

its references and resonances. The twentieth-century version is a painstaking labor of reconstruction rather than a spontaneous outpouring and hence is worthy of novel appreciation.

Whether a copy is richer (Menard's *Quixote*) or poorer (Disney's *Mona Lisa*) than the original, things cultural derive meaning not solely from what can be reproduced—formal patterning, semiotic suggestiveness, or power of statement—but from a tissue of relationships with history, time, and place. Identical objects are never identical. Repetition, as Kierkegaard noted, is impossible. The births of the two works, contra Turing, are part of their possible interpretations, even of their essence. The one work is haunted by a whole texture of historical ghosts and legends, the other needs to have that aura supplied.

Perhaps we should submit the two *Mona Lisas* or two *Quixotes* to a Turing test: remove the captions marking authorship and see whether impartial and uninformed witnesses could discern the difference between the two "versions." Clearly, no one could. If the two works were permanently confused, we would be left in the monstrous situation of Borges's cartographers who had built a map the same size as the empire.²⁶ But the Turing test assumes that our knowledge of the history of the painting's or text's embodiment should be irrelevant to our appreciation of it. The Turing test, again, explicitly seeks to eliminate attraction to bodies or knowledge of them as a factor in communication. Turing's ambition was to make indistinguishable duplicates of human intelligence. But the impossibility of making a precise copy in art holds for humans as well. Eros is the relation of one body to another, and what Turing wants to purge is precisely a faculty of appreciation that depends on the touch of hidden things. Wishing to eliminate any appeal to human superiority based on our deep-seated passion for the shape of the human body, Turing only ends up reaffirming the inescapable anthropomorphism that drives our interactions with each other. The Turing test wants to imagine communication as if eros did not matter. But the repressed returns. The skins and faces and bodies of others turn out not to be in the least irrelevant to our interactions with them, at least in interactions among friends, lovers, and families. Turing's fantasy is democratic in that it allows for a mode of sociality in which the bodies, parts, and passions of the participants would be utterly irrelevant to their chances for expression. But not all life should be politics, and love is always, as we have seen, anything but democratic; it is usually

26. Jorge Luis Borges, "Del rigor en la ciencia," in *Historia universal de la infamia* (Buenos Aires: Emecé, 1958), 131–32.

madly partial. (Lysias's mistake was to imagine that it could be indifferent.)

Communication conceived of as the project of copying one person's meanings leads to as many inevitable differences as Menard's attempt to reproduce the *Quixote*. If communication for the spiritualist tradition was a problem of transcending bodies so that spirits could connect, by the twentieth century "communication" has become a problem of arranging the ties between distant bodies. The error of the spiritualist tradition was to presuppose what Leibniz called "the identity of indiscernibles." For Leibniz, if two entities share the same properties they can be considered as one, since space is the register of possible coexistences (he has a relational, anti-Newtonian conception of space). The two *Mona Lisas* would be in effect the same painting, since nothing (besides a caption, so little on which hangs so much) could possibly differentiate them. Something like this principle underlies the spiritualist project. Self and spirit proxies are to be identical, such that communication over distances imposes no stretching of soul and body. Angels *are*, after all, their spirit proxies. The dream of communication is the dream of identical minds in concert. Media of transmission and recording, however, drove a wedge between the copy and the original by inadvertently revealing everything that the copy had missed: birth, history, and death. The proxies could become competitors with their origins, the self. The spiritualists missed how the doppelgängers accentuated the hitherto unnoted incidentals of the original—or else celebrated those incidentals in an orgy of ectoplasm, the flesh out of place.

The identity of indiscernibles is a principle perhaps characteristic of the Christian adaptation of Kabbalah, in which Leibniz took an interest; it is certainly characteristic of the longer Christian privilege of the spirit over the letter and of angelic interiorities. The version of Kabbalah reflected in Kafka, Benjamin, and Borges insists, in contrast, on the discernibility of identicals. Between the originals and such doubles as telephone voices (Kafka, "The Neighbor"), photographs (Benjamin, "The Work of Art"), and literary updates (Borges, "Pierre Menard") there is always an infinite gulf. Difference is so pervasive that it appears even—or especially—between exact replicas. In the spaces between identical objects, the impish angels of negation multiply explosively.

Animals and Empathy with the Inhuman

Even more than angels, animals have probably been the chief object for contemplating the human estate. The species barrier has perhaps always

from John Furcham Peters, "Speaking into the air: a study of the idea of communication," U. of California, Ch.

been the most permeable of all, at least in imagination. If we believe Hegel, the Garden of Eden was a zoo.²⁷ The first item of business was the naming of animals, and Adam and Eve had all too little trouble in communicating with a certain snake. From the pervasiveness of totemism in human cultures, it is clear that animals have long served humans as mirrors of self-definition. From Aristotle on, animal societies have been of interest as a comparison point for political theory.²⁸ According to the Greeks, Schiller, Marx, and Arendt, animals have societies (cooperation with conspecifics) but do not have politics (collective determination of right action). In the Judeo-Christian tradition, the ability to communicate with animals has gone together with wisdom and saintliness: King Solomon and Saint Francis. Animals have long served as allegories of human otherness, and quite literally as guinea pigs for the treatment of humans. "After they had accustomed themselves at Rome to spectacles of the slaughter of animals," wrote Montaigne, "they proceeded to those of the slaughter of men, to the gladiators."²⁹ The condition of animals has long served as a political allegory of the treatment of humans, a founding pathos for the animal rights movement.

But only in the late nineteenth century did scientific efforts to discern animal communication emerge—Darwin, Espinas—sometimes with hilariously embarrassing results in less sophisticated research. Clever Hans, the German horse, could supposedly do simple mathematical calculations by tapping his hoof until he arrived at the desired digit—a mode of communication not unlike that of a spirit rapper. It turns out he simply stopped tapping when his handler's unconscious facial expression and body language cued him that he had arrived at the right answer. His independent intelligence turned out to be a simple mimicry. The Clever Hans syndrome is a favorite cautionary tale in animal communication research about the dangers of projecting ourselves onto animal subjects. It is one of Kafka's worries as well: that the performance of the other is simply a staging for or projection of the self. Clever Hans supplies the classic scenario of miscommunication: a smooth interaction that, it turns out, has radically different meanings for each participant. Wherever the interiority of the other is veiled, questions of projection, otherness, and ventriloquism are acute (as in

27. G. W. F. Hegel, *Lectures on the Philosophy of Religion: The Lectures of 1827*, ed. Peter C. Hodgson, trans. R. F. Brown, P. C. Hodgson, and J. M. Stewart with the assistance of H. S. Harris (Berkeley: University of California Press, 1988), 442.

