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## **The Interplay of Experience and Social Structure: Adaptation through Media**

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**Conference Paper ( Graduate)**

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### **Abstract**

In this investigation, I explore the tensions which self-referentially emerge within our constructed 'nature'. I begin by exploring the origins of our contemporary media environment as discussed by McLuhan. I then interrogate the challenges of digital life through a close reading of the work of technology critic Giles Slade. I then conclude by situating these seemingly competing views of mediated existence within the framework of social systems theory. Through the lens of social systems theory, I reframe our contemporary technologies as adaptations to past challenges which also shape our experience of the potential choices and challenges of the future.

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### **Introduction**

Portable media of communication have brought human beings closer in some ways, albeit in others, farther apart. With the ability to transmit messages over vast distances, early Western civilization began a process of fragmentation and specialization that reached a turning point with the invention and mass adoption of the printing press. Encouraging uniformity and individualism, the printing press facilitated the distribution of knowledge amongst authors and readers who may have otherwise have never encountered each other's ideas, while also gradually establishing boundaries between works of fiction, criticism, and science. While facilitating communication between readers and writers, the medium of print increased the potential physical distance between authors and readers and facilitated a fragmentation of previously heterogenous ideas of natural science largely in service of theological interests. The resulting functional boundaries of, for example, art and science, remained largely fixed until the emergence of new media environments that were subsequently erected in responses to new social challenges: notably telegraphy, radio, television, and most recently the digital environment of the internet. The global COVID-19 pandemic has forced

many into an unprecedented reliance on digital devices for communication with friends and family, to continue making a living remotely, and for entertainment purposes, seemingly collapsing distinctions between one's lived and digital life and similarly disrupting functional boundaries of entertainment, reality, art, and science etc. Through consideration of Marshall McLuhan's theories of media *vis a vis* Niklas Luhmann's theory of social systems, I suggest we may observe the seeming collapse of functional systems of communication as symptomatic of immersion within our contemporary digital environment; an environment erected in response to challenges of past and ever contingent on those of the present and future.

The work of Canadian media theorist Marshall McLuhan has often been contested on the basis of seemingly illogically organized arguments, his unconventional approaches to the study of culture through media, and indeed, the overall difficulty posed by works of sophistication beyond typical public or academic comprehension (Pressman 2014, 28). These criticisms, largely refuted by Paul Levinson (2000), reiterated for modern audiences by Alan Jacobs (2011), and shamelessly admitted by McLuhan himself in a 1969 interview with *Playboy Magazine* (Rogaway 1994), indicate the effectiveness, if not provocative nature, of McLuhan's often-misunderstood rhetorical polemics. The theories of McLuhan can most pertinently be understood as an examination of "the personal and social consequences of any medium that is, of any extension of ourselves—[and] the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" (McLuhan 1964, 7). For McLuhan, any media—any technology—is a sensuous extension of the self; media is defined more broadly as anything that extends the spatial, temporal, or physical capability of human faculty (Gordon 2011, xx).

On the basis that "the 'message' of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs" (McLuhan 1964, 8), McLuhan distinguishes phases in social development: tribalized society, the "mechanical" age, the "electric" age, and with recent scholarship attempting to modernize his research, the "digital age" (Logan 2010). Recent interpretations of McLuhan's work explicate the relevance of these distinctions, explaining that, "the terms barbarian or tribal man, civilization, [and] electric worlds immediately evoke three different social constructs; they imply three different relationships between the individual and the environment, also denoting a different sensorial order" (Lamberti 2011, xxxi). If we consider, for our purposes, the Western world as a self-contained environment of human behaviour and necessity, and that "technological adaptation is specific to local environments because the problems that need to be solved vary from place to place" (Boyd et al. 2013, 120), new media become adaptations to a world reshaped by previous technological developments, and thus McLuhan points to a total integration of our environment with extensions of ourselves, suggesting "the new media are not bridges between man and nature: they are nature" (McLuhan 2011, 28).

In this investigation, I explore the tensions which self-referentially emerge within our own constructed 'nature'. I begin by exploring the origins of our contemporary media environment as discussed by McLuhan. I then interrogate the challenges of digital life through a close reading of the work of technology critic Giles Slade. I then conclude by situating these seemingly competing views of mediated existence within the framework of social systems theory. Through the lens of social systems theory, I reframe our contemporary technologies as adaptations to past challenges which also shape our experience of the potential choices and challenges of the future.

### **Ordering and Reordering Experience**

For McLuhan, "the spoken word involves all of the senses dramatically" in a simultaneous field, unlike the visual reductionism of writing, and later printing (McLuhan 1964, 84). The invention of writing alone could not, however, induce a distortion of sensuous ratios radical enough to alter existence from this acoustic world. Until the invention of the printing press, manuscript culture remained primarily an oral medium. To this effect McLuhan suggests that the modern reader perceives the world differently than its forerunners in medieval manuscript culture (McLuhan 2011, 101). Earlier, the phonetic alphabet itself made possible both a seemingly schizophrenic Cartesian perception of the world and construction of Euclidian spaces therein (McLuhan 2011, 7). The separation of speech from time and its re-entrance in space via writing represents for McLuhan "the separation of sight from the other senses" (McLuhan 2011, 15): ultimately, "the interiorization of the technology alphabet translates man from the magical world of the ear to the neutral visible world" (McLuhan 2011, 21). Thus, in the pre-mechanical age that is subsumed under the moniker the 'Gutenberg Galaxy', utterance is displaced and compressed from the diverse interplay of spaces afforded by unbiased sensuous perception: "the phonetic alphabet reduced the use of all the senses at once, which is oral speech, to a merely visual code" (McLuhan 2011, 51).

