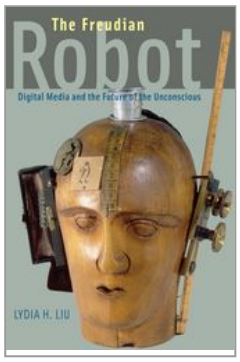

The Freudian Robot: Digital Media and the Future of the Unconscious
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The Cybernetic Unconscious

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[–] Abstract and Keywords

This chapter focuses on the work of Jacques Lacan and his 1954–55 seminars. It proposes a new interpretation of Lacan's theory of language and the symbolic chain and his notion of the unconscious by investigating the intellectual provenance of French theory typically associated with this central figure. Lacan's reinterpretation of Freud must be significantly rethought in tandem with what he had learned about game theory, cybernetics, and information theory when these theories were systematically imported to France from the United States. The use of writing espoused by John von Neumann and Oskar Morgenstern to generate strategic moves in game theory was taken up by Lacan to think about the function of the psychic machine of the unconscious. This psychoanalytical work provides some unusual insights about the cybernetic unconscious of the postwar Euro-American world order.

Keywords: cybernetic unconscious, Jacques Lacan, theory of language, Sigmund Freud, game theory, psychic machine

> A short text comes to our aid, from Edgar Poe, which the cyberneticians, I noticed, make something of. This text is in *The Purloined Letter*, an absolutely sensational short story, which could even be considered as essential for a psychoanalyst.
>
> Jacgues Lacan, “Odd or Even?”March 23, 1955

Contrary to common belief, a great deal of what we now call French theory was already a translation of American theory before it landed in America to be reinvented as French theory. For example, it is startling to ponder how two different concepts “game” and “play” in game theory have morphed into a single idea of “play” in literary theory when they are brought back to the home country on the wings of the French word *jeu*. To be sure, new meanings are bound to be invented during these roundtrip processes, but what gets lost in translation is the concept of “game,” game theory, and, more importantly, the associated history of cybernetic developments in the cold war. This chapter continues our investigation of the evolution of digital writing by delving into that history; in particular, I will explore how the work of Jacques Lacan

can help us think about the psychic machine and gain some insights about the future of the unconscious.

(p.154) By now, the reader should begin to realize that the concept of the stochastic process is indispensable to information theory, cybernetics, and contemporary scientific discourse in general. We have seen how the stochastic process in Printed English involves the play of chance and probability with respect to *n*-letter sequences that can result either in nonsense sequences or in random series approaching legible English phrases. The concept "stochastic" has been rendered into French as "aleatory" through cybernetic translations and is correctly understood by French scientists and philosophers as a mathematical concept. But this concept is caught in a similar blind play of signifiers, as in the instance of "game," when "aleatory" returns to English through literary and philosophical translations that seldom render the French word back to "stochastic." As we know, the term "aleatory" regularly appears in the writings of Derrida, Lacan, Deleuze, and other French theorists and is often left untranslated by the English interpreters. Thus the loanword "aleatory" becomes a source of mystification and cuts the English-speaking reader off from the familiar cybernetic context where the English word "stochastic" is the appropriate one to use. This confusion has resulted from the roundtrip movement of the Greekderived word "stochastic" into a Latin-derived French word "aleatory" and then back into English which generates a Latin-derived loan "aleatory." In the context of scientific discourse, the concept "stochastic" is always precise and never confusing as to its intellectual provenance. In short, the roundtrip cycles of translation do much more than repeat the play of mere words between English and French. Rather, they frequently function like movie screens on which we sometimes project our fantasies and stories about transatlantic intellectual exchanges and displace the history of those exchanges.

French Theory or American Theory?

Compared with how much has been written about Jacques Lacan's rejection of American ego psychology, we know little about how he embraced game theory and cybernetics in the 1950s and developed his notion of the symbolic order on that basis.[1] It is not as if scholars were unaware of the ways in which French theory has been translated, published, and fashioned by **(p.155)** American academia.[2] Some critics would go so far as to claim that "French theory" was an American invention and this tradition reflects an ongoing process of American reception of all kinds of European imports going back to at least the eighteenth century.[3] An invention it may well have been; but an invention of what? Has the flow of indebtedness not gone the other direction and in reciprocal ways as well?

If we give but momentary attention to what Jean-Paul Sartre was saying when he reacted to the Structuralist's move to decenter the subject in the 1960s, we begin to discern the contours of a very different intellectual landscape here. Sartre contended that no one could grasp the ideological implications of the Structuralist moment until he or she took a hard look at "what is going on in the United States," where "a technocratic civilization no longer holds a place for philosophy unless the latter turns itself into technology."[4] Sartre may have perceived a few things his contemporaries failed to notice in their enthusiasm to embrace the new theory, but it seems that the French philosopher was fighting a rearguard battle against the spread of technocratic civilization. When we consider how the world was quickly coming under the sway of American militaristic and technocratic hegemony in the cold war, there seems a great deal more at stake than the survival of (European) philosophy. Still, we must credit Sartre with his astute grasp of the role of the United States in the fashioning of the intellectual discourse of his time. He may or may not have been aware that some American intellectual exports were fast

becoming French theory to be reimported to American universities, where scholars in the humanistic disciplines paid little attention to what their mathematician colleagues were doing in the next building and vice versa. Fredric Jameson was perhaps one of the few critics in American academia who, in the **(p.156)** manner of Sartre, warned his readers about "the ideology of structuralism" in response to the fever of French theory in the 1970s.[5] That ideology is spelled out by Kittler as a new mode of address in the military technology of cruise missiles of the cold war, and the death of the subject—a discovery to be celebrated by Poststructuralist critics—can be shown to articulate meaningfully to the development of the automated remote control of this weapon and other cybernetic weapons.[6]

Unfortunately, few on the west side of the Atlantic were prepared to recognize the American mind behind "French theory" during that time, much less the convoluted linkages between cybernetics and Structuralism (or what American literary critics term Poststructuralism) in the 1950s and'60s.[7] This blindness in the play of mirrors can be made to reveal itself along the migratory and circulatory routes whereby American game theory and cybernetics became progressively *unseen* and *unmarked* through its Frenchness. Of course, it is absurd in general to give theory any kind of national provenance, since scientists and theorists work and collaborate across national borders and borrow from each other's work all the time. This familiar knowledge need not, however, prevent us from confronting the historical conditions under which scientific research is prioritized and sponsored by modern states and can form strategic and close alliances with parochial, national, or imperial interests. So when I use the term "American theory" in this limited sense, it is not because I endorse the nationalist claims of any particular scientific community but because the provenance of so-called French theory in literary studies needs to be rethought in connection with the growing presence of American hegemony in postwar Europe.[8] If we must reopen the issue of who invented French theory, it would make better sense to rephrase the question this way: How did American theory become French theory?