28. David J. Depew, "Humans and Other Political Animals in Aristotle's *History of Animals*," *Phronesis* 40, 2 (1995): 156–81.

29. Michel de Montaigne, *Essays II*, Great Books of the Western World, ed. Robert Maynard Hutchins, vol. 25 (1580; Chicago: Encyclopaedia Britannica, 1952), 206.

all situations of first contact). The potential for spectacular miscues is rife when shared history is thin. As Montaigne put it, "The defect that hinders communication betwixt them [animals] and us, why may it not be on our part as well as theirs?"³⁰

Through the rich research tradition of ethology (a term first coined by J. S. Mill in his *System of Logic* for the study of human character), such as Lorenz on ducks, Frisch on bees, Marler and Hartshorne on birdsong, Tinbergen on gulls, Holldobler and Wilson on ants, Goodall, Savage-Rumbaugh, and Premack on simians, Lilly on dolphins, Bateson, Sebeok, and Haraway among others as general theorists, much has been done in this century to crack the codes. Thomas Sebeok, a student of "zoosemiotics," likens the interpreter of animal codes to a cryptanalyst, "someone who receives messages not destined for him and is initially ignorant of the applicable transformation rules."³¹ This is the familiar hermeneutic problem of the intercepted text. The notion of "communication" allows us to evade the disconnections just as it makes them more central. As Charles Morris wrote in 1946, "All such discussions usually culminate in the question as to whether language is unique to man. Here the issue is in part terminological, since if 'language' is made synonymous with 'communication' there is no doubt that animals have language."³² On the eve of information theory, Morris gives us a notion of communication indifferent to species boundaries. In a genuine pragmatist moment (which in Morris are often overshadowed by positivist ones), Morris sums up: "The continuity is as real as the discontinuity, and the similarity of human and animal signs-behavior as genuine as the difference."³³ As in mesmerism or telepathy, communication is a concept looser and less material than language or speech, one that lends itself to strange catholicities of blurring.

My story here is not that "man" was once defined by his ability to communicate and that an ever-expanding range of human and inhuman "others" seeking acknowledgment have called this capacity into question; it is rather that "communication" is an adaptation to or symptom of this crisis, a concept that allows for contact without presence, contact that is indifferent to the bodily form of the communicators (animals, people, machines) and even to biology itself (as phonographs capture the voices of the dead or computers have "memory"). The nine-

30. Montaigne, *Essays II*, 215.

31. Thomas A. Sebeok, "Zoosemiotics: At the Intersection of Nature and Culture," in *The Tell-Tale Sign: A Survey of Semiotics*, ed. Thomas A. Sebeok (Lisse, Netherlands: Peter de Ridder, 1975), 88.

32. Charles Morris, *Language, Signs, and Behavior* (New York: Prentice-Hall, 1946), 53–54.

33. Morris, *Language, Signs, and Behavior*, 55.

teenth century pushes "man" toward both animality and mechanism via the assumption by machines of supposed human functions (speaking, memory) and the increasingly permeable intellectual and morphological membrane between humans and animals (always thin in childhood and fairy tales). If the Turing test hides the organism within the machine, the task in animal communication is to find a fellow intelligence in a body of a different shape and species. The task is to find affinities not limited by our anthropomorphic dispositions. "Communication" gives us an image of humanity, not as standing on an ontological ladder betwixt the beasts and the angels, but as a nexus within a biological network and circuit of information flows.

The scholarly literature on animal communication is vast; I simply want to place the twentieth-century project of communicating with animals in the overall argument. The intellectual problem in communication with animals is the sounding of alien intelligences that seem to lack interiority or that cannot acknowledge us in the same medium by which we approach them—a problem similar to contact with nature or the dead (those objects with which we commune rather than communicate). The challenge is to fend off one's own anthropomorphism so as to recognize an otherness that does not know it is other. Against the frank projections of human affairs onto beasts that prevail with domesticated animals, fairy tales, and totemism, Ludwig Wittgenstein teaches a harder doctrine: If a lion could speak, we couldn't understand him. His point—which would stand against Turing as well, who was an occasional but sometimes dissenting attendee at Wittgenstein's Cambridge lectures—was that understanding comes as much from a lived or embodied world of common practices as from symbol-manipulating capacities alone. We would need to live in a lion's body and experience the lion's form of life to understand the lion's speech.

Ethological research shows overwhelmingly that insects, birds, ungulates, simians, and cetaceans, among others, use complicated signaling systems; it has also produced remarkable stories of cross-species bonding and relationships. But the pathos-drenched question of "communication" can probably never be answered in a satisfying way. The whole project is a quest for the liminal space in which our half of the dialogue could find junction with what we imagine is the other half on the part of animals. If the question were simply whether humans and animals can cooperate in a variety of tasks, it would lack urgency; the answer would be obvious. The absence of "communication" has never prevented humans and animals from entering into community with each

other. Thousands of years of brute exploitation, and a shorter history of household pets, offer two alternative models besides "communication" —(domination and the affectionate projection of human traits.)

Driving the dream of communication with the beasts is the Hegelian magic, the desire of recognition, Bell's call to Watson: Come here, I want you. No creature has yet stood up to say, I recognize you recognizing me, and I am yours for the taking. The dream is of an alien intelligence that opens itself lovingly to us. But the tokens of friendship should be enough; we ought not to need contact with the soul. Socrates struck the right note concerning the song of the cicadas in the *Phaedrus* (259a-b): "But if they see us in conversation, steadfastly navigating around them as if they were the Sirens, they will be very pleased and immediately give us the gift from the gods they are able to give to mortals." It is precisely in recognizing the impossibility of communication that the blessing comes.