The rules of grammar and syntax govern this visual code: they are containers of meaning, signifiers of things both physically present and not. These representations allowed for the Cartesian division of mind and body. As McLuhan explains, "in a highly literate society... visual and behavioural conformity frees the individual for inner deviation. Not so in an oral society where inner verbalization is effective social action" (McLuhan 2011, 24). It is from the displaced balance of visual emphasis over all other sensuous experience that the literate, detribalized civilization thus emerges: one who's social organization is equally bound by the effects of linearity in thought wrought of typographic grammar and organization (McLuhan 2011, 26-7).

The printing press augmented the abstraction of the alphabet from simultaneous time and space. The literature created following the development of the printing press accordingly emphasizes a private

perspective, a fixed point of view. When considered in the context of the private consumption of printed material made possible by grammar and literacy juxtaposed to the interplay of senses necessary to former scribal oral and performative reading, a form of privatization of experience unknown to the centuries before the 'Gutenberg Galaxy' can be observed (McLuhan 2011, 64). Representing the previously discussed shift from the world of the ear to the world of the eye, McLuhan asserts that "the visual makes for the explicit, the uniform, and the sequential in painting, in poetry, in logic, history. The non-literate modes are implicit, simultaneous, and discontinuous" (McLuhan 2011, 65).

Spoken aloud, the word exists in time; printed the word becomes displaced from time and relegates its existence solely to abstract visual space (McLuhann 2011, 120). The performance of manuscript involved the interplay of the senses in such a way that privatized reading rendered impossible; moreover, the codification of typographic consistency in typefaces and stylistic expectations enforced repeatability in keeping with linear uniformity, the laws of grammar, and syntax arising from typographic representation (McLuhan 2011, 89, 95). As McLuhan concludes, "this uniformity and repeatability of typographic technology, quite alien to manuscript culture, is the necessary preliminary to unified pictorial space and 'perspective'" (McLuhan 2011, 128). A fixed point of view was thus not possible in scribal culture, and emerged in lieu of an "ingraining of lineal, sequential habits... the visual homogenizing of experience in print culture, and the relegation of auditory and other sensuous complexity to the background" (McLuhan 2011, 144). With perspective came individualism, uniformity, and privacy that became normative, displacing the communal nature of life in the pre-Gutenberg era (McLuhan 2011, 135). Indeed, "the invention of typography confirmed and extended the new visual stress of applied knowledge, providing the first uniformly repeatable commodity, the first assembly-line, and the first mass production" (McLuhan 2011, 142). It is in addition to the perspective granted of the medium that a newly developed, privatized consumer culture would place greater emphasis on authorship and authenticity as opposed to the collective forging of mosaic manuscript culture (McLuhan 2011, 150).

In its ability to extend the temporal and geographic range of communication, the printing press thus imposed stricter divisions "between producers and consumers, and between rulers and ruled" (McLuhan 2011, 268). The collapse of the otherwise necessary transgression of time and space in the dissemination of information indeed had radical consequences for the structure of society. Tellingly, McLuhan explains that:

...the role played by print in instituting new patterns of culture is not unfamiliar. But one natural consequence of the specializing action of the new forms of knowledge was that all kinds of power took on a strongly centralist character. Whereas the role of the feudal monarch had been inclusive, the king actually included in himself all his subjects, the Renaissance prince tended to become an exclusive power

centre surrounded by his individual subjects... the result of such centralism, itself dependent on many new developments in roads and commerce, was the habit of delegation of powers and the specializing of many functions in separate areas and individuals (McLuhan 2011, 12).

However, with the advent of telephony, the viscosity of the 'Gutenberg Galaxy'—inclusive of its uniformity and specialization—seemingly collapses into comparably equalized unified field of sense ratios, to use McLuhan's term. McLuhan describes the effects of telephonic media on culture more broadly, stating that:

The mechanization of writing mechanized the visual-acoustic metaphor on which all civilization rests; it created the classroom and mass education, the modern press and telegraph. It was the original assembly-line... Gutenberg made all history Simultaneous... By surpassing writing, we have regained our WHOLENESS, not on a national or cultural but cosmic plane. We have evoked a super-civilized sub-primitive man (McLuhan 1969, 26).