(p.157) This American construct, which went variously by the names game theory, cybernetics, and information theory, made its way to postwar France (and elsewhere) in the late 1940s and 1950s and were avidly studied and translated by French scientists. The novel mathematical developments— all with close ties to the war efforts in World War II—represent some of the most innovative theoretical work across the disciplines and are commonly known by their authorial signatures. Game theory is generally attributed to John von Neumann and Oskar Morgenstern, whose groundbreaking *Theory of Games and Economic Behavior* was published by Princeton University Press in 1944.[9] This theory deals with decision making in competitive situations (zero-sum game, ruse, and bluffing, minimax theorem) and identifies patterns of reasoning to determine their implications for decision making and winning strategies. With the mathematical prestige of game theory, John von Neumann and Oskar Morgenstern introduced scientific rigor into economics and successfully turned the latter into a respectable discipline.[10] Four years later, information theory came into existence with Shannon's paper "A Mathematical Theory of Communication," which provided the theoretical foundation for communication engineering and digital media.[11] The early beginnings of cybernetics, on the other hand, date back to the first Macy Conference, which was held in New York in May 1942, but this new interdisciplinary effort did not become known to the world as "cybernetics" until Norbert Wiener borrowed a Greek word *Κυβερνήτης* (steersman) to name the field in 1948.[12] Almost around the **(p.158)** same time, Wiener began to lump information theory and cybernetics together to characterize the novel interdisciplinary study of control and communication in the machine and in the animal.

In France, the introduction of game theory, cybernetics, and information theory aroused a great deal of excitement and curiosity among the scientific and intellectual elite, including Claude Lévi-Strauss, Jean Hyppolite, Henri Lefebvre, Roger Caillois, Algirdas Julien Greimas, Derrida, Michel Foucault, Gilles Deleuze, and Roland Barthes. Some of them sought to incorporate the new theories into their work, while others were highly critical.[13] Elizabeth Roudinesco mentions that the period "marked the entry of linguistics into the Freudian domain" for Lacan.[14] Of course, she means structural linguistics. Roudinesco points to Lacan's dialogue with Jean Hyppolite in 1954 as a pivotal event in the former's decision to move away from Hegelian philosophy and gain access to Structuralism. It is worth mentioning further that the Hegelian philosopher Hyppolite not only attended Lacan's seminar and dialogued with him at this time, but he was keenly interested in cybernetics and put important questions to Wiener in person when the latter visited France.[15] Like Lacan's "Seminar on 'The Purloined Letter,'" Hyppolite's much-admired "*Le coup de dés* de Stéphane Mallarmé et le message," published in 1958, grew out of this intellectual fervor surrounding chance, message, Maxwell's demon, entropy, and the other favorite topics of cybernetics and information theory.[16] If Lacan moved away from Hegelian philosophy in 1954, he did not so much turn toward structural linguistics as begin to show a strong interest in cybernetics and information theory. As a matter of fact, the seminars he conducted in 1954–55 provide the overwhelming evidence that he looked upon cybernetics and information theory as an alternative intellectual framework for rethinking Freud. Even structural linguistics sought to refashion itself on the model of information theory during this period.

(p.159)

We know that Lacan met Jakobson through the introduction of Lévi-Strauss back in 1950 and became his close friend.[17] Jakobson's speculations about aphasia and structural poetics, especially his conceptualization of metaphor and metonymy, made an unmistakable imprint on Lacan's work on language. The exposure to Saussure via Jakobson has led to Lacan's reworking of the relationship of signifier and signified in the symbolic order. In his original diagram, Saussure put the signified over the signifier (Fig. 18) but Lacan chose to reverse them by placing the signifier above the bar (Fig. 19). It bears asking, however, what caused him to take that step. Furthermore, did Lacan mean the same thing by language or *la langue* as did Saussure or Jakobson?[18] Philippe Lacoue-Labarthe and Jean-Luc Nancy's careful reading of Lacan's treatment of algorithm and operation appears to suggest the opposite, i.e., Lacan was moving away from structural linguistics and was leaving linguistics behind.[19] Although Lacan himself did not put it this way, what Deleuze and Guattari said many years later would have resonated with him: "language is a political affair before it is an affair **(p.160)** for linguistics; even the evaluation of degrees of grammaticality is a political matter."[20]

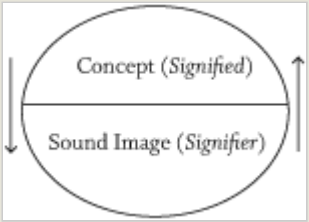

Figure 18. Ferdinand de Saussure's diagram of signified and signifier in the sign. From Ferdinand de Saussure, *Course in General Linguistics* (New York: McGraw-Hill, 1966), 66.

Figure 19. Jacques Lacan's reversed order of signified and signifier. From “The Instance of the Letter in the Unconscious,” *Écrits: The Complete Edition* by Jacques Lacan, translated by Bruce Fink (New York: Norton, 2002), 428.

In his reading of the “postface” to “Seminar on ‘The Purloined Letter,’” Bruce Fink makes an interesting observation, suggesting not only that Lacan has ventured “beyond the work on the symbolic order done by structuralists such as Lévi-Strauss and Jakobson” but that “Lacan is not a structuralist.”[21] Friedrich Kittler, in his own manner, takes note of the Lacanian “methodological distinction” among the real, the imaginary, and the symbolic as being primarily a matter of differentiation in materiality and tech-nicity that oversteps the bounds of the linguistic.[22] Kittler states simply that the world of the symbolic order is a world of the machine.[23] Fink's and Kittler's insights are worth exploring further, especially in regard to how the machine got into Lacan's symbolic, and which machine? Is it the typewriter, the computer, or something else? As we will see in the next section, Lacan's discussions of language throughout the seminars of 1954–55 were thoroughly permeated by his reflections on chance, homeostasis, circuit, games, probability, feedback, and entropy. It was in the course of those discussions that he first introduced Poe's “The Purloined Letter” and began his famous *explication de texte*, “Le Séminaire sur ‘la lettre volee.’”

Lacan Reading Poe: “The Seminar on ‘The Purloined Letter’”

Lacan says that chance put the text of Edgar Allan Poe's “The Purloined Letter” at his disposal. Did chance also cause his famous reading of Poe to **(p.161)** make the hermeneutic moves and detours we subsequently encounter in Poststructuralist literary criticism? Whatever caused it to happen, these moves and detours are still guarding an open secret as to how Lacan discovered Poe's story for psychoanalysis. The secret—hiding in plain sight, as it were—has inadvertently barred us from knowing more; that is to say, something will remain unseen and unheard until we are prepared to reflect on what we know about Lacan through American literary criticism and, more importantly, on what we do not know about American cybernetics in France, or in the U.S. for that matter.

Barring that knowledge, have we been asking the right sort of questions about Lacan's analytical rigor with respect to the symbolic order? For instance, why did his teaching seem so abstruse? Did Lacan get his mathematics right?[24] If questions like these do not seem particularly conducive to a fruitful understanding, is it because the symbolic order that Lacan has tried so hard to elucidate with his diagrams and ideographic signs has been eluding us all this time? A common mistake one can make is to fetishize Lacan's seminar excursion into “The Purloined Letter” as a virtuoso performance in psychoanalytical criticism and turn that criticism into all kinds of navel-gazing exercises. Such exercises have had the unfortunate consequence of thwarting the political decision or intuition that had gone into Lacan's adoption of Poe's text and thereby deflecting his important discoveries concerning the Freudian unconscious.