William James saw the elephants and tigers at P. T. Barnum's zoo in 1873. "I could," he wrote, "never hope to *sympathize* in a genuine sense of the word with them. And the want of sympathy is not as in the case of some deformed or loathsome human life, for their being is admirable; so admirable that one yearns to be in some way its sharer, partner, or accomplice. Thus their foreignness confounds one's pretension to comprehend the world—while their admirableness undermines the stoic or moral frame of mind in which one says the real meaning of life is *my* action. The great world of life, in no relation with my action, is so real!"³⁴ Facing the inhuman, James feels both the impossibility of contact and a yearning for fellowship. He did not vaunt the majesty of human knowledge before the beasts but mourned its inadequacy. Stunned by otherness, he longed to share it in ways other than knowing—sharing, partnership, or complicity. He belongs to a tradition that appreciates how wild affinities destroy epistemological hubris.³⁵ As Emerson, the tradition's founder, said, "I hold our actual knowledge very cheap. Hear the rats in the wall, see the lizard on the fence, the fungus under foot, the lichen on the log. What do I know sympathetically, morally, of either of these worlds of life?"³⁶ Transcendentalist thinking

34. William James: *The Essential Writings*, ed. Bruce Wilshire (New York: Harper and Row, 1971), vii.

35. See Richard Poirier, "Writing off the Self," *Raritan* 1 (summer 1981): 106–33, and Anita Kermode, "William James and His Cuttlefish," *Raritan* 2 (winter 1982): 115–19.

36. Ralph Waldo Emerson, "History" (1841), in *Selected Writings of Emerson*, ed. Donald McQuade (New York: Modern Library, 1981), 127.

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intuits a secret kinship between the human and the inhuman. "The greatest delight which the fields and woods minister is the suggestion of an occult relation between man and the vegetable."³⁷ As Thoreau says in *Walden*, I grew like corn in the night. He asks, Shall I not have intelligence with the earth? What is man but a mass of thawing clay? Am I not part vegetable mold myself? Empathy with the inhuman is the moral and aesthetic lesson that might replace our urgent longing for communication.

Communication with Aliens

I firmly disbelieve, myself, that our human experience is the highest form of experience in the universe.

WILLIAM JAMES, *PRAGMATISM*, LECTURE 8

ET article
Humans have long imagined themselves in contact with super- and sub-human intelligences; it is a specieswide longing. Before the twentieth century many philosophers had great interest in the inhabitants of other worlds, but as with animal communication, only since the late nineteenth century has the dream of empirical contact with beings not of this planet been pursued as a scientific enterprise.³⁸ With the modern attack, led by Marx, Feuerbach, Nietzsche, and Freud, on the human imagination as an unwitting maker of all kinds of fantastical others (gods, demons, angels, munchkins, trolls, water sprites, and spirits of all sorts), science has compensated by seeking contact with objective others—animals, aliens, "primitives," the unconscious. In research on extraterrestrial intelligence, as on animal communication, all kinds of strategies have been sought to transcend the inevitability of one-way communication. Any message we receive must decisively prove to be immune to our own fabrications. As in Dorothy Parker's anxious monologue, we wait for a telephone call. The quest for contact with aliens is a leading example of the dialectic of enlightenment, the persistence of myth at the heart of the most secular enterprises. Even more, it is an allegory of faith in a disenchanted universe.

The search for extraterrestrial intelligence (SETI), an international sci-

37. Ralph Waldo Emerson, *Nature* (1836), in *Selected Writings of Emerson*, ed. Donald McQuade (New York: Modern Library, 1981), 7.

38. On the philosophical history of such interest, see Lewis White Beck, "Extraterrestrial Intelligent Life," in *Extraterrestrials: Science and Alien Intelligence*, ed. Edward Regis Jr. (Cambridge: Cambridge University Press, 1985), 3–18.

entific effort of varying fortunes since its start in the late 1950s, is perhaps the most sustained examination of communication—and communication breakdown—in late twentieth-century culture.³⁹ SETI is a child of the twentieth century. The project presupposes knowledge of the speed of light, the measurement of vast distance, the discovery of radio waves, means of sorting signal from noise (such as cryptography and information theory), high-speed computers, and the longing to break through the circle of our own cognitions to touch otherness. The titles of recent articles on SETI tell a tale of communicative pathos: Is anyone out there? Are we alone? An invitation to strangers. Who's there? Still listening. Tuning in to out there. The next voice you hear. Earthlings are figured as Miss Lonelyhearts waiting by the telephone. The literature on SETI, both scientific and popular, is rife with explicit discussion of communication. SETI not only is the project of understanding radio emissions from deep space but is also implicitly a sustained inquiry into our earthly dilemmas about communication. It is a fertile field for exploring the philosophical consequences of storage and transmission capacities across vast expanses of time and space. Perhaps we are interested in communication with aliens because we live among alien communications. Every owner of a radio or television set possesses both a time machine and a teleportation device for alien personages.

Interstellar communication is riddled with astronomical gaps: mind-numbing distances, ranging from four light-years to billions; delays between call and response that could outlast a thousand earth generations; the problem of signal persistence through Doppler shifts, space-time distortion, and signal scatter caused by cosmic dust and gases; and the prospect of such a radical otherness in our interlocutors that their math, their being in time, or their bodies might be like nothing in our ken. Their strangeness could put all other strangeness to shame. They might count with irrational numbers or communicate by modes of being instead of perceptible signals. Any message they send to us might never be recognized as a message. Codes for them might look like nature to us. The whir of the cicadas might be a message they are sending. Their sensitivity to quantities too vast or infinitesimal, or to matter too gross or subtle for the frame of our senses and minds, or even their time scale, might be so queer that no junction could ever be made. If we couldn't understand a lion who spoke, why would we understand an alien?