What McLuhan describes is a post-Gutenberg return to de-civilization (what we will later understand to be synonymous with "de-differentiation"). Though paradoxical, there is justification for McLuhan's seemingly vehement point and terminology. Similar to the intentionally mosaic like structure employed in this essay, the book which influenced it, McLuhan's *Gutenberg Galaxy* monograph, itself posits a "parody of print technology," specifically one that has "[impoverished] the integration of the five senses by privileging the eye alone." This is carried out not as an attack on the effects of book culture, but instead is suggested to provide an alternative: the reintegration of senses, once lost to visual bias, rendered possible in the "post-Gutenberg era" (Gordon 2011, viii). W Terrence Gordon suggests that "many commentators radically misread McLuhan as intending to hasten the collapse of book culture... [though he] explicitly states that retaining book culture can only be done by avoiding the errors of the past" (Gordon 2011, viii). These errors of course lie in the inability of society to adapt to the alterations of sense ratios induced by new media, especially as "competitive individualism had become the scandal of a society long invested with corporate and collective values" (McLuhan 2011, 12). As we have seen, writing wrought from speech produced "effects in social and cultural organization that endure to the present." However, "the powerful extension of speech permitted by the development of radio produced a similar loss, for this medium reduced speech to one sense – the aural" (Gordon 2011, xvii).

Returning to my opening commentary McLuhan's research is – in some circles – conventionally disputed. Yet, *The Gutenberg Galaxy* intentionally sets forward:

...the expression of insights through aphorisms and a mosaic structure of presentation, the expectation that readers will make their own discoveries, an abhorrence of the debilitating effects of the specialist knowledge, a concern with the power of form to alter the action of other forms, the identification of cultural patterns in their psychical and social dimensions on the basis of a society's dominant technology, and, above all, a refusal to present ideas with any concession to the expectation of readers (Gordon 2011, xii).

Through McLuhan's unorthodox rhetorical organization he "[awakens] us and alerts us to the difficulties of grasping the long-term effects of all technological innovations on our senses and on our realities" (Gordon 2011, viii). By confronting us with a mosaic intended as complete sensuous immersion, McLuhan evokes literacy wrought of the Gutenberg era while simultaneously immersing us in the world of sound abandoned in its wake: this electric world of sound indeed representing a partial return to the simultaneous field of sensuous ratios experienced in non-literate civilization. For McLuhan, the new media "reconfigure our world in the form of a global village," and it is within this context that in our embrace of mediated communication we return to the sort of non-literate social organization, devoid of specialization, found in the eras preceding the 'Gutenberg Galaxy'. McLuhan describes the telephone as "speech without walls," the phonograph as "music without walls," and the movie, radio and television as "classroom without walls" (McLuhan 1964, 309).

Indeed, "all the new media, including the press, are art forms which have the power of imposing, like poetry, their own assumptions. The new media are not ways of relating us to the old 'real' world; they are the real world and they reshape what remains of the old world at will" (McLuhan 1969, 23). We may then locate the criticisms of McLuhan in the noted strain and psychological stress the philosopher himself observes in the transitional period between dominant media. Where the "global village" entails unprecedented communicative possibilities, larger trends in socio-cultural evolution amplify the tensions noted as well as unanticipated social consequences.

Giles Slade, for instances, reminds us that "long before portable devices like the transistor radio (1954) or the Walkman (1979) began insulating us simply by shutting out unwelcome noise in public contexts and making us socially inaccessible, there was the comfort, isolation, and safety of the car" (Slade 2012, 55). Slade suggests that "driving alone had become a distinctly American pastime, but being alone and in silence for prolonged periods was difficult for city dwellers who wanted shelter from the cacophonous and distracting soundscape of heavily metallic modernity" (Slade 2012, 63). Slade further emphasizes that "heaters and other gradual improvements in the

closed environments of automobiles made the car an extension of America's living space, a private sanctuary on the public thoroughfare" (Slade 2012, 61). The automobile became a means of mediated technological isolation no different than the iPod of the early-aughts (Bull 2012, 198) and modern smartphone culture: seclusion became both a normative and necessary side effect of urbanization, a technological adaptation. But an adaptation to what?

## Social Atomization

In general, technology not only extends our nervous systems, but effectively the distance between us regardless of function. As Giles Slade states:

...in the early twentieth century, emerging technologies of consumerism reduced the number and length of human interactions while providing a variety of substitutes for human company, and that as this process continued, it was increasingly characterized by positive feedback. Isolation became increasingly worse as we relied unconsciously on new technologies to ameliorate isolation (Slade 2012, 66).

Indeed, "the trend toward eliminating human interactions for reasons of speed, efficiency, cost, or stress reduction began during the wave of urbanization that followed the Civil War" (Slade 2012, 27). However, in what ways were these interpersonal schismatic social practices effected? Slade reminds us that with respect to human interaction:

...the city introduces a fundamental problem – volume – into the neurological structure of human trust. We may simply be inadequately equipped "psycho-bio-chemically" to interact successfully with so many people so often... the size of our neocortex actually limits the maximum size of our human social universe to about 150 people, the size of a big Neolithic village... among city dwellers, therefore, there is a problem of how to keep so many strangers out (Slade 2012, 227).

