The Thesis

Prologue

Technology and Communication

And the word was made functional. As you will soon discover, that statement is rich with historical, philosophical, technological, legal, and constitutional meaning. Yet that meaning escapes us. Just as fish take water as a given, we take much for granted regarding the technologies that enable our communication. It is precisely that awareness of the technological underpinnings of communication that informs our discussion of robotics and free speech. And it is that eye-opening awareness – at once historical and futuristic – that points to new ways of thinking about free expression in an advanced technological world. Before turning to all that, a few words must be said about the obvious and about how we communicate.

It is a preoccupation that traces back many millennia: how to project the human voice and vision so that they carry over distance and time. The primitive world of orality was cabined by the confines of face-to-face communication. Such communication was largely limited to the time and place of its utterance and to its immediate recipients. Technology was needed to *amplify* and *transmit* the human voice and vision so that messages might reach a larger audience. Equally important, of course, was the need to *preserve* such messages. Here again, technology served to make the preservation of communication possible. Technology also furthered at least one other significant communicative function: it enabled the human mind to *broaden* the domain of knowledge and thereafter share that information with countless other humans, both living and yet to be born. In all of these ways and others, technology made it both possible and desirable to move beyond the limits of orality.

How did people communicate before the invention of writing some 3,200 years BC in places such as Mesopotamia, Egypt, and China? And what if we turn the communicative clock back 40,000 years to the early days of "writing" with numbers (e.g., notches carved in wood, bone, and stone to tally items)? Then there were the Paleolithic cave paintings that date back to around the same period. What is common to all of these early forms of communication is that they did not rely on

orality to convey their messages. They all utilized some technology to make their mark – some tool used in conjunction with a primitive form of "art" or "science." For example, technology gave some messages a form of permanence (e.g., the 35,400 year-old pig paintings found in Indonesian island caves), or it allowed messages to be transported over great distances (e.g., ancient Egyptian hieroglyphs placed on papyrus or wood). Other primitive communicative systems fostered more mass communication (e.g., smoke signals or drumming). In the cases of mathematical, scientific, and philosophical writing, technology brought something more to the communicative realm: it improved and expanded the domains of knowledge in ways that could thereafter be utilized and shared with others.

The *function* of such ancient technologies (be they stones, signs, or smoke) was to expand and enrich communication and the thinking process. In these ways, technology was vital to communication. The evolution of communication is thus inseparable from technology. Of course, the major jump in our evolutionary history was the invention of the printing press, which revolutionized everything from how people comprehended their world to how they understood their God. Later still, the technologies of the telegraph, telephone, motion pictures, radio, and television expanded the evolutionary arc of knowledge and communication. The advent of the World Wide Web and digitalized information (available on a range of communicative platforms from computers to tablets to cell phones) revolutionized life, law, and even civilization itself as never before.

It is axiomatic: with every revolutionary change brought about by a new communicative technology, there will be new threats to the established order, whether political, religious, economic, or social. Some of those threats will be real, others imagined. Some harms will be grave, others trivial. Some injuries, although significant, will be tolerated because the overall benefits of the technologies far outweigh their costs. In other words, the utility of communicative technologies can be so essential to our daily lives that we cannot function without them.

Additionally, the relationship of technology and communication raises many relevant questions: How has law adapted to such changes in communication? Did it give any staying power to these changes? How did it attempt to regulate them? And to what extent did it resort to censorship in order to counter the new communicative culture? This last question is a vital one, because censorship has long tracked the evolution of new and emerging technologies. If a communicative medium is mass in its reach, largely decentralized in its structure, instantaneous in its delivery, and potentially transformative in its messages, censorship (in any variety of forms) is almost certain to follow.

This is all backdrop to the larger concern of this small book, namely, robotic communication and its relationship to our system of freedom of expression. To explore that realm is to ask yet more questions. Is algorithmic data "speech" for First Amendment purposes? What values does communication spawned by artificial intelligence advance? In what ways, if any, can the traditional paradigms of our free

speech jurisprudence apply to robotic expression? Given answers to these questions, it is important to ask what are the likely speech harms we might confront in such a brave new technological world? And what of the utility of robotic communication? Will it be so great as to prompt us to legal and cultural concessions that might otherwise strike us as intolerable or, worse still, inhumane?