But which unconscious? Did Lacan not invent the famous formulation that the unconscious is the discourse of the Other (*l'inconscient, c'est le discours de l'Autre*)?[25] True, but what does he mean by “the Other”? In the seminar on “The Purloined Letter,” Lacan makes it clear that the Other is the cybernetic machine rather than what we call language; he further adds that, if the unconscious exists in Freud's sense of the term, “it is not unthinkable that a modern calculating machine, by detecting the sentence that, unbeknown to him and in the long term, modulates a subject's choices, could manage to win beyond any usual proportions in the game of **(p.162)** even and odd” (45). The calculating machine, i.e., the modern computer, is elsewhere called the

adding machine by Lacan. By virtue of its mode of address to the unconscious, Lacan says that the calculating machine can be “far more dangerous for man than the atom bomb.”[26] This enigmatic remark compresses some of his most important insights on the mind and the symbolic order. Lacan's main contribution in this area—which I must spell out for him since he stopped short of doing so himself—lies in what he can tell us about the cybernetic unconscious of the postwar Euro-American world order. The fact that we have not been able to escape this world order after his passing and after the cold war and the fact that theoretical discourses increasingly devolve into loose descriptive pronouncements about global phenomena provide some of the compelling reasons for once again engaging with Lacan's hard-won insights and making them relevant to future thought.

Lacan is by no means the first psychoanalyst to engage Poe. As Derrida has pointed out, Marie Bonaparte published a psychobiography of Poe as early as 1933 under the title *The Life and Works of Edgar Allan Poe*, which carried the imprimatur of Freud's foreword.[27] Lacan makes it clear, however, that it was “chance,” not Bonaparte, that brought the text of “The Purloined Letter” to his attention.[28] That chance, he further reminds us, has something to do with the cyberneticians whom he acknowledges but does not name in several of his seminars.[29] Is he being facetious about his sources? Should we take his word for it? Rather than speculate about the author's intentions one way or the other, it is worthwhile to take his word literally and track down the nameless cyberneticians who may or may not have contributed to his reading of Poe. Pace Derrida, we will see that Poe's **(p.163)** fiction would not have emerged as a privileged site of analysis for Lacan in 1955 had the mathematicians whom he knew or read around that time not already appropriated Poe, Daniel Defoe, Jonathan Swift, Alexander Pushkin, Arthur Conan Doyle, H. G. Wells, Rudyard Kipling, James Joyce, and other writers in their development of Markov series, game theory, information theory, and cybernetics. But we are getting slightly ahead of ourselves.

Poe's “The Purloined Letter” was first brought up by Lacan on March 23, 1955, in conjunction with the figure of the machine; this happened in a session known as “Odd or Even? Beyond Intersubjectivity.” Lacan began his teaching in that session by surveying the latest developments in cybernetics and its implications for reading Freud and he then suggested: “Let us try to consider for a moment what it means for *a machine to play the game of even and odd*. We couldn't work it all out by ourselves, because it would look a bit heavy-handed in the circumstances. *A short text comes to our aid, from Edgar Poe, which the cyberneticians, I noticed, make something of*. This text is in *The Purloined Letter*, an absolutely sensational short story, which could even be considered as essential for a psychoanalyst”[30] (my emphasis). On April 27, 1955, in what would become the “Seminar on ‘The Purloined Letter,'” Lacan once again brought up the game of even and odd. He says: “What is immediately clear is what I have called the inmixing of subjects. I will illustrate it for you, since chance has offered it to us, with the story of *The Purloined Letter*, from which we took the example of the game of even and odd.”[31] The question is, Why does Lacan seem more obsessively concerned with the machine and, in particular, with the game of even and odd than with Poe's story?

The game of even and odd appears in Poe's tale following C. Auguste Dupin's successful retrieval of the letter that was stolen from the Queen and hidden by Minister D. Dupin mentions this game to satisfy the curiosity of his friend the narrator on how he has managed to outsmart such a formidable opponent as Minister D. Dupin says that the game of even and odd is played among children. One player holds in his hand a number of marbles and asks the other to guess if the number is even or odd. If the guess is correct, the guesser wins one and if the guess is wrong, he

loses **(p.164)** one. There is an eight-year-old boy who wins all the marbles of his school simply by observing the astuteness of his opponent and can always predict his next move by identifying with his psyche. Evidently, Lacan became more intrigued by the structure of this game than by Dupin's clever trick of bluff, and he encouraged the members of his seminar to play the game of even and odd in class and report back to him.

In Lacan's reading of Poe, the symbolic structure of the game frames Dupin's ratiocination or reasoning, and this reasoning—which is always associated with Dupin's capacity for dissimulation and mirrors the mentality of his double, Minister D—is inevitably caught up in the symbolic structure that sets the letter in motion. His analysis shows the letter and the subject to be interchangeable in the sense that no subject who comes into contact with the letter (the Queen, the minister, Dupin, or anyone) can escape being caught up in the same game or machine. The repetition automatism in Poe's human drama thus finds its true meaning in the machine of chance and probability, where “the symbol's emergence into the real begins with a wager.”[32] From the viewpoint of game theory, a further distinction is to be made between the game (*l'ensemble-jeu*) and the play (*élément*); I elaborate on this in the next section.[33]

The figure of the machine is what mediates Lacan's initial speculations about the relationship between the symbolic and the real when he argues that “the very notion of probability and chance presupposes the introduction of a symbol into the real” (182). He further suggests that “only in the dimension of truth can something be hidden like all games of chance” (201–2). This is an important point, for Lacan shows that what gets hidden in the game of even and odd is not one or two pieces of marble but numerical symbols; by the same token, that which can be hidden in “The Purloined Letter” is not the physical letter but the truth or any truth claims initiated by the chain of symbols in the structure.[34] Thus he discovers a symbolic order in the game of even and odd that matters more than the innocuous content of Poe's story. In fact, the game of even and odd does not stand alone in his analysis. In the seminars leading up to the discussion of “The Purloined Letter,” Lacan has spoken of those “adding machines” and **(p.165)** “thinking machines” that play similar games “within the limit of a certain strategy,” and his reading of Poe is framed by a series of ongoing discussions about machines and cybernetics.[35]

In due course, these thinking machines will take us to the mysterious “cyberneticians” who had originally brought Poe's story to his attention. Lacan chose to leave us in the dark as to who those cyberneticians were and how they made him aware of such a reading. He was known for making oblique references to his sources and seemed to expect his disciples and students to work things out for themselves; he was known to show off a bit of his own erudition as well. Was it Norbert Wiener, Warren Mc- Culloch, Gregory Bateson, Shannon, or someone else? Before we delve into the critical points of connection Lacan tried to establish between cybernetics and the unconscious via the symbolic order, we should follow the traces of the mathematicians in question and determine the trajectories of Lacan's interest in literature and cybernetics.

A preliminary investigation of the major cyberneticians and mathematicians of the time suggests that a good number of them showed an interest in literature. Wiener wrote fiction and corresponded with T. S. Eliot, and even published his own literary criticism, including a substantial article on Rudyard Kipling. Shannon had written critically about Poe's essay “Maelzel's Chess-Player” but not much else, although he did include *Finnegans Wake* in the work he carried out on Printed English, as discussed in the preceding chapter. Alan Turing enacted a series of botched hide-and-seek games when he tried to imitate Captain Kidd of “The Gold Bug” to bury his silver bars and banknotes in the countryside during World War II.[36] These men may

have all read “The Purloined Letter,” but none of them commented on the story as far as we can tell.