Mechanized mass-production instigated during the Great Depression found its inspiration in archaic forms of vending technology, amidst other earlier practices (Slade 2009, 66). Vending technology, a replacement of a human role, represented for the Americas an early step towards both mechanical reliance and the disintegration of interpersonal contact. After centuries of conditioning, "we came to accept machines as viable alternatives to human company" (Slade, 2012, 192). The practical social consequences displaced faith in fellow human beings, instilled trust in mechanical replacements, and "reliability and accuracy became qualities increasingly associated with (and desired from) machines as human trust became increasingly more abstract"(Slade 192). We will return later to the concept of "trust" later in the discussion. For the moment, of note is the fact that the ingrained values of the 'Gutenberg Galaxy' lie at the basis of societal atomization through mediated interaction.

Amusements providing specifically privatized entertainment also emerged during the first half of the twentieth century. As noted, technology is developed in response to the environment, a means of adaptation (Lacey: 2012, 118). In response to the clamour of urbanity, solitary and privatized listening practices can be observed as far back as the 1890s (Lacey: 2012, 117-18), with discursive references occurring in literature published after 1932 (Slade: 2012, 77). The automobile is indeed both a catalyst and exponent of this history of privatized listening. Where it initially functioned as a means to both navigate and escape urbanity, Slade suggests "this transformation in American sociability is uniquely tied to the growth of cities where human contact became a source of stress that exceeded personal control" (Slade 2012, 66). The car radio—indeed, the atomized environment of the automobile itself—was, of course, at the driver's control. For McLuhan technology extends humanity's inborn faculties, whereas for Slade this extended existence also entails societal fragmentation. The uniformity of the 'Gutenberg Galaxy' however further transcended thought processes and became residually reflected in the very organization and normative values of society.

Adoption of mass production in North America—Fordism—dates to approximately the mid-nineteenth century; however by the closing decades of the century, previously established practices of interchangeable component production had been replaced by the concept of standardization (Slade 2012, 191). In the same way that typography produced the first marketable, mass produced commodity, widespread "adoption of interchangeability had profound economic significance, but it was much more significant culturally because it facilitated the emergence of mass... consumer culture" (Slade 2012, 186). Identical, interchangeable, and modular mass production intersects with Gutenberg values foremost in uniformity. However, since the origins of "the American System of Manufacture/Production" lie in the creation of specialized components of an overall product, the specialization of knowledge afforded by the Gutenberg perspective carries as well through in Slade's story of technology and loneliness (Slade 2012, 187).

The preceding decades of urbanization set precedent for the sort of mediation that became normative in the urban realm. As the concept of reliability overtook conventional notions of trust, facilitated by economic concerns that produced reliable machines, society took to the forms of mediated interaction as above quoted from Slade. Our relationship with these technologies, however, takes on a considerably different form when we consider that:

Since the discovery of mirror neurons in the 1980s, neuroscience has repeatedly shown that individual human beings are transitive verbs always in search for direct connections with human objects. We are neurally programmed to complete ourselves only in genuine relationships with other human beings. But our programming is so

powerful and so deeply embedded in the primate fabric of our brains that when the possibility of same-species relationships are absent from our lives, we compulsively invent substitutes out of whatever animate or inanimate material is at hand (Slade 2012, 23).

Thus, as we surrounded ourselves by technology, it became a surrogate to the humans displaced by its presence: "as we moderns lost the habit of trusting others, the activity of trusting became more fraught and less frequent, and we relied on distractions and divers to deflect the emptiness of an untrusting world" (Slade 2012, 175). The effects of urbanization thus left city-dwellers "paranoid" of interaction, and those left behind in the rural realm remained both geographically and physically as well as "psychologically" isolated (Goodman 2010, 27). As Goodman demonstrates, "the always-on [radio] itself became a companion imbricated in their lives, not a voice from outside to be rationally assessed" (Goodman: 2010, 25). The isolated listener of the radio, phonograph, the iPod or iPhone, or today the solitary academic on endless Zoom calls is thus isolated in a sonic realm with the comforting accompaniment of sonic connection in place of typical interaction.

In the 1930s radio manufacturers began promoting individualized listening, "[dividing] the domestic space into individualized zones of reception," which in turn became the norm in the years following the war with the lower price of a radio unit as afforded by refined mass production technology (Russo 2010, 175-178). Radio then created a controlled reality within a confined space. In fact, some early recorded broadcasts had misled listeners to believe what they were hearing was being broadcast live (Russo 2010, 88). The now infamous *War of the Worlds* broadcast staged by Orson Welles is a case in point. Whether in the solitary confinement of the automobile, or in the equally private spaces of the home, privatized listening gradually became the norm of musical consumption (Slade 2012, 79). Pre-war limitations on fidelity fostered a belief that, wherever the origin of the broadcast, the performer(s) were indeed engaged in live music directly transmitted to the receiver, fostering a sense of intimacy and connection with the radio-surrogate "friend" (Slade 2012, 79). However, prior to WWII, 43% of radio broadcasting was pre-recorded (Russo 2010, 79). Transcription processes, initially culminating with Orson Welles' *War of the Worlds*, "showed that the elimination of the distinction between image and reality has already advanced to the point of a collective sickness" (Adorno 1991, 56). In a less judgmental vein, we may assume that the reliability placed in machines transcended the trust once placed in other human beings evidently to the point of misguided faith.