39. It is also sometimes known as CETI, communication (or contact) with extraterrestrial intelligence.

Across such desperate distance, any evidence of the will to communicate may always be underdetermined, subject to all kinds of alternative explanations.⁴⁰

Extraterrestrial communication, more than any other situation, clearly shows that communication at a distance always comes out of the past. Any "message" received from a distant planet comes from a point already lost to time. If we were to receive a broadcast from a world near Arcturus, say, thirty-eight light-years away, we would hear only what the intelligences there had to say to us thirty-eight years ago. The "now" of reception would be the "then" of transmission. Communication with galactically distant worlds is an archaeological dig. Our dialogic couplings will be wildly asynchronous. SETI, by extremity of exaggeration, reveals what late nineteenth-century spiritualists knew: the unity of communication at a distance and communication with the dead.

Indeed, what psychical research was to the late nineteenth century, SETI is to the late twentieth. In both, highly respected scientists investigate topics that popular culture both abounds in and disdains as frivolous: spirits and aliens. Both draw on extant communications technology and practices. Psychical research owes an immense amount to the telegraph, telephone, and wireless for its imagery, as we have seen, and SETI is the latest step in the wireless imagination. Frank Drake, the founder in 1959 of Project Ozma, the first attempt to eavesdrop or tune in on the broadcasts of distant civilizations, and one of the senior players in SETI, compares any message we might send to faraway worlds to "an interstellar fax."⁴¹ Both psychical research and SETI confront massive but mockingly inconclusive quantities of data with the hope that a junction can be made. Both deal with the most poignant human concerns: mourning, cosmic loneliness, contact with the dead and distant (psychical research) or alien and distant (SETI). Both are moved by faith in the other's existence without the ability to take hold of a sure connection. Both imagine a universe humming with conversations we are unable, for whatever reasons, to tap. As James C. Fletcher, twice the head of NASA and an active supporter of SETI, wrote, "We should begin to listen to other civilizations in the galaxy. It must be full of voices, calling from star to star in a myriad of tongues."⁴² Both psychical research and

40. Dennis Overbye, "The Big Ear," *Omnis* 13 (December 1990): 44. Frank Drake has suggested that our most likely interlocutors in SETI are immortal beings who have infinite patience to await our response.

41. David Graham, "Intergalactic Conversations," *Technology Review* 96 (February–March 1993): 20–21.

42. James C. Fletcher quoted in Roger D. Launius, "A Western Mormon in Washington, D.C.: James C. Fletcher, NASA, and the Final Frontier," *Pacific Historical Review* 64 (May 1995): 233.

SETI develop innovative methodologies for sorting messages from static, signal from noise. Psychical investigation into telepathy was the origin of randomized design; the experimenter could thus be completely blind to any order created (e.g., in the arrangement of playing cards) so as to bar any unwitting collaboration from his or her own unconscious.⁴³ Information theory and cryptography, likewise, make SETI conceivable; it is fitting that Stanislaw Lem makes a mathematician with special expertise in statistics the hero of his SETI novel *His Master's Voice* (1968), a brilliantly dizzying meditation on the hermeneutic undecidabilities of a letter from the stars, a text outside any known relationship.⁴⁴ Both inquiries have produced methods to restrain the human rage for order, the will to impose meaning on randomness or otherness, and our overzealousness in credulity.

In fact there is a historical link between psychical research and SETI. Oliver Lodge, who in the 1890s wrote of the powers of radio to create direct communication between distant brains and was later an active psychical researcher, was also apparently the first to have the idea of using radio as an instrument of exploration in astronomy. He sought to identify solar radio emissions, but there was too much electrical interference in Liverpool—perhaps owing in part to the sparking of the electrical trams on the streets.⁴⁵ His plea for psychical research applies equally well to SETI: "Clearly the conclusion [that the chasm between the living and the dead can be bridged] is either folly and self-deception, or it is a truth of the utmost importance to humanity."⁴⁶ Cambridge University, and more specifically the Cavendish Laboratory, was the headquarters not only for many of the late nineteenth-century physicists who both hypothesized the ether and engaged in psychical research, but also of many of the key innovations after World War II in radio astronomy, which completely transformed our understanding of the universe. Since Newton a place of grace and order, the universe of radio astronomy is a Shiva's dance of creation and destruction, spectacular explosions of supernovas, and such unexpected weirdnesses as twin stars, quasars, dark matter, and black holes. The notion to use radio as an instrument of communication rather than of inquiry, however, appeared only in the late 1950s, with Project Ozma.

43. Ian Hacking, "Telepathy: Origins of Randomization in Experimental Design," *Isis* 79 (1988): 427–51.

44. Stanislaw Lem, *His Master's Voice*, trans. Michael Kandel (New York: Harvest/HBJ, 1968).

45. Nigel Calder, *Radio Astronomy* (New York: Roy, 1958), 11.

46. Oliver Lodge, *Raymond, or Life and Death, with Examples of the Evidence of Survival of Memory and Affection after Death* (New York: Doran, 1916), 389.

Reading some of the founding SETI articles from the late 1950s, like messages sent from distant planets forty light-years away, one is struck by how much they assume science is the universal language. In the founding article of SETI, Giuseppe Cocconi and Philip Morrison thought it "highly probable that for a long time [extraterrestrial societies] will have been expecting the development of science near the Sun." Once we receive and answer their signal, we would enter into "the community of intelligence," a sort of intergalactic invisible college.⁴⁷ The SETI scientists have a touching confidence that messages from other worlds would be sent by scientists eager to engage in scholarly exchange rather than by mindless bureaucrats, conquistadores, or con artists. Further, underlying early SETI documents is a rather apocalyptically tinged story of technological progress, with the hopes that more "advanced" civilizations could help us skip over intermediate stages without destroying ourselves in the meantime. One scientist even proposed that the apparent silence of the cosmos "may simply be that the mortality-rate for advanced civilizations is too high for them to become abundant in the Galaxy."⁴⁸

Radio begins as a séance, fragmentary messages flying through space, trying to make links with some listener, as in Rudyard Kipling's story "Wireless"; in SETI it ends where it began, in the quest for junction, beaming messages into space, scanning the heavens for proof of intelligible fabrication. The link between DX-ing, spiritualism, and SETI is explicit in the 1997 film *Contact*, based on the Carl Sagan novel by the same name. As a child the heroine, played by Jodie Foster, is an amateur radio operator, who calls "CQ, CQ" into the great beyond. When she is orphaned, her DX-ing becomes a kind of quest for her dead parents. In adulthood she is a beleaguered SETI researcher who finally hits the jackpot—a message that beats out, rap by rap, the sequence of prime numbers from 1 to 100. In the climax, she travels to a distant world where she has a reunion with her father, or rather with an alien presence using her father as a reassuring simulation through which to speak to her. SETI is here figured as a quest for contact with the dead and others across distance. Of course the "contact" she has made leaves no decisive objective evidence except eighteen hours of static-filled tapes, such that the question of the reality of the junction (versus a huge hallucination

47. Giuseppe Cocconi and Philip Morrison, "Searching for Interstellar Communications," *Nature* 184 (19 September 1959): 844.