We turn next to cyberneticians such as Lawrence Kubie, John Z. Young, Gregory Bateson, and possibly a few others. Young, as we know, pioneered in the study of the neural bases of complex communication behavior in the octopus and participated in the ninth Macy Conference in March 1952. By Jean-Pierre Dupuy's account, Lacan was familiar with his work.[37] The reference to the octopus does occasionally pop up in Lacan's remarks about cybernetics, but there is no evidence that either Young or Bateson took an interest in “The Purloined Letter.” Lacan's knowledge of Kubie's work has **(p.166)** been documented and discussed by Ronan Le Roux in a recent study, but in a context unrelated to literature.[38] The logical next step is to go back further to von Neumann and Morgenstern, who would have found Poe's game of even and odd relevant to their discussion of similar games such as the game of “matching pennies” in *Theory of Games and Economic Behavior*.[39] Lacan frequently alludes to the play of heads and tails from the game of “matching pennies” in his discussion of probability.

One would imagine that *The Theory of Games and Economic Behavior* could be the natural site for Lacan to encounter his cybernetic Poe, since his interests ranged from matching-penny games to the prisoner's dilemma and other subjects relating to chance and probability.[40] But it turns out that von Neumann and Morgenstern left the American novelist out of their literary repertoire to focus on the rational choices made by Robinson Crusoe and Sherlock Holmes. Nevertheless, the game theorists have left behind some useful clues to guide us to a number of French works that were devoted to introducing and translating game theory. In short, it is in the French translations and explications of game theory that we finally come close to resolving the mysteries surrounding the long-sought cybernetic references made by Lacan in his Poe seminar.

Les Jeux: Game and Play on the Symbolic Chain

One key figure in the translation and explication of game theory and cybernetics in French was the Catholic mathematician Georges Th. Guilbaud, whose name came up a number of times in our discussion of Shannon and Pierce. Guilbaud and Lacan became close friends in 1950, and their friendship lasted until Lacan's death in 1981.[41] Guilbaud is viewed by his American counterparts as an important contributor to game theory and was the first to introduce game theory, information theory, and cybernetics to the French-speaking world. In an interview conducted by Bernard Colasse and Francis Pavé a few years ago, the ninety-year-old Guilbaud recalls how he **(p.167)** and his colleagues at the Henri Poincaré Institute dedicated themselves to reading and mastering the new mathematical work from the Unites States, Germany, and the Soviet Union in the 1940s and’50s.[42]

Recent studies have shed valuable light on how the scientists and academics from the U.S., Europe, Soviet Union, and Latin America interacted with one another during the cold war.[43] In postwar France, the physical sciences were undergoing rapid transformations through the introduction of game theory, cybernetics, and information theory. In the midst of this flurry of activities stood Nicolas Bourbaki, fictitious mathematician fabricated by a group of eminent mathematicians in France. They formed a secret society under this name to subvert the scientific orthodoxy of France and create a modern mathematical discipline based on the rigorous axiomatic methods they promoted. The Bourbaki impact on the social sciences and literature can be seen in Lévi-Strauss's approach to kinship structure as well as in the making of the French literary group Oulipo, which was established in 1960 to emulate the Bourbakis. The meeting between Lévi-Strauss and Jakobson in New York City in 1943 is usually recounted as a significant moment in the history of Structuralism; but, in the same year and in the same city,

Lévi-Strauss also became acquainted with the founder of Bourbaki, André Weil. Weil not only helped Lévi-Strauss conduct the mathematical analysis of his kinship research but also wrote the appendix to the first part of Lévi-Strauss's foundational text *Elementary Structures of Kinship*. These interesting circumstances have led David Aubin to conclude that the crossbreeding of anthropology, linguistics, and mathematics was what gave rise to Structuralism.[44]

The intellectual ties that connected the Bourbaki group to the other groups went deeper, however, than the genealogy of Structuralism and certainly contributed to the development and dissemination of cybernetics itself in the 1950s. The first English edition of Wiener's pathbreaking *Cybernetics* was published simultaneously by Hermann Editions in Paris **(p.168)** and the MIT Press (then the Technology Press) in collaboration with John Wiley & Sons in New York in 1948.[45] Enrique Freymann was the owner of the Hermann Editions. He had convinced Wiener the year before to write a book about his cybernetics theory and offered to publish it. In the spring of 1947, Wiener was passing through Paris on his way to a congress on harmonic analysis organized by the Bourbakist mathematician Szolem Mandelbrojt in Nancy. He agreed to sign a book contract with Hermann when he found out that Freymann was a founding member of Bourbaki.[46]

The spectacular success of Wiener's first book took him and his publishers by surprise; the book sold 21,000 copies and went through three reprints in six months.[47] The French press responded enthusiastically, although the French Communist Party denounced cybernetics as a “bourgeois” science. The Cercle d'Etudes Cybernétiques quickly formed in France with the renowned physicist Louis de Broglie serving as its honorary president. In 1950 and 1951, as David Mindell and his coauthors have noted, two congresses were held on cybernetics in Paris and, by the late 1950s, “a kind of normalization of the field took place, which correlated both with the promotion of cybernetics in popular science articles and books and with the institutionalization of cybernetics research in Western Europe” (74–75).

Two of Lacan's mathematician friends, Guilbaud and Jacques Riguet, the latter attending his seminars regularly, were members of the Cercle d'Etudes Cybernétiques[48] It is not unreasonable to surmise that both men would have been among the “cyberneticians” to whom Lacan alluded in his seminar on Poe. Roudinesco informs us that Emile Benveniste, Guilbaud, Lévi-Strauss, and Lacan met regularly in 1951 to discuss establishing links between the social sciences and mathematics and that Guilbaud was also behind Lacan's use of topological figures, such as the Moebius strip, strings, inflatable buoys, and the torus.[49] But Roudinesco's biography keeps **(p. 169)** silent about the story of game theory and cybernetics and their centrality in Lacan's relationship with Guilbaud. This may have been one of the reasons that most studies have heretofore focused on Lacan's interest in topology.[50]

Guilbaud was largely responsible for the introduction and development of game theory, information theory, and cybernetics in France. He was the author of *La Cybernétique* (What is cybernetics?, 1954) and *Eléments de la théorie mathématique des jeux* (Elements of game theory, 1968). His paper “The Theory of Games: Critical Contributions to the Theory of Value” (1949) was a seminal work in the field.[51] Harold W. Kuhn singled out Guilbaud not only for his forty-five-page review of von Neumann and Morgenstern's *Theory of Games and Economic Behavior*, but also as one of the few French scientists to make a unique contribution to game theory. It is interesting that Kuhn recalls that “Guilbaud's seminar in Paris in 1950–51 was attended by such mathematical economists as Allais, Mailnvaud, Boiteux, and myself.”[52] The date of that seminar was three years before Lacan's. Was Lacan in the audience of Guilbaud's

seminar? We do not know. Even if he did not attend that seminar, evidence suggests that he and Guilbaud were very familiar with each other's work.

In 1954, Guilbaud published *La Cybernétique* a few months before Lacan embarked on his seminar on “The Purloined Letter.” That year also saw the publication of Guilbaud's important article on game theory, “Lectures on the Principal Elements in the Mathematical Theory of Games.” In this work—a long essay in five sections—Guilbaud makes an explicit reference to the game of even and odd from Poe's story. From antiquity, he says, this game has been looked down upon as a children's game, but adults have also played it, especially in gambling situations where they risk losing large amounts of money. He points out that the game of even and odd has been “honored by a famous analysis given by Edgar Poe (The Purloined Letter)” and adds that “an equivalent form is suggested and studied by von **(p.170)** Neumann and Morgenstern under the name of “matching pennies.”[53] This reference pinpoints the meaningful connection Guilbaud was trying to establish between game theory and “The Purloined Letter,” a connection that von Neumann and Morgenstern did not make in their original work. Even so, we will discover that this is not the first time that Poe appears in Guilbaud's discussion of von Neumann and Morgenstern.

