedict's *Rule*, "On The Spirit of Silence," focuses on the importance of keeping silence – *taciturnitatis*. Benedict says, "Much talk will lead to sin," an admonition based on Proverbs 10:19. There are specific times and places in which the monks must do their best to be silent: at meals, in the dormitory (Chapter 48) and in the oratory. Apart from praying or chanting The Divine Office, monks are to observe "complete silence" (*summum silentium*) while in the oratory (Chapter 52). They may enter the oratory at other times for personal prayer "in secret" (*secretium orare*), but they are not to pray "in a loud voice" (*non in clamosa voce*). When they are eating in the refectory, the monks should observe a deep silence *summo silentio*, giving their attention to *lectio divina*, a continual cycle readings drawn from Scripture and from the Church Fathers (Chapter 38).

In Chapter 42, "Let No One Speak after Compline," Benedict employs both *silentium* and *taciturnitas*. The monks should endeavor to abide by "this rule of keeping silent" (*hanc taciturnitas regulam*). Yet, there are other times when the silence of the monastery might be broken legitimately: for the reading of scripture, for the sake of hearing confessions, for the business of chapter meetings, for the instruction of novices, for practice in chanting The Psalms, and for helping a fellow brother in need. Even in Trappist monasteries, "there is a special dispensation from the rule of silence for the monks who deal with the abbey livestock when they are actually addressing their dumb charges" (Fermor 1957, 66).

7. The Historical Origins of the Right to Remain Silent

Beginning in the year 1215, the Catholic Church sometimes made use of a legal process called *inquisitio* in order to discover whether a person held heretical views or inner thoughts contrary to Church teaching. The inquisitor had very broad powers of discovery, including the ability to question the accused directly in an attempt to force him to confess that he held views that were unauthorized by the Church. In 1252, Pope Innocent IV issued a bull, *Ad extirpanda*, that added torture to that list of powers. If the accused did not reveal enough information about his beliefs to satisfy the inquisitor, the inquisitor was allowed to order that he be tortured. The goal was to extract a confession from the accused that could be used against him. It was legally permissible for the accused to be imprisoned for years in a dark dungeon, in solitary confinement, starved, nearly frozen, and helpless, and then brought to the rack, in an effort to make him give evidence against himself.

While the *inquisitio* thrived on secrecy, judicial proceedings in England were more open to the public, and English judges were much more likely to refrain from using torture. The Star Chamber, however, was a notable exception. Operating under royal prerogative, it began meeting in secret sometime in the fourteenth century. Subsequently, the Star Chamber was responsible for issuing most of the torture warrants in England for three centuries. Its power grew during the reign of Henry VIII. When Henry united church and state under his supreme leadership in 1534, the distinction between heresy and treason disappeared and they were blended into one offense. Whoever disagreed with the king in matters of religion or state policy was in danger of being executed. Many people in England came to resent the power of the Star Chamber, as it was used more and more to suppress religious and political dissent. Just prior to the English Civil War, the Star Chamber was abolished by the Long Parliament (Levy 1968, 281).

Today, most liberal democratic societies have a judicial process that (1) focuses on culpable actions rather than on inner thoughts, and (2) a system in which there are multiple actors with specific roles to play – accuser, prosecutor, defense attorney, judge and jury – since the power of a single inquisitor is deemed too great. The right to remain silent is protected in Canada, for example, under sections 7 and 11(c) of the Canadian Charter of Rights and Freedoms. According to these provisions, no person shall be compelled in a court of law to be a witness against himself.

8. Speaking Up/Remaining Silent: Moral Life in Society

In organizations, employees are sometimes faced with a moral choice that weighs heavily on their consciences. If they have knowledge that someone in their organization has acted in an immoral way, they must decide: Will they speak up about what they have learned, or will they keep on with their work, acting as if they know nothing?