48. R. N. Bracewell, "Communications from Superior Galactic Communities," *Nature* 185 (28 May 1960): 671.

on her part) is, as always, left naggingly open. The possibility of communication is the twentieth century's version of the mystery of faith.

SETI seeks a true signal amid an infinity of noise; thus by far the most effort has been put into listening rather than sending. Like William James looking for evidence of immortality in the "bosh" of mediumistic performance, K looking for recognition from the Castle, or a lover listening to ten million radio voices for a telephonic message from his or her beloved, SETI faces the vertigo of infinitesimally small odds. The SETI scientist is in a position analogous to that of the radio listener trying to find out whether the voice of Kate Smith or Rudy Vallee is sincere, since he or she must sort out all the potential false sources of noise from the universe. The universe itself emits all manner of radio signals; the first pulsar, for example, was discovered in 1967 and was first thought to be an amazingly insistent radio signal from a remote intelligent civilization. The Cambridge astronomer and Nobel laureate Antony Hewish even hushed up the discovery for six months for fear of causing a public uproar if it really was some kind of distant signal. (It turned out to be a neutron star rotating on its axis at astounding speed.)⁴⁹ Indeed, the receipt of an alien signal, especially if it was a declaration of war or the design for a super weapon, could pose a profound question of public relations, not to mention defense; there is even a worldwide pact among researchers not to respond at once if some message does come, lest we inadvertently step into some intergalactic conflict.⁵⁰ Radio astronomers are supposed to act initially as what Internet culture calls "lurkers"—those who read messages but do not make themselves known by actually posting one.

SETI recognizes the gaps of which communication is made. Galactic conversation can be nothing but alternating broadcasts. As Stanislaw Lem notes, "When 'questions' were separated from the 'answers' they received by a time that was on the order of centuries, it was hard to call such an exchange 'dialogue.'"⁵¹ Much of SETI's strategy is explicitly the one-way work of eavesdropping. Astronomer Freeman Dyson, a long-time leader in SETI, proposed surveillance as the best course for discerning intelligent life in the universe: rather than DX-ing with the universe (searching for the most distant signal possible), we should inspect the

49. S. A. Kaplan, "Exosociology: The Search for Signals from Extraterrestrial Civilizations," in *Extraterrestrial Civilizations: Problems of Interstellar Communication*, ed. S. A. Kaplan, trans. from Russian (Jerusalem: Keter Press, 1971), 7.

50. Graham, "Intergalactic Conversations," 20.

51. Lem, *His Master's Voice*, 103.

vast archives of photographic data of deep space for evidence of cosmic engineering (specifically so-called Dyson spheres, huge solar power stations that would serve as proof of distant alien intelligence).⁵² SETI offers a nice catalog of the pieces that result once dialogue is, in Paul Ricoeur's word, "exploded." There is spying (I receive a signal not meant for me without your knowing it), hailing (I recognize you as a potential interlocutor), recognition (you "copy" my recognition with a counterhailing), and interaction. The enormous elongation of the communication circuit in deep space, like the equally radical extensions of the telegraph or photograph, reveal that the fundamental problem of communication is not adjusting semantics so we mean the same things with words, but figuring out ways to come into fellowship with otherness.

SETI faces a task suited for Kabbalists: scanning an infinite text for the name of names. It must employ search strategies in impossibly vast aggregates. Prophets heard voices from the heavens, but SETI researchers have to contend with the gigabytes of radio emissions naturally produced by the universe, to say nothing of the interference they produce for themselves (the electrical trams of Liverpool, or Clever Hans problems). SETI might rightly take its place among the theological and interpersonal abysses of the twentieth century. Kafka and Borges understand best the stakes of the quest for intelligible order in a pulsating cosmos. Borges's story "The Library of Babel" is a delirium of tedious infinities. This library contains every possible combination of all the letters of the Roman alphabet bound in volumes of 410 pages each. The number of volumes is very large, but not infinite. We know beyond the shadow of a doubt that there is somewhere in the library of Babel the greatest literary work possible with these letters, the Miltonic epic Keats would have written had he lived or sublimities Proust only dreamed of: yet there are billions of variants of this grand work, slightly diminished, and an even greater all but infinity of utter nonsense. We are unable to know if we have found it, since there are a hundred thousand versions perfect in everything but a single typo and a billion slightly blemished versions, and all but an aleph-null of deformed pieces. The absolute confidence that the masterpiece exists—along with every possible masterpiece—goes together with the sure knowledge that it cannot be found. The masterpiece cannot announce itself as such. Somewhere in the library there is even a volume that explicates the order of the library—a catalog—but it too exists in a billion spurious versions.

52. Freeman Dyson, "Search for Artificial Stellar Sources of Infrared Radiation," *Science* 131 (1959): 1667–68. Dyson also has a Cambridge connection: B. A. in mathematics, 1945.

Borges gives us an allegory of inability to connect: theologically, statistically, communicatively. His library is dissemination taken to an infinite extreme. One-to-one contact becomes impossible. Just so, we may know for sure that the animal hurts, but access to that pain is forever barred; we may believe the chances tiny that we are alone in the universe, but the others are so far away. The Library of Babel is an allegory of the minimal odds of our own existence, and still we exist. We seem an exception in the universe, and yet mundanity cloaks us on every side. SETI is an emblem of the hermeneutic giddiness that faces anyone staring into the abyss; our attempts to "communicate" have only made it worse.