Thus, historically, devices like the radio provided a means of connection with reliable sources that displaced human company. In contrast, while "the satisfaction provided by the telephone is essentially [a] responsive, two-way, device... broadcast radio was an entirely one-way device" (Slade 2012, 70). In lieu of diminished personal interaction, and with respect to Slade's discussion of mirror neurons earlier mentioned, we thus develop parasocial relationships

with the stars of the screen and radio. They become a source of comfort as the voice of the machine (Slade 2012, 89). Prior to the emergence of electronic media, celebrity culture persisted but in a slightly differing guise. Today, emphasis is placed on the personal life of the distant celebrity in an attempt to foster a more realistic sense of connection: "such parasocial relationships were reinforced by the emergence of movie studios [in the early 20th century]... but the first media star was actually a singer who rarely appeared in films" (Slade 2012, 90). This represents the first instance of the sort of parasocial relationships hereto described and replaced with mediated, reliable sources; "relationships" which in turn logically extended to stars of the screen. These parasocial relationships, a result of the anxieties experienced amidst urbanization and mechanization, also participated in "transforming the experience of listening from a participatory group activity to a more sedentary [and] often solitary one," reliant upon the parasocial relationship created with the media star (Slade 2012, 139). As modern celebrities became a source of comfort in the midst of post-Civil War mechanization and urbanization, "stories about stars increased people's fascination for them and created a demand for more stories and for more appearances of the star on disc or on film. These stories became increasingly intimate as the illusion grew that the audience knew these people as intimately as real friends" (Slade 2012, 143): whether stars of radio or screen, both became the voice of parasocial, mechanical company, somewhat akin to the role of the modern educator amidst the sea of blank screens constituting the Zoomer online classroom.

Essentially, "the illusion of proximity and warmth that all music perpetuates has been the objective of all manufacturers of pre-recorded music. For lonely hominins (including modern men and women), music is distance grooming" (Slade 2012, 149). Prior to the commodification, mechanization, and digitalization of music – dating to the earliest instances of bi-pedalism, – "vocal music began as a fundamentally interpersonal and communicative activity" (Slade 2012, 102), with music more broadly serving as a communal activity intended to promote social cohesion (Slade 2012, 104). Social cohesion, regardless of media or social constructs, is achieved at the bioneurological level. Slade explains that:

When human beings bond – by hugging, kissing, touching, having sex, eating together, giving massages, or even when singing together or speaking reassuring words – oxytocin brings us "in from the cold," warming us – quite literally – as it redirects blood flow into hands, feet, chests, and cheeks. We also become temporarily less 'frigid' since, as we enjoy moments of 'human warmth,' each successful social interaction stimulates our dopamine receptors, encouraging (most of) us to seek more company and to become more trusting (Slade 2012, 225).

However, displaced social interaction rendered "machines... faster, better, and more reliable than human beings who were sometimes clumsy and inaccurate

but who were, more often, completely and utterly untrustworthy. It was also the reliability of these early machines that led to the practice of 'branding' consumer products" (Slade 2012, 119-20). Thus, as technological reliance and mediation increased in tandem with the engrained values of uniformity, repeatability, and individuality of the 'Gutenberg Galaxy', we adapted to become less social and allowed technology to mediate our personal interaction, and indeed forged new relationships with this technology in lieu of typical human interaction. But what of McLuhan's enthusiasm for the simultaneous field of experience re-emergent in the electric age? Bodily production of oxytocin is not provoked by typographic technology, nor by even modern modifications to such media – the letter, email, or text message for instance. However, recorded music, phone calls, and seemingly any sonic event fulfills Slade's criteria of "distance grooming," events which inhibit the production of the hormone (Slade 2012, 106).

At the physiological level it is clear that as afforded by typographic technology, mediated communication prohibits essential neuro-biological responses to human interaction and indeed promoted adaptation to renewed social norms both effecting and catalyzing societal atomization (Slade 2012, 106). McLuhan pondered, "if the work of the city is remaking or translating of man into a more suitable form than his nomadic ancestors achieved, then might not our current translation of our entire lives in to the spiritual form of information seem to make of the entire globe, and of the human family, a single consciousness?" (McLuhan 1964, 67). The sort of meta-community McLuhan describes seems abundantly realized in the 21st century, where "specialism" is disintegrating in academia. Moreover, "mash-up culture" has begun to question concepts of authorship and authenticity much akin to that of medieval manuscript culture (Lamberti 2011, xxxviii). Nevertheless, atomized faith in mechanized and digitized culture still provides a mediated barrier between the individual and the outside world, as well as company in the absence of conventionally understood reality.

Similarly indebted to our natural adaptation and replacement of human company with various mediating devices, "human trust is hardwired into our neurological machinery via the mirror neurons that were discovered in the 1990s and through the strange chemical, both hormone and neurotransmitter, oxytocin, about which we know so little" (Slade 2012, 161). Slade refers to the alterations to these neuro-biological processes sociologically as a distinction between "traditional and modern trust" (Slade 2012, 167). Modern trust, as Slade perceives, is based in the reliability of our technologies, and in explanation directs us to:

Niklas Luhmann [who] noted that in modern societies, social order no longer depends on the personal version of trust that characterized small, traditional societies like the assortment of communities that comprised the American South in the decade before the Civil War. Instead, Luhmann proposed larger, less personal societies encourage a kind of abstract "system-trust," which also reduces social complexity –

once again – by raising our tolerance for (the) uncertainty of future outcomes (Slade 2012, 166).