Our epilogue closes with a philosophical comparison of John Milton's *Areopagitica* (1644) with our own *Robotica*. Whereas the former defended the technology of print against censorship, our tract situates the communicative technology of robotics within the domain of our First Amendment freedoms – all of this duly mindful of the necessity to rein in such liberty upon a convincing demonstration of immediate and serious harm.

True to our objectives, this book is concise in its presentation and modest in its scope. To be sure, more could (and will) be said. For now, it is enough to begin the process of thinking anew about the relationship between communication and technology.

So let us start our inquiry. As your eyes scan the lines of our text, prepare to return to the world of orality, a world in which spoken language encoded and transmitted information. Think about it: even in the world of the spoken word, could communication exist without some form of technology? To ask that kind of epistemological question about ancient forms of communication is to tilt one's mind to the future and to the dawn of Robotica.

Part I

The Progress and Perils of Communication

The relationship between technology and communication is illuminated by an ancient myth told by Plato in his *Phaedrus*. It illustrates how a new mode of expression furthers the progress of human knowledge while destabilizing the customary ways of speaking and thinking. In the process, the governing impulse is to defend the old ways against the new technology.

Plato's account held that among the ancient Egyptian gods, there was one named Theuth who first discovered writing, among other things. Theuth revealed his invention to the Egyptian king Thamus and urged him to teach the art of writing to all his subjects. "O King," Theuth explained, "here is something that, once learned, will make the Egyptians wiser and will improve their memory." Thamus was unmoved by the high regard that the father of writing had for his creation. "In fact," the king contended, "it will introduce forgetfulness into the soul of those who learn it: they will not practice using their memory because they will put their trust in writing, which is external and depends on signs that belong to others, instead of trying to remember from the inside, completely on their own." To push his point further, Thamus argued that writing would provide only "the appearance of wisdom, not its reality." For the invention will expose his subjects to "many things without being properly taught, and they will imagine that they have come to know much while for the most part they will know nothing."[1]

For our purposes, the significance of this myth is multidimensional. At the outset, it reveals that Theuth's writing represents a fundamental change in the method of communication. It takes the living word out of the mouth and places it onto the dead-letter script. Essentially, King Thamus understood that writing is more than a technique of memory; it is a technology external to the human user. Once writing is embraced, orality operates in its shadows. It becomes "speech-in-the-light-of-writing – a tool self-consciously adopted."[2]

Moreover, this artificial technology conflicts with the old ways of learning and knowing about the world. The art of memory as practiced by those entrusted with

preserving a society's oral history – spiritual, political, social, and cultural – is eclipsed when writing inscribes that history more accurately, efficiently, and enduringly. To be sure, and as Socrates stressed in Plato's dialogue, when something is gained by a technology, something is lost. One does not have to dismiss Socrates' attack on writing to appreciate his point about the advantages of oral dialectical engagement. Even so, it is well to remember that Plato smiled kindly on Theuth's invention insofar as he retold the Egyptian myth and memorialized Socrates' reactions to it *in writing*. Tellingly, Plato parted company from his teacher because the functional value of writing outweighed categorical adherence to the oral way.

Viewed from this perspective, Plato might be seen as an outlaw in the king's regime. Essentially, Thamus' animosity to the technology of writing would rationalize censorship. Once reading and writing are widespread, the king's subjects would be empowered to think on their own and might no longer respect the ruling authority of oral tradition. Interestingly, what is at issue here is not a censorship of messages but a censorship of a medium.

In reading all that follows, bear these six points in mind. First, a new technology of communication not only affects how information is disseminated and preserved, but it changes how information is conceptualized and processed in human affairs. Second, any new and useful mode of communication will likely pose some real danger to the existing order. Third, the prospect of peril will likely prompt some type of censorship. Fourth, the dangers of a particular message may be inextricably tied up with the chosen method of communication. Fifth, whether a new technology ultimately prevails in life and law may well depend more on its functionality than on fidelity to established norms. Finally, once the new world of communication reaches its zenith, it is impractical to return to the old. As will become apparent later, these considerations significantly inform why and how we value the freedoms of expression in the long arc of time culminating in the Age of Robotica.