One thing that distinguishes SETI from previous attempts to communicate with the heavens is the acute sense of the possibility of error. A 1959 article important in launching the movement nicely stated the grand prize: "indisputable identification as an artificial signal."⁵³ The issue was how to know a bona fide signal from other worlds—what others since have called "an intelligible beacon"⁵⁴ or "a non-random possibly intelligent transmission."⁵⁵ To be taken as a message, a signal must have an extremely low probability of being either a random or a natural product. Russian exoscientists made "artificiality criteria" a topic of very sophisticated study, including analysis of the statistical properties of signals.⁵⁶ Sought is an unmistakable signature of artifice, of a will to communicate—a concerto, pi to one hundred places, or some other feat of a playful (nonutilitarian) intelligence. Increased capacities of data processing have only escalated the pathos of infinity. Like a Penelope waiting for a rendezvous with an Odysseus she doesn't know if she will recognize, SETI scientists look for incontrovertible tokens. They seek a sign.

The image of the earth alone in the universe is analogous to the idealist's "man" cooped up in his room: both long not to be alone, to find a sign of something that is not a projection of the self. Though we live amid alien human intelligences—music, mathematics, art, and argument—a simple SOS from Tau Ceti would electrify the whole world. It is not only, contra Turing, intelligence or, contra Shannon, information that concerns us in communication, but the body it comes from. What SETI hopes for is the self-consciousness that the other is communicat-

53. Cocconi and Morrison, "Searching for Interstellar Communications," 846.

54. Alan Lightman, "E. T. Call Harvard," *Science* 85 (September 1985): 20–22.

55. Gregg Easterbrook, "Are We Alone?" *Atlantic Monthly*, August 1988, 27.

56. L. M. Gindilis, "The Possibility of Radio Communication with Extraterrestrial Civilizations," in *Extraterrestrial Civilizations: Problems of Interstellar Communication*, ed. S. A. Kaplan, trans. from Russian (Jerusalem: Keter Press, 1971), 103–8. The Eastern Europeans have led the way in these inquiries, in science on the one hand and in literature and cinema on the other.

ing, a sign rather than a signal: nothing would quite thrill like call letters, a break in the flow of programming to “identify oneself” (phrase of Hegelian wonder). Call letters would meet the precise definition of a social sign for George Herbert Mead: a sign used by the self to connect it to others. As one astrophysicist said, “We’re looking for the one combination that says, ‘Hi there.’”⁵⁷ The grand prize of communication at a distance recurs: Come here, I want you.

Otherness turns out, alas, always to be internally defined. In 1959 Cocconi and Morrison offered an elegant and influential argument for using the natural wavelength of the hydrogen atom as the logical frequency to send an interstellar message, assuming that to be a universal constant. But it is a postulate, like the Kantian or Jamesian varieties, that the aliens would also think to broadcast on that wavelength. SETI is a fine example of the post-Kantian problematic of how to recognize authentic empirical inputs within the all-coloring powers of human cognition. Today some scientists fear that the “pollution” of the electromagnetic spectrum by earth’s own broadcasting may be so severe that the search may have to shift from radio to the optical band. As interference makes earth-bound scanning impossible, astronomers may either shift to infrared and visible wavelengths or use space stations to scan for signals from deep space.⁵⁸ The Drake equation, which gives grounds for calculating the likelihood of intelligent life elsewhere in the universe, estimates the longevity of a communicating civilization at one million years. Perhaps Drake should have calculated instead the span between the discovery of radio and the filling of the spectrum—more like one hundred years in the case of earth history. The shift in strategy from radio to optics is motivated, of course, not by any sense that extraterrestrials might have shifted their signals to a higher frequency but by the capacities of *our* instruments, which always constitute the ceiling on communication. When the aliens in *Contact* communicate with Jodie Foster via her father’s persona, they say they are trying to soften the shock of the experience for her, but they end up depriving her of proof of having burst the bubble of solipsism.

The basic assumption of SETI—that a signal must stand in stark contrast to the rest of nature—is based on a shrinkage of the realm of the semiotic. In romanticism, with such thinkers as Ritter, Schelling, or even Kant’s notion of a *Chiffenschrift der Natur* (hieroglyphics of nature), nature was once assumed to be a text written in cipher; more anciently it

was assumed to be full of cryptic messages intelligible to the sage or soothsayer. We have seen, since, a recession in the general supply of meaning. In nature we have come to assume that all those obvious but unintelligible and apparently unauthored patterns—sunsets, cries of birds, the guts of a lamb, or the fabric of clouds—are not the work of a conscious intelligence that we can interpret. The pathetic fallacy, animism, and anthropocentrism have all been scared out of us. And so solipsism is inescapable, since the only source of intelligible order is within us. Our lack of confidence in the objectivity of meanings is one key source of the pervasive sense of communication breakdown.

Some exoscientists have not stopped short at receiving messages but have sent messages to space—potentially the ultimate dead letter. Carl Sagan and others designed a message to be sent to outer space with *Voyager* in the 1970s that was supposed to be stripped of any extraneous cultural coding. Twenty-five years later this image already seems an emanation from an alien civilization, with its 1970s hairdos, vision of gender (the man takes the lead in greeting while the woman stands in a pose half demure, half sexy), and race (the couple are clearly white, though whites are not the majority race of the planet). Even in its attempts to transcend itself, a historical moment only reveals its blindness to its own face. By transposing the passage of time to flight across space, SETI offers lessons in the philosophy of history: what is hardest to recapture of the past is not its treasure-house of information about itself but its ignorance of what is most obvious to later observers. The attempt to send a message on a spacecraft is almost amusing, considering just how “hot” our planet has been over the past century in its emissions on the electromagnetic spectrum. Why the aliens should prefer the message on *Voyager* to all the episodes of *I Love Lucy*, *The Twilight Zone*, *Gilligan’s Island*, or any other signal we earthlings have sent zooming through interstellar space is anyone’s guess. SETI scientists at times evince a touching faith that the extraterrestrials would share their preference for Bach or mathematics over rock and roll or Scrabble.⁵⁹

The aliens populate cinema, television, and the tabloids, all of which assume that contact has been made and take it from there with bathos or horror. SETI in contrast scrupulously scrutinizes the alternative hypotheses and wants pure, intelligible other mind, not just patters created by the reader, pulsars, background radiation, or a passing airliner or satellite. Nature and self are systematically excluded as authors: inter-

57. Kent Cullers, quoted in Overbye, “Big Ear,” 48.

58. Robert Naeye, “SETI at the Crossroads,” *Sky and Telescope*, November 1992, 514.

59. *Mother Earth News* 122 (March–April 1990), in its twentieth anniversary issue, sent an open letter to the great blue yonder, apologizing in effect for the bad condition of the planet!

tional otherness must break through. But Plato and Hegel would remind us that if the other has no body whose presence we could desire, then what makes us think minds can make contact? We might even, like Maxwell's glass lenses that never touch, be surrounded by extraterrestrial intelligence, only to never come in contact.