Slade claims that modern or system-trust “is ground zero for our contemporary isolation and reliance on technology. As modernism evolved, kinship relationships and the homogeneity and traditions of long-established local communities were replaced by the fleeting partnerships of heterogeneous urban dwellers” (Slade 2012, 173). Accordingly, we replaced trust in people with reliance on machines. Considering “it is the ongoing purpose of human trust to reduce social complexity by raising our tolerance for (the) uncertainty of future outcomes” (Slade 2012, 166), a culturally engrained belief in the normativity of uniformity and specialism promoted a “kind of modern trust [that] is involved in elaborate forms of economic cooperation, and it leads to a surge in professionalization since the professions exist mainly to provide confidence in the judgement and actions of unknown (and interchangeable) individuals” (Slade 2012, 167).

Indeed, Luhmann concurs that “trust is based on a cognitive process which discriminates among persons and institutions that are trustworthy, distrusted, and unknown” (Lewis et al. 1985, 970). Here I have striven to demonstrate that the alterations to culture noted by McLuhan are indeed pragmatically present in society more broadly and indeed reflect the beliefs McLuhan held regarding the effect of new media on social organization. Moreover, as faith in the individual perspective historically took grasp, “gradually secular organizations replaced religion as the primary means of organizing and stabilizing human relationships across time. Increasingly, too, these relationships were monetized and hence subject to free-market competition” (Slade 2012, 176). We may localize these considerations of cultural community and loneliness within a macrolevel consideration of society more broadly. Indeed, “the necessity of trust can be regarded as the correct and appropriate starting point for the derivation of rules for proper conduct,” the rules which in turn govern the formation of social systems (Luhmann 1979, 4).

### **Social Systems: Adaptation and Evolution**

Contemporary faith in technology, as the preceding section demonstrates, finds its origins in the ‘Gutenberg Galaxy’, carries through the mechanical age, and has become subject to alteration and more widespread reliance in the electric and digital ages as a result of the necessity forged from/in the prior eras. As Slade tells us, we may consider technological reliance an extension of reliance upon standardization and specialization (Slade 2012, 173). In addition to explaining the alterations of trust Slade refers to, the epistemological framework set forward by social systems theory can also “iLuhmannate” the social structures that foster and support modern trust.

Here we cast our glance to the sociocultural ramifications of new media and their implications in what Luhmann refers to as "functional differentiation." First, it seems necessary that we examine Niklas Luhmann's somewhat laborious notion of society more broadly before exploring sub-systemic specifics. Recent interpreter Hans Georg-Moeller explains that:

...as opposed to the traditional Old European attempt to describe society on the basis of its members (that is: a group of people or a community), systems theory tries to describe society on the basis of its events: it looks at what actually happens... [for example] when someone watches TV, this is understood as mass media communication; and when a vote is cast and counted, this is understood as political communication. These examples already show that communication is not restricted to language; often one can communicate equally well, for instance, with money or ballots (Moeller 2006, 6).

Each of these operations and functions thus demonstrates specialized forms of communication accomplished with equally specialized media organized in what Luhmann describes as systems of communication. Luhmann's point of departure is the development of specialized forms of communication and their reliance upon previously established communication systems, forming "self-referential systems" (Luhmann 1995 12-3). "Self-reference," the foundation of the formation and perseverance of social structures, is the means by which a system both reproduces itself as well as differentiates itself from its environment. It describes the emergence and perseverance of a communication system's future as dependent upon past preserved and established practices and norms (Luhmann 2012, 29).

In short, science becomes and continues to be science; law continues to be law based on previously set precedents. Self-reference, however, is but a means of organization and distinction and thus cannot claim complete independence from other social systems on behalf any one in particular. In order to understand the intersections of systems rendered operationally closed by self-reference, we turn to Moeller's description of functionally differentiated society. Succinctly explaining Luhmann's elaborate and extensive claim, he states:

...all subsystems form the environment of the others. The economy exists in the midst of all other function systems, and the same is true for those as well. Operationally closed systems can, by virtue of their operational closure, observe and "resonate" with their environment. By closing themselves off, social systems develop a "membrane" that allows them to distinguish themselves from their environment and to relate to it. By being differentiated from their environment, social systems are not only capable of self-reference, but also of other-

reference. They can – within their operational boundaries – make the environment an issue and refer to it (Moeller 2006, 35).