Ronan Le Roux has examined an earlier lecture Guilbaud gave at the Sorbonne on March 24,1953. Half of that lecture was devoted to discussing the mathematical theory of games, and portions of it found their way into the third part of *La Cybernétique*. In the original lecture, entitled “Pilots, Planners and Gamblers: Toward a Theory of Human Control,” Guilbaud brought up Poe's story and pointed out that “The Purloined Letter” dealt with one of mathematicians' old controversies in literary register and suggested the possibility of a “pure game” (*jeu pur*).[54] Significantly, Guilbaud's lecture cites an essay by Lacan called “Logical Time and the Assertion of Anticipated Certainty” (1945) to challenge the kinds of psychologism one finds in the work of the Belgian doyen of letters Denis Marion (pseudonym of Marcel Defosse), who had just published *The Intellectual Method of Edgar Poe* (1952). Firmly aligning himself with Lacan to oppose the fallacies of psychologism, Guilbaud argues that Marion “appears to have neglected the fundamental problem which is not just a matter of ‘reading the thought’ of others. What matters is logic, not ‘psychology.’ Dr. J. Lacan has given an in-depth analysis of this problem in ‘Logical Time’” (353). On the evidence presented by “Logical Time and the Assertion of Anticipated Certainty,” it seems that Lacan's engagement with the prisoner's dilemma and game theory predated his acquaintance with Guilbaud, for that essay was published in March 1945, shortly after the appearance of von Neumann and Morgenstern's *Theory of Games and Economic Behavior*.[55] This happened before September 1945, when Lacan made his trip to England, where he **(p.171)** visited the Hartfield rehabilitation center for returned prisoners of war and overseas veterans.

To make sense of the historical connections between Lacan's 1945 paper and the work of von Neumann and Morgenstern, it may be helpful to keep in mind that the latter's modeling of winning strategies under conditions of uncertainty and their discussions of two-person games, three-person games, and n-person games were inspiring very different work elsewhere. Most of that work, the most famous of which was the Flood-Dresher experiment, focused on irrational human behavior. William Poundstone says that “Merrill Flood was one of the first to analyze that irrationality with game theory.”[56] Both the Flood-Dresher experiment at the RAND Corporation and Albert W. Tucker's coinage of the term “prisoner's dilemma” took place in 1950.[57] Contrary to what we believe about game theory, much of this work started out by assuming human beings not to be fully rational animals and that their decisions were subject to chance, time, and

psychic factors. This is how Shannon reacted to the irrational decisions of the human subjects in Bavelas's test, as we have already noted in the preceding chapter.

Lacan's “Logical Time and the Assertion of Anticipated Certainty” anticipated the Flood-Dresher experiment by playing on the same fictional scenario of logical reasoning that was obsessing game theorists at the time. This was soon followed by another piece, “Number Thirteen and the Logical Form of Suspicion,” in which he continues to reflect on the problem of number and chance.[58] Lacan begins “Logical Time and the Assertion of Anticipated Certainty” by hypothesizing a situation where a prison warden summons three prisoners and tells them that their freedom depends on the correct judgment that each of them makes upon examining the color of **(p.172)** the disk the others carry.[59] The prisoners are told that there are three white disks and two black ones but none of them is allowed to see the color of his own disk, which is affixed to his body but lies beyond his own field of vision. The first individual—the time factor being crucial here—who correctly deduces his own color on the basis of what he sees on the others will be discharged.[60] Lacan uses this fiction to investigate the logical form that a “temporalized reference of oneself to another” will take and suggests that “these forms assuredly find easy application in bridge table and diplomatic strategy, not to mention in the handling of the ‘complex’ in psychoanalytic practice” (173). As an early foray into game theory, Lacan's essay greatly impressed Guilbaud. It also indicates that his interest in game theory did not originate with Guilbaud and that his writing about the prisoner's dilemma perhaps predated the experimental work of the mathematicians at RAND Corporation.

There is strong evidence to indicate, however, that Lacan's reading of Poe was inspired and guided by Guilbaud's work on von Neumann and Morgenstern. In 1949, Guilbaud published his long review article on the latter's *Theory of Games and Economic Behavior* in the journal *Economie Appliquée;* this became one of the little-known sources for Lacan's reading of “The Purloined Letter.” This paper's treatment of Poe's story was much more rigorous and critical than his 1953 lecture at the Sorbonne or his 1954 article on game theory. Harold W. Kuhn observes that Guilbaud's review article was not just a review of von Neumann and Morgenstern, and it also made some genuine contributions to the development of game theory.

In this article, Guilbaud performs a close reading of the game of even and odd from “The Purloined Letter” in order to speculate on what he calls “the theory of the ruse.” He suggests that ruse plays a double role: Player 1 tries to guess his opponent's intentions and arranges things so that Player 2 not guess his own intentions. Guilbaud calls this “positive and negative ruse.” It follows that if the strategy employed is rigidly applied, the ruse can be discovered and will become valueless. This, Guilbaud points out, is the origin of bluff, “which is by definition a flexible strategy or, as we shall see, a stochastic choice.”[61] He goes on to consider a two-player scenario in **(p.173)** which the players are limited to two options. Player 1 chooses between *a* and *b* and Player 2 chooses between c and d, so that the following situations will result:

(*ac*)	(*bc*)
(*ad*)	(*bd*)

There are several different ways of ranking these four situations according to each player's system of preference.[62] How does a game of this type work? Guilbaud alludes to two literary works: “there is the game of ‘even or odd’ described by Edgar Allan Poe in ‘The Purloined Letter.’ Morgenstern has used one of Sherlock Holmes' adventures. Holmes wants to get to Dover and thence to the Continent in order to escape from Moriarty. When boarding the train he

sees Moriarty on the platform. Between London and Dover there is only one stop, Canterbury."[63] Holmes is thus faced with some hard decisions. He will be killed if he gets off the train at the same time as Moriarty, so we are presented with these four scenarios:

a = Holmes gets off at Dover

b = Holmes gets off at Canterbury

c = Moriarty gets off at Canterbury

d = Moriarty gets off at Dover

From Holmes's point of view, which is the opposite of Moriarty's, *ac* (success) and *bd* (failure) are preferable to *ad* (death) and *bc* (death). Will each be able to imagine the other's thoughts and decide on a course of action to his own best advantage? Von Neumann and Morgenstern have calculated that Moriarty would go to Dover with a probability of 60% whereas Holmes would stop at the intermediate station also with a probability of 60%. The remaining 40% should account for the other alternatives in each case (178). It is at this point that Guilbaud introduces Dupin's treatment of the game of even and odd in "The Purloined Letter"; he believes that Poe's solution is too facile from the viewpoint of game theory:

> **(p.174)** Poe supposes that one of the two players is much more intelligent than his opponent and the analysis is therefore easy. But if we suppose that the two players have been playing together for rather a long time we may ask what happens when, with experience, they marshal equal powers of reflection. The only solution, obviously, is for each to choose at random, taking care, of course, to profit by his opponent's least error. Random choice thus plays the part of a defensive position, of a base for an attack which will develop when the opponent makes mistakes. Random choice plays the part of a saddle point.[64]

Guilbaud's critique is based on von Neumann's mathematical formalization of random choices between two players of equal intelligence, which proves to be a more satisfying solution than Poe's because it is based on probability and shows that equilibrium can be reached by stochastic choices (which is a very different idea from what is usually understood to be rational choice).