OVERCOMING ORALITY

In the beginning was the word, the *spoken* word. Of course, that is not quite true. The spoken word presumes the existence of some technique of communicating; we call that language. And "language" may or may not have been simply oral. For example, visual signifiers (e.g., smoke signals) or aural signifiers (e.g., the pounding of drums) were forms of communication in primitive societies. If for the sake of convenience and clarity we confine orality to spoken communication, we can better appreciate its deficiencies.

For communication to be truly effective, it must conquer distance; it must triumph over time; and it must surmount the obstacles of uncertainty. Standing alone, pure speech is ill suited to achieve these things. Something *more* – be it a technique and/or technology – is necessary. Think of it this way: the *technique* of ritual utterances, for example, could improve memory and thereby reduce the

problems of uncertainty; by the same token, resort to the *technology* of "drums" could alleviate the problem of communicating over distances. Understood against this backdrop, the story of how humans overcame the deficiencies of orality provides a conceptual canvas on which to view the evolution of communication. In that process, communication improved and knowledge expanded but not without real risks to the customs that made oral society what it was *said* to be. Aided by print technology (digital or otherwise), let us sketch out some of the characteristics of the oral culture.

Primary orality, as we portray it, is a culture of communication based more heavily on spoken language than anything else. For thousands of years before Plato wrote the *Phaedrus* and for some 2,100 years thereafter, the oral culture was dominant. It prevailed until literacy and the use of the vernacular in writing became more widespread between the eleventh and seventeenth centuries. And in that oral world, communication and knowledge tended more toward the customary, the provincial, the participatory, the ceremonial, the adaptable, and the contextual.

Preliterate societies depended heavily on ritual and ceremony, including religious ceremony, to manage transactions and oversee social relations.[3] For example, before written documents were used to make conveyances, parties exchanged symbolic objects or engaged in rituals to signify their transactions and to commit the events to the memory of witnesses. As Professor M. T. Clanchy explains:

> [T]he witnesses 'heard' the donor utter the words of the grant and 'saw' him make the transfer by a symbolic object, such as a knife or a turf from the land . . . Such a gesture was intended to impress the event on the memory of all those present. If there were a dispute subsequently, resort was had to the recollection of the witnesses.[4]

Whether the ritual involved an oral recitation accompanied by the transfer of a twig, turf, glove, or ring or the touching of an altar cloth or bell rope,[5] the longest measure was the living memory. To preserve the security of a transaction, the oral culture relied on generational memory. "Since memory was obviously likely to be the more enduring the longer its possessors were destined to remain on this earth, the contracting parties often brought children with them."[6] Visual and oral drama imbued the event with significance.

Oral solemnities also played an integral part in conflict resolution in preliterate cultures. For example, in their move away from blood feuds, the Northern and Western European tribal orders of the sixth to tenth centuries often used "trials by ritual oaths" to settle conflicts between households and clans.[7] Opposing parties would appear before public assemblies and exchange a series of oaths and offer "supporting proof" in the testimony of a number of kin or neighbors, known as "oath helpers" or "compurgators," who would also recite ritual oaths. Professor Harold Berman describes the significance of oathtaking as "legal speech" in an oral society: "All [oaths] were cast in poetic form, with abundant use of alliteration . . . The dramatic and poetic elements . . . elevated legal speech above ordinary speech."[8]

Among the Germanic peoples, the same public assemblies that issued judgments in trials by oaths also issued oral proclamations, known as "dooms."[9] The dooms, though not legislation in any contemporary sense, nevertheless pronounced the community's rightful ways. In Icelandic societies, the oral norms were announced once a year by the highest official, the "lawspeaker."[10] Professional "remembrancers" in other preliterate societies served a similar role of preserving and transmitting their legends and customs.[11]

What ritual sanctified, what ceremony legitimated, and what remembrancers recounted were the habits and norms of the people. "[T]he accustomed ways of life … were passed from generation to generation by unwritten tradition."[12] By nature, custom was evolutionary, collective, and comparatively participatory;[13] oral norms emerged more from patterns of social relations among the ordinary folk than from deliberate and defined regulation by any governmental authority. Spoken custom was "tied to the movement of life itself in the flow of time."[14]