Structural coupling, simply put, is the observation of one system by others in its environment (Luhmann 2012, 55). That is to say, for example, economics observes music. The purchase of an album, or attendance at a concert, requires economic communication inasmuch as the experience becomes a form of musical, or more broadly, artistic communication. Artistic production is of course highly dependent on economic systems. Accordingly, Luhmann explains that autopoiesis, the mechanism of systemic self-reference and self-replication, “is in the first place the generation of indeterminacy within the system, which can be reduced by the system itself forming structures.” He elaborates that “the system can constitute operations of its own only further to operations of its own and in anticipation of further operations of the same system” (Luhmann 2012, 33). That is to say, for example, when poetry is composed language becomes the medium of art, a component of its environment. Language no more constitutes poetry inasmuch as poetry is not typical lingual communication: it develops its own forms within the boundaries of system and environment formed of observation and communication, organizing potential understanding and reciprocation of communication. It’s distribution, is however no differently dependent on economic systems of consumption than that of musical composition and performance. Poetry itself, however, becomes poetry by observing prior communications of the art system—specifically poetry—as well as comments on its environment through “hetero,” or “other-reference” (Luhmann 2013a, 56). Other-reference is the reference to other subsystems beyond the operational closure that Moeller described above. For Luhmann, “modern society is characterized by the functional autonomization and operational closure of its more important subsystems” (Luhmann 2012, 17). What this suggests is that modern society is governed by functional, specialized, closed modes of communication mirroring and preserving the earlier described effects of typography.

Where “society has evolved to a state in which it consists of a variety of large communication systems that can be identified by the functions they perform... for instance, economy, politics, law, and mass media” (Moeller 2006, 24), Luhmann explains that “the stability of functional systems and of the organizations, professions, and roles differentiated within them on the principle of the division of labour is compatible with a wide range of variations and selections” (Luhmann 2013b, 296). What this suggests is that the availability of information provided by the emergence of the mass media in the wake of the printing press provided less restricted opportunities to inform necessary selections amidst newly generated social complexity: “in the older order, political government seemed to be the order of society itself” (Luhmann 2013b, 69). Divorced from direct imposition of authority, public opinion could then emerge through communicative capabilities afforded by

container technology: as we saw earlier, the printing press became a reciprocal conduit of communication between author and audience.

Accordingly, with the breakdown of social stratification—referring to hierarchal social organization extant in the eras prior to the Gutenberg Galaxy—and replacement with functional differentiation (Moeller 2006, 42), instantaneous dissemination of information made possible observation of functional systems by every other system within the larger environment (Moeller 2006, 25). As outlined, operational closure draws the distinctions between these systems: art is not economics, science is not law. This is the quintessential determinant between the eras prior to and perhaps following the Gutenberg Galaxy. Feudal, hierarchal organization drew fewer distinctions between the roles of religion, law, or for that matter, art. Though “function systems are operationally closed [this] does not mean that they do not influence each other. Politics certainly influences the economy – and vice versa. All social subsystems thus “influence” each other in various degrees” (Moeller 2006, 36).

Autopoiesis, the mechanism of operational closure, relies on the concepts of observation and distinction and “within this distinction the system (not the environment) is defined as the author of selections, and distinctions, [which] like indications, are performed as operations of the system itself” (Luhmann 1995, 167). What could this mean for music (or for that matter, art), for example? Essentially, music differentiates itself from science; law from economics etc. However, these systems may observe their environment: music can respond to politics just as economics observes and depends upon law. Musical structure, theory, etc., nevertheless are observed and persevere in building upon prior foundations. Luhmann expands his gaze more broadly suggesting that “the social world is made up of observations (communications of distinctions) that open up a space, and observations of the latencies of other operations, each enabled by a further latency exposed to observational scrutiny” (Rasch 2002, 25). In this sense, systems are forced to make selections amidst complexity; selections that in turn generate further complexity.

The simplification of autopoiesis presented succinctly explains the mechanism by which art, science, etc., generate the form and structure of their communications, and thus collectively constitute the environment of the larger communication system of modern society itself (Luhmann 2012tos, 50). The question remains, where do we locate the “human” in Luhmann's conception of society in which it is “communication that constitutes communication”? Simply put, human beings are “necessary for communication to take place” (Moeller 2006, 8).

Current interpreters of Luhmann's work suggest “reality, then, is not a pattern of objects but an account of such a pattern” (Rasch 2000, 15-16). Accounts of such patterns of communication thus require cognition by actors

within the system of society. However, "systemically speaking, a theory that conceives of society as the system of communication has to locate minds and bodies—and, of course, "human beings"—outside the operational realm of society" (Moeller 2006, 9). Thus, with "the traditional notion of the 'human being' [as] a simplification of the actual complexity of human existence," we must recognize that "human beings exist as much bodily as they exist mentally and socially" (Moeller 2006, 11).

Essentially, by excluding minds and bodies from society, systems theory establishes three main types of systems: systems of communication (social systems), systems of life (bodies, the brain, and so on), and systems of consciousness (minds). Each system is the environment of others. Communication needs the environment of living and psychic systems, just as a fish needs water. But this is also true vice versa: to be a system, a system must have an environment (Moeller 2006, 9).

The observer thus "observes other systems by means of the distinction between system and environment:" the environment in this case is accessible only by a priori cognition of previously observed systems (Luhmann 2013, 107). This is to say one does not know what art could be without making a distinction between art and – for example – science (or having that distinction explained). Understood from this perspective, society may be regarded as the interaction of various systems – including people as above defined – each effecting the other in varying degrees. Regardless of physical or mental isolation, the human subject remains part of the environment of society.