In game theory, mathematicians maintain a rigorous distinction between a *game*, which consists of a set of rules that define it, and a *play*, which is a particular instance in which a game is played from beginning to end. From this distinction follows yet another set of distinctions between a *move* and a *choice*. As Harold W. Kuhn puts it: "A similar distinction is made between the occasion of the selection of one among several alternatives, to be made by one of the players or by some chance device, which is called a *move*, and the actual selection in a particular play, which is called a *choice*. Thus, a game consists of a set of moves in some order (not necessarily linear!), while a play consists of a sequence of choices."[65] It was Guilbaud who translated these subtle distinctions into French, and he was fully aware of the difficulty of negotiating between the two languages. In a later paper, "Lectures on the Principal Elements in the Mathematical Theory of Games" (1954), he spells out the difficulty for his French readers:

> Une premiere distinction est fondamentale: celle du jeu tel qu'il est défini par sa règle—et d'une realization particulière conforme à la règie. Ou encore en termes equivalents: le jeu avant qu'il ne soit joué—et le jeu une fois qu'il a été joué. Dans le Traité de Von Neumann et Morgenstern, ces notions correspondent respectivement aux vocables: *game*, *play*,

> adoptés ensuite par la plupart des théoriciens de langue anglaise (bien que la langue littéraire ne **(p.175)** fasse pas toujours la même distinction). *Game* désigne le Jeu à Joue;r, *Play* un Jeu joué. (italics in the original)[66]
>
> [A first distinction is fundamental: the distinction between the *jeu* as defined by the rules and a particular realization of the *jeu* that follows those rules. In other words, it is between the *jeu* that is yet to be played and the *jeu* once it has been played. In the treatise of von Neumann and Morgenstern, these concepts correspond to the terms “game” and “play” respectively, which have been adopted by the majority of English-language theorists (although literary language does not always make the same distinction). *Game* refers to the *jeu* to be played whereas *play* refers to a *jeu* that has been played.]

Guilbaud knew that the literary language would probably confound the distinction between *game* and *play*. Sure enough, when *le Jeu à Jouer* was translated back into English as a French concept, it became *play*, no longer *game*, in spite of the fact that the distinction between game and play is well established in English, as pointed out at the outset of this chapter. The heterolinguistic supersign “jeu/game” in the French context is made fully commensurate with the supersign “jeu/play” in English.[67] This situation is largely responsible for how the linkages between game theory and Lacan's reading of Poe have heretofore been obscured.

As a linguistic choice, “play” is not a wrong verbal equivalent to “jeu,” but that is exactly where the problem lies. The free play of signifiers becomes a blind play—oblivious to the traces of an earlier heterolinguistic supersign “jeu/game”—and renders the sinister, calculating, and competitive ethos of game theory invisible to the critical eye. So when Derrida is made to say in English that “[c]ontrary to the metaphysical, dialectical, ‘Hegelian’ interpretation of the economic movement of *différance*, we must conceive of a play in which whoever loses wins, and in which one loses and wins on every turn,” the slippage of translation from *game* to *play* produces not only a confused statement about winning and losing but, more importantly, it displaces the intellectual provenance of the Derridian *jeu*.[68] **(p.176)** Thus the harmless supersign “jeu/play” travels back to English in the guise of French theory to authorize something like a free play of signifiers in literary discourse, making us overlook the fact that von Neumann and Morgenstern's games—zero-sum games, strategy, bluffing, etc.—are just as applicable to their view of economics as to nuclear warfare.

One need not work out the full technical details of game theory to understand how Poe's treatment of the game of even and odd in “The Purloined Letter” privileges the “play” and “choices” over the “game” and “moves” when he allows both the clever boy and Dupin to win all the marbles and win the letter contest. The preference for the imaginary order (identifying with your opponent) precludes an engagement with stochastic processes at the level of the symbolic order (weighing the probability of the game). This may well have been the reason that Poe's story was excluded from the literary examples used by von Neumann and Morgenstern to illustrate game theory.

Lacan's critical reading of Poe closely matches that of Guilbaud's insofar as Dupin's ruse is pitted against the game of even or odd. The stochastic processes of the game are superior to the cleverness of Dupin, who thinks he can overcome the law of chance but may end up in the same place as everyone else. In his reading of “The Purloined Letter,” Lacan emphasizes the importance of structure and the compulsion to repeat insofar as these are addressed to the exigencies of chance, randomness, and stochastic processes in general. He states:

> By itself, the play of the symbol represents and organizes, independently of the peculiarities of its human support, this something which is called a subject. The human subject doesn't foment this game, he takes his place in it, and plays the role of the little *pluses* and *minuses* in it. He is himself an element in this chain which, as soon as it is unwound, organizes itself in accordance with laws. Hence the subject is always on several levels, caught up in crisscrossing networks.[69]

The little *pluses* and *minuses* and diagrams that commonly frame Lacan's reading of Poe are not as mystifying they first appear. These correspond **(p.177)** exactly to the kinds of combinatorial possibilities understood by the game theorist as, for example, any one of the twenty-four ways of ranking the four situations *ac*, *bd*, *ad*,and *bc* proposed by Guilbaud.

Moreover, the “crisscrossing networks” allude not so much to linguistic networks as to “communication networks” in the language of information theory. If this is what Lacan is trying to get at with his binary notion of the symbolic chain, it certainly articulates a very different idea of language from that of Saussure and Jakobson, even though Jakonson tried very hard to incorporate probability analysis into linguistic studies.[70] Noam Chomsky was initially involved in Jakobson's project and participated in an important symposium that led to the publication of *Structure of Language and Its Mathematical Aspects*. His work on transformational generative grammar clearly bore the latest imprint of information theory and postwar communication technologies. David Golumbia has argued that Chomsky's computationalism presupposes the human mind to be a finite-state machine that is capable of generating and transforming an infinite number of sentences. “Somewhere inside the human brain there must be a physical or logical engine, call it the language organ, whose job is to produce mathematical infinity.”[71] In the course of developing his transformational generative grammar, however, Chomsky noted that “the notion ‘grammatical English’ cannot be identified in any way with the notion ‘high order of statistical approximation to English.’”[72] His objection to the application of Markov chains to English grammar follows a logic that escaped Jakobson. Chomsky writes: “If a grammar of this type produces English sentences, it will produce many non-sentences as well. If it produces only English sentences, we can be sure that there will be an infinite number of true sentences, false sentences, reasonable questions, etc. which it simply will not produce” (24). In short, the symbolic order is not reducible to a linguistic understanding of language, nor can the converse be true.[73] For Lacan, though, “the primordial couple of *plus* or *minus*” or the game of even and odd should precede linguistic considerations and is what enables the symbolic order.[74] **(p.178)**

Table 4. Jacques Lacan's symbolic chain of pluses and minuses. From “The Purloined Letter,” *The Seminar of Jacques Lacan. Book 2, the Ego in Freud's Theory and in the Technique of Psychoanalysis, 1954-1955*, translated by Sylvana Tomaselli (New York: W. W. Norton, 1988), 191–205.