This is indeed the oddest thing about SETI—that we are so plainly surrounded with alien intelligences—bees, whales, porpoises, chimpanzees, DNA molecules, computers, dung beetles, slime mold, even the planet as an ecosystem—but still feel lonely and unable to communicate.⁶⁰ How much intelligence and wisdom are found in Chinese civilization, for instance, and how ignorant the West continues to be of it!⁶¹ Why do we seek distant alien intelligence when we hardly know what to do with our own? The huge barrier here is the strangeness that we never see: our own faces. We haunt ourselves like aliens. The main ghost that stalks me is my self, the only person whom everyone else knows but I never can. As Peirce wrote, "Facts that stand before our face and eyes and stare us in the face are far from being, in all cases, the ones most easily discerned."⁶² Our failure to recognize ourselves fuels our thirst for confirmation from alien intelligences. "It is only when we think of ourselves on the receiving end that imagination seems to fail us."⁶³ The issue is our failure to enter into a common realm with the other: we are back with all the misfires and distortions that Socrates sketches.

The problem may be less our loneliness than our too stringent sense of communication. If we thought of communication as the occasional touch of otherness rather than a conjunction of consciousness, we might be less restrictive in our quest for nonearthly intelligence. What is the human truth of SETI? That the mundane is only a small pocket of the extraordinary. Of the billions of solar systems, we know of only one so able to support life. An orbit slightly closer to the sun, a tilt of the earth's axis by a few more degrees, or an errant comet all could have made life on earth impossible. Of the five billion years of earth's existence, humanoids have existed for one thousandth of that time. Civilization as we know it (with its writing, war, patriarchy) has existed for one thousandth of that. We are, as the romantics all insisted, the

60. This and many other excellent points are made in Anthony Weston, "Radio Astronomy as Epistemology: Some Philosophical Reflections on the Contemporary Search for Extraterrestrial Intelligence," *Monist* 71, 1 (1988): 88–100.

61. Naeye, "SETI at the Crossroads," 515.

62. Charles Sanders Peirce, "The Law of Mind," *Monist* 2, 4 (1892): 559.

63. Weston, "Radio Astronomy as Epistemology," 91.

great exception to the universe, the rare case, the completion of nature, the way that the universe comes to self-consciousness.

The question should be, then, not how we break through the sludge of habit to rediscover the hidden strangeness of things, but how we ever managed to convince ourselves that anything was not a dissemination of intelligence. Boredom is the amazing achievement, not wonder. Our senses can catch only a narrow portion of the spectrum: the cosmic rays, rainbows above or below the range of visible light, or tectonic groans of the earth all elude us. What the moralists have said about the universe, science since Faraday has proved to be empirically true: We are immersed in a sea of intelligence that we cannot fully understand or even sense. Emerson's point about spiritualism applies equally to SETI: Why search so wistfully in a corner when the whole universe is a message? SETI research reminds one of Thoreau's quip about those who tried to measure the depths of Walden Pond: "They were paying out the rope in the vain attempt to fathom their truly immeasurable capacity for marvellousness."⁶⁴ In the 1890s William Crookes, Charles Sanders Peirce, Henry Adams, and many lesser spirits were delirious about the chances for human connection via waves naturally emitted from our persons. The hope for brain waves, however, remains constrained by the dullness of our instrumentation; perhaps it is simply our narrow bandwidth that makes telepathy a dream, the privacy of pain a given, and democracy always bounded by the dynamics of a conversation in which only one person can speak at a time.

Instead of being terrorized by the quest for communication with aliens, we should recognize its ordinariness. There is no other kind of communication. All our converse with others is via signs, those creatures from outer and inner space. This was a central tenet of Peirce, who led the pragmatist revolt against Cartesian hierarchies. His essay "Some Consequences of Four Incapacities" (1868) directly attacks introspection and Descartes, offers a behavioral understanding of communication, is open to the animal or the inhuman as a potential partner, and relinquishes any claim of special privilege for the human mind—which Peirce, borrowing a line from Shakespeare's *Measure for Measure*, called "man's glassy essence." Not afraid of the charge of animism, Peirce takes human beings and words as continuous. "It may be said that man is conscious,

64. Henry David Thoreau, *Walden* (1854; New York: Norton, 1975), 189.

while a word is not. But consciousness is a very vague term . . . consciousness, being a mere sensation, is only a part of the *material quality* of the man-sign." If words do not have consciousness, in what sense do people have it? Significance, in other words, does not need a live body; a word in itself can radiate meaning, in the same way that a phonograph or photograph can hold thought in objective form. Peirce argued "that a person is nothing but a symbol involving a general idea," and he later drew the even more radical conclusion that "every general idea has the unified living feeling of a person."⁶⁵ The criterion of life, then, does not suffice to distinguish humans from signs. "The man-sign acquires information, and comes to mean more than he did before. But so do words." Words mean what people have made them mean, but people mean nothing that words have not taught them to say. Words have their associations and communities, just as people or animals do. "In fact, therefore, men and words reciprocally educate each other; each increase in a man's information involves, and is involved by, a corresponding increase of a word's information."⁶⁶

Peirce's argument is not only a critique of Cartesian high-handedness, or a semiotic animism that ascribes objective reality to meanings, as semantic theorists would fear, but an effort to invite us into a beloved community, one that includes all forms of intelligence as our partners in some way, at least in some future horizon. Though his thinking about evolutionary love and corporate personality ranks among the most wonderful and strange to come from the pragmatist tradition, and though he clearly does believe (in contrast to James) in the ultimate possibility of something like shared brain space, the ascription of independent intelligence to signs might be seen as Peirce's response to a communicative universe in which persons obeyed new laws of motion, scattering themselves into all fields in which signs may play.⁶⁷ We play host to signs like alien spores that have taken us over. Instead of taking signs as meaningful because they have an animating mind behind them, it is sounder to think of minds as themselves signs mixed with mortal life. The signs are as conscious as we are; they too have inner lives. Peirce's theory of signs is historically indebted to an age when intelligence can be stored in media.