Luhmann explains that "an observer can describe the complexity descriptions of another observer, so that hypercomplex systems can come into being that also contain a plurality of complexity descriptions; and it should be clear that hypercomplexity is an autological concept" (Luhmann 2012, 80). The observer is of course themselves a system; more specifically, a set of structurally coupled systems: mental, physical, and social. Indeed, "limits on capacity generally force systems of every kind to reduce complexity, to simplify themselves, and to realize their possibilities only selectively" (Luhmann 1995, 337). Furthermore, "any determination of action requires a simplification, a reduction of complexity" (Luhmann 1995, 166).

Trust is a mechanism of this reduction process. Systems of communication organize information and codify it in appropriate media. The determinant factor in what is defined as "appropriate" is what we may understand as a social system. Reliance on technology, uniformity, and specialization more broadly is attributed by Slade to the foundation of modern trust: a form of trust which extends to the professionalization – and thus, specialization – of functions within functionally differentiated society. Within the residual bounds of Gutenberg sensibilities, someone who creates art is henceforth an artist; a scholar of science is indeed a scientist. At least they were.

## Conclusions

It is selection amidst complexity—in this case referring to any given decision that generates or mandates any form of communication—which in turn generates information and creates further complexity over the course of time (Luhmann 1995, 47). We may call the totality of this complexity modernity: for every distinction made one generates new forms of complexity—new problems to be encountered by systems of the present and future. The selections made within it by individual actors are those in turn which force subsequent selections of other actors, and any communication becomes “an examination of the structure of modernity that both dictates... observations and emerges as a result of them” (Rasch 2000, 1-3). Within the context of SST, observation and communication within systems become operations of selection: a communication selected amidst complexity. This is not only the process by which systems develop form and structure, but emerge similarly to “evolutionary selection... occurring out of the environment” (Luhmann 1995, 32).

Technological adaptation, as we have seen, has origins and ramifications in both history and social necessity that can be “explained only in terms of responsiveness to the social environment, a demand for and use of the technology” (Luhmann 2012, 316). Functional differentiation is a result of this demand and use. As previously mentioned, one such functional system is that of art. Art for Luhmann is a sort of transcendental conception, that which differentiates itself by virtue of it being art—the system observes prior art at a level akin to second-order cybernetics which in turn structures subsequent artistic communications (works of art). Simply put, artistic production “presupposes and builds on the [observations previously made]” (Luhmann 2000b, 67). For Luhmann a work of art differentiates itself from something other than art simply by virtue of it being art: an aesthetic communication separate from conventional reality (Sevänen 2001, 90). Nearly any communication that proclaims itself to be art is seen through the lens of SST as art, including radio broadcasts (Luhmann 2000b, 22).

This commentary becomes revelatory as recent trends in sociology suggest that Luhmann’s structural appraisal of the functional differentiation of society is in peril with respect to globalization, in fact in the midst of “de-differentiation” (Sevänen 2001, 83). Here we return to our previous discussions to remind the reader that in the electric age McLuhan foresaw a return to the simultaneous field of sensuous experience experienced in pre-literate culture. A structural decomposition of functional differentiation indicates validation of this in that the specialism of the Gutenberg Galaxy too is beginning to decay in response to modern media technology.

The example of a radio broadcast becoming art is of particular relevance. For Luhmann, the mass media system is comprised of entertainment, advertising, and news reporting (Luhmann 2000b). Art can of course be broadcast, but

the distinction between art/entertainment, documentary, and in some ways advertising becomes distorted as contemporary audience's perception of 'reality' becomes blurred by the technicality of the paradigm of digital reproduction more broadly.

Luhmann distinguishes within the system of mass media "all those institutions of society which make use of copying technologies to disseminate communication. This means principally books, magazines and newspapers manufactured by the printing press, but also all kinds of photographic or electronic copying procedures, provided that they generate large quantities of products whose target groups are as yet undetermined." He stresses that "the crucial point at any rate is that no interaction among those copresent can take place between sender and receivers" (Luhmann 2000b, 2). We have seen how technology responds to, and in turn, shapes its environment. Technology is then subsequently developed in response to the environment: a means of adaptation (Lacey: 2012, 118). Alfred Kuhn calls this "adaptive behaviour," specifically describing the "behaviour of a system in an environment," dependent on the state of both the system(s) in question and those of their environment (Kuhn 1974, 38). The emergence of mass media communication, dating to the printing press and carrying through its residual biases in the digital age, served social functions in extending the reach of the human voice but in turn, as Slade observes, gradually replaced dependence on other people and replaced that trust in machines; machines which in the digital age, for example, Zoom, overcome the boundaries of the 'Gutenberg Galaxy' by allowing for simulated visual and sonic communication. Where direct contact is prohibited between sender and receiver, a residual Gutenberg value amplified by the necessity of the global pandemic, we have gradually adopted our digital world as a natural environment as a result of our circumstances. Moreover, as we delve deeper into our contemporary digital world not only can the lines between, for example, art and mass media become blurred in light of noted de-differentiation of functional systems, but also calls into the question the differentiation of artist, educator, etc and entertainer through an associated breakdown of communicative specialization.

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