(1)	(2)	(3)
———	———	———
+++	++−	+−+
−−−	−−+	−+−
	−++	
	+−−	

In his reading of “The Purloined Letter,” Lacan demonstrates how the symbolic chain emerges from the real by arranging the eight numerical trigrams in three sets (193). The trigrams in each set combine the binary symbols of *pluses* and *minuses* according to given rules of arranging the

even/odd sequences (Table 4). Each trigram constitutes a symbolic unity that articulates to the total structure of the series. Compare how Guilbaud illustrated the stochastic possibilities with the eight numerical trigrams in binary code; and the parallel between the two diagrams cannot escape anyone's notice[75] (Table 5). It is true that Jakobson's earlier collaboration with Nikolai Trubetzkoy had already brought the principle of binary opposition into phonology and phonemic analysis.[76] These linguists employed plus and minus signs to mark the presence or absence of distinctive phonemic traits. But their use of pluses and minuses should not be confused with what Lacan or Guilbaud was trying to do with the stochastic groupings of symbols, because the game of chance is not just about the marking or unmarking of distinctive features or the number of bits per phoneme.[77] Rather, it is about how a sequence of random series such as trigrams in binary code can be formalized through probability analysis to reveal its structure. Following the symbolic logic of the game of even and odd and the game of matching pennies, Lacan's chain of pluses and minuses **(p.179)**

Table 5. G. Th. Guilbaud's illustration of the eight trigrams. From *What Is Cybernetics*? (New York: Grove Press, 1959), 48.

Il y a huit messages de trois signes
0 0 0
0 0 +
0 + 0
0 + +
+ 0 0
+ 0 +
+ + 0
+ + +

suggests that no pure game of chance exists from the viewpoint of probability.[78]
This logic is extended to the realm of ordinary speech situations where one finds what he calls the articulation of one word with another. “You can play heads or tails by yourself,” says Lacan, “but from the point of view of speech, you aren't playing by yourself—there is already the articulation of three signs, comprising a win or a loss, and this articulation prefigures the very meaning of the result. In other words, if there is no question, there is no game, if there is no structure there is no question. The question is constituted, organized, by the structure” (192). This notion of symbolic structure, consistent with game theory, would have important bearings on the development of Lacan's paradoxically *nonlinguistic* view of language and of the symbolic order.[79] **(p.180)**

Table 6. The eight trigrams of the yin and yang symbols arranged in a Lacanian symbolic chain.

(1)	(2)	(3)
☰	☱	☲
☷	☳	☴
	☶	

In fact, Lacan's novel view of language began to assert itself as early as his critique of Masserman's discourses on language and speech. In 1953, he delivered his famous manifesto (commonly known as the Rome Discourse) of the new Société Française de Psychanalyse at the Rome Congress.[80] In that speech, he argued that for Freud “a symptom is itself structured like a language” and that “a symptom is language from which speech must be delivered.”[81] Out of a justified concern that “those who had not studied language in any depth” might misunderstand what he meant by “language,” Lacan suggested that numerical associations would help make things a little easier to grasp as his audience could then recognize in the combinatory power of numbers the “very mainspring of the unconscious” (233). The combinatory power was not reducible to what some would take as grammatical order. It was something else. Lacan explained:

> Indeed, if—from the numbers obtained by breaking up the series of digits [chiffres] in the chosen number, from their combination by all the operations of the arithmetic, and even from the repeated division of the original number by one of the numbers split off from it—the resulting numbers prove symbolic among all the numbers in the subject's own history, it is because they were already latent in the initial choice. And thus if the idea that these very **(p.181)**

Table 7. The eight trigrams written in Hindu-Arabic binary code.

(1)	(2)	(3)
——	——	——
1 1 1	1 1 0	1 0 1
0 0 0	0 0 1	0 1 0
	0 1 1	
	1 0 0	

> numbers [*chiffres*] determined the subject's fate is refuted as superstitious, we must nevertheless admit that everything analysis reveals to the subject as his unconscious lies in the existing order of their combinations—that is, in the concrete language they represent. (233)

Let us recall that the symbolic chain Lacan analyzes in his 1955 seminar on “The Purloined Letter” is represented by three sets of trigrams, or what he terms the *chiffre*, which, in the French text, is associated with both “cipher” and “numerical digit.” It is worth speculating why Lacan chooses to dwell on the series of eight trigrams (and divination technology) in his seminar. Do the numerical digits allude to yet another set of hidden ciphers?

In my interpretation, Lacan's eight trigrams contain a coded mathematical reference to an archaic cipher called the *koua* (or *gua* in the pinyin romanization). This cipher is obliquely mentioned by him, not in the seminar on “The Purloined Letter” but in the Rome Discourse two years before. Evidently, Lacan's play with the game of even and odd is not the only mystery that has escaped people's attention. In the Rome Discourse, Lacan makes one curious reference to the *koua* in a discussion of binary digits. He says: “[FJrom this articulated couple of presence and absence—also sufficiently constituted by the drawing in the sand of a simple line and a broken line of the *koua* mantics of China—a language's [*langue*] world of meaning is born, in

which the world of things will situate itself” (228). Unfortunately, Lacan does not spell out for his audience how a simple line and a broken line of the *koua* could generate a language's world of meaning. And what is a *koua?*

The *koua* 卦 is usually called *bagua* 八卦 in Chinese. The concept refers to the eight trigrams from the *Book of Changes*, which dates back at least three thousand years.[82] The *koua* expresses the binary code in the same **(p.182)** logical order as when the yin (– –) and the yang (—) symbols are substituted for the minuses and pluses in Lacan's symbolic chain. Tables 6 and 7 allow us to compare the yin and the yang expressions with their Hindu-Arabic equivalent, that is to say, when we let number 1 stand for the plus or yang symbol and number 0 for the minus or yin symbol. Lacan thus understands the yin and yang symbols as mathematical ideographs.

Lacan studied Chinese during World War II and obtained a degree at École des Langues Orientales. He renewed the study of Chinese classics with François Cheng in 1971.[83] This knowledge may have helped him overcome the conceptual obstacle that we encounter among nonmathematicians in Western academia concerning the nature of nonalphabetical writing systems.[84] Most people who know only alphabetical writing will have difficulty grasping the concept of ideograph and tend to confuse it with pictographs. As argued in my discussion of Printed English, ideographs (conceptual, spatial, modular, etc.) embody a different mode of abstraction from that of pictograph (visual, iconic, mimetic, etc.) and are just as applicable to numerical digits as they are to written symbols, traffic signs, hand gestures, and so on. On the sources of iconography, we have long been misled by late nineteenth-century interpretations of the Magdalenian records on which the idea of Paleolithic realism was based, but twentieth-century archaeological discoveries have shown that Magdalenian records represent a very late stage of development in figurative art, as they date between 11,000 and 8000 BCE, whereas the earliest beginnings happened before 30,000 BCE. In the words of paleoanthropologist Leroi-Gourhan, “graphism did not begin with naïve representations of reality but with abstraction.”[85] In other words, the earliest moments of graphism in the technological development of the Homo Sapiens were characterized by ideographic abstraction, not realistic representation. The *bagua* numerical system has been used together with writing for divination since Chinese antiquity. The use of mathematical symbols for divination purposes is not unique to China; it is, in fact, rather common among world civilizations. Lacan does not dismiss the belief in chance, number, and randomness as superstition but sees it as the path toward the unconscious. Following this insight, we might draw some conclusions about the political unconscious **(p.183)** of an electoral democracy based on number games and see it as the latest divinational technology of the ruling class in a modern guise.