Knoll and van Dick (2013) discuss four forms of employee silence: acquiescent, quiescent, prosocial and opportunistic silence. (1) Acquiescent silence implies that the employee is discouraged and has no expectation that his information will be heard or acted upon by those above him in the organization. Because he has given up hope for improvement, he is not willing to exert the effort to speak up, get involved, or attempt to change the situation (Farrell 1983). (2) Quiescent silence refers to withholding relevant information in order to protect oneself, based on the fear that the consequences of speaking up would be personally unpleasant – being shunned by co-workers, being dismissed, losing the possibility of promotion, and in some cases, risk of physical harm. Fear is the key motive for quiescent silence (Morrison & Milliken 2000). (3) Prosocial silence refers to withholding work-related information with the goal of benefiting other people in the group, based on cooperative motives. A “code of silence” among police officers or a reluctance to reveal information about a company’s flawed consumer product are examples that might be regarded as silence based on a misguided sense of loyalty to the group (Westmarland 2005). (4) Opportunistic silence refers to an employee’s decision to withhold information for more selfish reasons – such as retaining power or status in the organization. Opportunistic silence is essentially a decision to hide or cover up wrongdoing (Connelly 2012).

Yet, some people do find the courage to reveal the truth about wrongdoing in the organizations they have served. In a well-publicized case, Sherron Watkins was the accountant who spoke up about financial fraud at Enron in 2001 (Beenen & Pinto 2009). Integrity, courage, moral outrage and hope that a public stand might make a difference on behalf of others—these considerations help explain why some people decide to become whistleblowers, overcoming the temptation to remain silent.

There are other settings, however, in which silence can be an effective means of protest. South Africa’s Truth and Reconciliation Commission (TRC) provided a forum in which the horrors of apartheid could be brought out into the open. The guiding principle of the TRC was that those who testified about their unjust actions under the former regime would receive immunity from prosecution. Under normal courtroom procedures, the truth about what happened to lost loved ones would never be revealed—that would be one kind of “silence,” the silence of guilt and cover-up. This transitional body, however, was given the task of discovering “antecedent

circumstances, factors and context of gross human rights violations as well as the causes, motives and perspectives of the persons responsible (Motsemme 2004).” Surviving family members and perpetrators might meet face to face, and testimony concerning the truth of the victims’ fate might make it possible to build a new future for South Africa, without the need to settle old scores. Restorative justice would be the ideal, rather than retributive or punitive justice.

Though the Truth and Reconciliation proceedings are typically thought of as a national drama, the women who lost relatives in the violence of the old regime usually told their stories in very personal terms about the hardships and separations their families faced after their loved ones “disappeared.” Mothers often told of how they withheld information from the white policemen when they came to inquire about the whereabouts of their sons—they kept silent, for the sake of their children—a silence of resistance (Motsemme 2004, 915).

The testimony of the mothers of South Africa reveals another use for silence: silence providing the illusion of stability. When older children were no longer at home—because they were fleeing from the special police or because they had been killed—many mothers decided not to speak to the younger children about these absences. They deemed it better carry on as normal for the sake of their younger children, though there was violence going on all around them—a shielding kind of silence, employed by mothers who wanted to carve out an imaginary haven of calmness in the context of their home. In some respects, it was a silence of denial, while in other respects it was a strategy for survival. Otherwise, hope for the future of their younger children might have been lost to fear (Motsemme 2004, 921).

At other points in their testimony before the TRC, women described their recourse to prayer as a way of asking God for new strength, even for the reconstitution of self (Motsemme 2004, 925). In the silence of prayer, they felt free to pour out their grief before God. In the silence of prayer, they could ask God to transform the broken world, to create a new heaven and new earth.

The catalyst for this interdisciplinary reflection was a sense of dissatisfaction with the limitations of *The Oxford English Dictionary* and the definition it gives for “silence.” It is not that the venerable OED is wrong, but it does not go far enough or deep enough to cover the many possible meanings of silence. Yet, how could any dictionary do that? So, biologists know something about silence, as do physicians, lawyers, psychologists, monks and mothers. There is a time to speak and a time to keep silent, according to Ecclesiastes 3:7, but it may take an uncommonly wise person to discern the difference. And now I will bring this reflection to a close by stating a haunting paradox: we have need of a more sustained dialogue on the meaning of silence.

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