Because they flowed with life, oral traditions were far less likely to be rigid than later handwritten and typographic social orders would be. While oral culture had formalistic[15] and exclusionary qualities,[16] adaptability was its dominant feature. The fact that customs had to be recalled and repeated rather than recorded and read made them relatively malleable.[17] "Remembered truth was … flexible and up to date, because no ancient custom would be proved to be older than the memory of the oldest living wise man."[18] The medieval Italian lawyer Azo insinuated the fluidity of custom when he stated, "A custom can be called *long* … if it was introduced within ten or twenty years, *very long* if it dates from thirty years, and *ancient* if it dates from forty years."[19] Thus, it is anachronistic to characterize the lawspeaker or remembrancer as a professional historian who studied and recounted the past objectively.[20] With memory as the only safeguard of their traditions, members of oral societies could give the sanction of "ancient" custom to practices or beliefs that were relatively new.[21]

In an environment in which custom had a "creative energy,"[22] the oral tradition was "living" – localized, situated, and contextualized. Bound to no written text, custom could operate as the mirror and mold of the community's purposes. Essentially, the other significant attributes of the oral tradition derived from its contextual nature: The custom, the ceremony, the participation, and the adaptability in the oral way of knowing and communicating reflected and shaped the common consciousness.

In all of this, what is central is that the oral peoples depended heavily on *technique* to overcome the limitations of memory and to preserve and propagate the domain of their knowledge. Memory could not be self-dependent, however, if only because individual memories might be hopelessly inaccurate and multiple memories might chaotically conflict. Importantly, then, the truth-keeper – the lawspeaker or the remembrancer – legitimated the most significant narratives and norms of the oral culture. In that sense, the truth-keeper served as a medium for the

society's most valuable messages. By mastering the techniques of memory, that figure performed, in effect, as a human *technology*. Thus understood, the concept of a truth-keeper validates the etymology of the word "technology" – *techno* meaning art, craft, or skill and *logy* meaning speech or discourse. In other words, skill in the service of speech.

The very character of any significant medium carries a certain power. That power may differ for diverse media, but the common thread is the capacity to influence or shape the way people understand their world or communicate with one another. For the oral societies, the keepers of truth largely determined the contours of political, religious, or social "histories." Given such power, they could either dismiss or repress conflicting facts or contrary truths. Since the keepers were the medium, they controlled the message.

In time, the oral way yielded to the scribal or chirographic way. Nonetheless, orality has survived for centuries and continues to do so. This points to an important lesson in the history of communication: in terms of its dominance, a new medium may replace an old one, but it never displaces it entirely. But what was quintessential about the oral culture was its all-too-human interaction. It was person to person; it was face to face; it was voice to voice; it occurred in real time; it engaged real people; and it was far less abstract than the forms of communication that followed it. Moreover, the oral culture entrusted the safekeeping of its sacred myths to a select few.

There was a certain romantic quality to orality – its very form bespoke its humanity. It was precisely that quality that the defenders of orality hailed when they railed against a new form of communication. At the dawn of scribality, the defenders of the oral way looked to Socrates to champion their cause. And for centuries thereafter, others would follow in his footsteps. Their first and foremost enemy were the scribes – the new keepers of truth.

THE WORDS OF THE SCRIBES

It dates from October 12, 1297. Its preamble and clauses were penned with quills and written in medieval Latin on a fragile membrane of calfskin parchment. Its some 3,500 words were set out on 68 lines of crowded and unbroken text, which was so expansive that it left little room for margins.

These references, of course, are to a version of the famed Magna Carta, in this case the one that King Edward I reissued in 1297. An official copy of that version was enrolled, for the first time, by the Chancery and inscribed into the earliest of the Chancery's Statute Rolls as an official enactment of the text. Today that scribal version resides in the National Archives in Washington, DC. (The original version of the Magna Carta dates from 1215, and the first mechanically printed edition appeared in 1508.)[23]

This Great Charter of Liberty, first drafted by the Archbishop of Canterbury to make peace between the unpopular King John and his rebel barons, was important