65. Charles Sanders Peirce, "Man's Glassy Essence," *Monist* 3, 1 (1892): 21.

66. Charles Sanders Peirce, "Some Consequences of Four Incapacities" (1868), in *Philosophical Writings of Peirce*, ed. Justus Buchler (New York: Dover, 1955), 249.

67. A helpful explication and critique is Jürgen Habermas, "Peirce and Communication," in *Peirce and Contemporary Thought*, ed. Kenneth Laine Ketner (New York: Fordham University Press, 1995), 243–66.

Clearly, then, neither Peirce nor James is a defender of some sort of humanism, of "man" as the measure of all things. They recognize, in contrast, our fundamental inhumanity in the sense that we are always more or less than human. They do so with a quality of mercy that other antihumanisms such as behaviorism and poststructuralism often lack. They say not that inner life is a mentalist figment but that interiority appears as an other; that its form is polymorphous; that we find our inner life dispersed pluralistically across the fields of our experience. Inner life is best thought of not as a control panel presided over by a homunculus, but as behavior continuous with all else that we do. The inner and the outer are two sides of the same Möbius strip. We honor, not demean, the riches of inner life by seeing it as one kind of complex behavior not appreciably different from any other we engage in.

The pragmatists teach us that we should care for children, animals, the mad, the deformed, spirits and the dead, aliens and nature not because they potentially have a inner life of reason that can lay claim to our recognition (as Descartes might have it) but because they share our world and our shape. We should relate to animals not because they have minds, but because they have vertebrae, need oxygen, or feel pain. Our obligation to other creatures comes not from our ability to tap into their inner life but from a primordial kinship deriving from a common biological history, as variant forms of intelligent life that God or nature has seen fit to produce. The kinship we share with all creation is written into our bodies before we ever make mental contact (a lesson the pragmatists learned from Emerson and Darwin alike). This is a commonsense fact of compassion rather than an epistemological conundrum of other minds. Against the impasses of solipsism James wrote: "Men who see each other's bodies sharing the same space, treading the same earth, splashing the same water, making the same air resonant, and pursuing the same game and eating out of the same dish, will practically never believe in a pluralism of solipsistic worlds." A behaviorist query—Do we in fact cooperate?—is the question pragmatism poses to the worries about the impossibility of communication. Lovable form trumps abstract impossibilities. "The practical point of view brushes such metaphysical cobwebs away."⁶⁸

This recognition involves a softening of the heart, an admission of the inefficacy of our glassy essence against the awe of strangeness. Interior consciousness ceases to be the criterion of humanness. The refusal

68. William James, "The Function of Cognition," in *The Writings of William James: A Comprehensive Edition*, ed. John J. McDermott (Chicago: University of Chicago Press, 1977), 146.

to probe inner life can lead in the more militant direction of depriving all beings of an inner life (some forms of behaviorism) or in the wilder and superior direction of granting an admirable but inaccessible innerness to all creatures, of giving, like Emerson or Whitman, a welcome to the universe—democracy in the best, full sense. A true democracy would have to include a much wider range of creatures than humans, for humans themselves are many creatures. Full democracy would be transspecies, transgender, transrace, transregion, transclass, transage, transhuman: what Emerson called “the democracy of chemistry.” Even the dead would be invited.

The problem of communication in the twentieth century arises with much less exotic partners than aliens, animals, and machines, although again it is already a failure of recognition that we think of these creatures rather than ourselves as exotic. All the gaps and breakdowns we find with them we find among ourselves. But they also give us a way to imagine different worlds in which we might dwell. Consider the dolphins. Dolphins have no hands, so they have no works—no weapons, no records, no history, no government, no property, no law, no crime, no punishment.⁶⁹ No dolphin is married to any other dolphin, but all dolphins are kin. They are the true idyll of communism as Marx dreamed it. There is no forbidden fruit to expel them from Eden. They are naked and not ashamed. They are some of the aliens among us; women are some other aliens, as are men. So is the self: I am the thing from outer space (the ancients knew this). I am the UFO haunting everything (Novalis, Coleridge, and Emerson all knew this). So the dolphins sing and mate and play and eat and swim. They roll, exempt from the regime of secondness. What collective poetry, oral histories, symphonies of discussions over hundreds of leagues, fondness, relationships they must have. Voices that travel for hundreds of miles, allowing completely asynchronous dialogues. What friendships. What grief at the loss of a fellow to the nets or the killer whales. What philosophical dialogues, with no record but the consciousness of the community that listens. All conversation would be a reading of the archive of the community, as conversational turns traveling across great stretches of water would come to each participant in a unique order. Each response would appear

69. Loren Eiseley, “The Long Loneliness: Man and the Porpoise,” in *A Writer's Reader*, ed. Donald Hall and D. L. Emblen (Boston: Little, Brown, 1979), 140–47.

in its true light as a new beginning. Dialogue and dissemination would be indistinguishable. The sea must be the original agora, the place of speech. But the dolphins have no agonistics because there is no drive to besting or individuation; their works of verbal invention are collective compositions. Theirs is a life of sporting firstness. If the hearing capacities of the dolphins are as advanced as our vision, dolphins may be exempt from the hardest argument against democracy: the ability of only one person to speak and be heard at a time. Dolphins can perhaps hear many of their fellows speaking at once; they would not be torn by the unfortunate mismatch between hearing and speaking, which makes democracy ever subject to constraints of scale. The party would be a party always, a polylogue in which everyone spoke and everyone heard. Such is perhaps the vision we should take away from a century's attempt to make contact with alien creatures.