Nevertheless, an extensive knowledge of paleoanthropology and ancient Chinese writing is not a precondition for grasping the mathematics underlying the *koua* or any binary code. Gottfried Wilhelm Leibniz understood this when he became aware of the eight trigrams and their combinatorial principles through the mediation of a Jesuit missionary named Father Bouvet, who traveled to China in the seventeenth century. Leibniz thought that he had invented the binary code until he was confronted with the evidence of the eight trigrams brought to Europe by Father Bouvet in November 1700. He then adopted the position that the binary arithmetic was not his own invention, but a “rediscovery” of the Fu Xi principles.[86]

We will not revive the old dispute over the ancient origins of binary code. The search by Leibniz and Jesuit missionaries for the universal language is pertinent to our discussion insofar as it suggests the ways in which mathematical reasoning and symbolism may shed important light on

the study of language and writing. When Father Bouvet referred to the trigrams in yin/yang binary code “as universal symbols invented by some extraordinary genius of antiquity … in order to present the most abstract principles in all the sciences,” he was anticipating the universal discrete machine of Turing, Shannon, and Wiener, to whom Leibniz already represented the beginning of modern science. Wiener called Leibniz the patron saint of cybernetics.[87] Guilbaud canonized Pascal, probably because the latter was French and made important contributions to the study of probability. In any case, this allegiance did not prevent him from acknowledging Leibniz's important role as a precursor to modern mathematics.[88] Lacan does not have a patron saint of his own—unless Freud counts as one—but as demonstrated below, his universal language—the symbolic order—would be unthinkable without the mediation of information theory and cybernetics.[89]

There is no doubt that Lacan's notion of language changed over his lifetime and should be allowed its full scope of fluctuation and metamorphosis **(p.184)** in historical time. This chapter focuses on one slice of that time: his yearlong seminar series in 1954–55. This seminar not only frames his famous reading of “The Purloined Letter” but signals an important turning point in his life's work, which has been misinterpreted as a movement toward structural linguistics. My research indicates that Lacan was actually developing a cybernetic notion of language which brought him closer to the mathematician's symbolic logic than suggest any substantial affinity with Saussure or modern linguistics. It should not surprise anyone, therefore, that he would privilege letters, numbers, pluses, minuses, and ideographic symbols in general and that in due time he would acquire the reputation of being obscure and difficult. But we must question further: Why should these symbols matter to psychoanalysis? In what ways do they significantly impact his understanding of the Freudian unconscious?

We have seen that the stochastic processes of the written letter presuppose a set of combinatorial rules in the communication machine or the psychic machine. The machine is just as likely to produce gibberish as it is to make sense. In *La Cybernétique*, Guilbaud devotes some chapters to the relationship between language and machine and focus, predictably, on circuits and networks, feedback and purposive activity, signals and messages, information and probability, communication, etc. Like Shannon, he takes a strong (statistical) interest in ordinary language and symbolic systems in general. In his view, the task of the cybernetician is to apply a rigorous mathematical method to the analysis of stochastic processes of language while acknowledging that language in the ordinary sense of the word “makes use of only a small fraction of the combinatorial fabric which serves as its support” amongst the other symbolic systems such as numerals and binary code.[90] Guilbaud is not modest about the revolutionary potential of cybernetics or information theory in their power to unlock the structure of the mind. Cybernetics, he argues, will enable the scientist to study the “actual linguistic process and reveal the structures implicit in the apparatus which produces it, *whether this is a machine in the usual sense, or a subconscious* **(p.185)** *human mechanism [un subconcient humain]*”[91] (my emphasis). The symbiosis of the computing machine and the human subconscious has been a commonplace among the cyberneticians, and this would translate into the cybernetic unconscious that we will find in Lacan's rereading of Freud.

The driving hypothesis of cybernetic studies has been that the human brain is a cybernetic machine. It has already been mentioned how Warren McCulloch and Walter Pitts's pioneering paper “A Logical Calculus of the Ideas Immanent in Nervous Activity” (1943) presented a most rigorous treatment of this hypothesis amongst the first generation of American cyberneticians. The paper demonstrates the activity of neurons as inherently prepositional and applies the

mathematical calculus to the construction of formal neural nets isomorphic to the relations of prepositional logic. McCulloch and Pitts believe that all psychic events have a semiotic character and that "the 'all-or-none' law of these activities, and the conformity of their relations to those of the logic of propositions, insure that the relations of psychons are those of the two valued logic of propositions. Thus in psychology, introspective, behavioristic or physiological, the fundamental relations are those of two-valued logic."[92] In a recent study, Joseph Dumit suggests that the kinds of questions that interest McCulloch are, for example, "Which machines are neurotic in ways that some people are neurotic? Which people get sick the way that some machines get sick? Which machines remember the ways that some people remember?"[93] As is discussed in chapters 5 and 6, AI scientists such as Kenneth Mark Colby and Robert P. Abelson began to simulate the neurotic machine using computer programs as early as the 1960s. But Lacan was already fascinated in the 1950s by the temporal breaks or faulty moments of the communication circuit in the human psyche and would occasionally use the American term "jam" to describe these moments.

There is overwhelming evidence to suggest that, beyond the seminar on "The Purloined Letter," the Freudian subjects that Lacan treated from late 1954 through the first six months of 1955 were all closely linked in one way or the other to the issues brought to bear by Guilbaud's readings of cybernetics, game theory, and information theory in *La Cybernétique* and in his articles already discussed. A systematic comparison of the many parallels and shared technical idioms is impossible in the limited scope of this **(p.186)** chapter. A more fruitful approach lies in identifying those strands of thought that have been central to Lacan's elaboration of the concept of language and speech from a cybernetic viewpoint. Chiefly, these are related to the questions of the communication circuit, message, entropy, nonmeaning, and time that Lacan examined systematically in that period; the inquiry culminated in a lecture delivered on June 22, 1955, titled "Psychoanalysis and Cybernetics, or on the Nature of Language."

Let us recall that in his reading of Poe, Lacan warned us against taking the stolen letter in Poe's story literally or mistaking the actual marbles for the game of even and odd. He further notes: "The letter itself, this phrase written on a piece of paper, in so far as it wanders about, is the unconscious."[94] The letter or the symbol figures the unconscious insofar as it moves from person to person in the game of chance, but it always moves in a structure. He adopts the figure of the telegraph in a similar vein to illustrate this process:

> Suppose that I send a telegram from here to Le Mans, with the request that Le Mans send it back to Tours, from there to Sens, from there to Fontainebleau, and from there to Paris, and so on indefinitely. What's needed is that when I reach the tail of my message, the head should not yet have arrived back. The message must have time to turn around. It turns quickly. It doesn't stop turning, it turns around in circles. It's funny, this thing turning back on itself. It's called *feedback* [original in English], and it's related to the homeostat. You know that that is how the admission of steam into a steam-engine is controlled. If it heats up too quickly, a governor registers it, two things are forced apart by the centrifugal force, and the admission of steam is regulated. We have oscillation about a point of equilibrium.[95]

The punning on the tail and head of the message turns on the figure of coin flipping in the game of chances as popularized by game theory. This is the familiar game of hunt-the-slipper, in which the slipper or the message moves but, like Poe's letter, the message bears no linguistic meanings as it moves through the cybernetic circuits.

Negative feedback and homeostat are Wieners central concepts in cybernetics and also informed McCulloch and Pitt's study of neural networks in the human brain. When coining the term “cybernetics,” Wiener pointed out that “the first significant paper on feed-back mechanisms is **(p.187)** an article on governors, which was published by Clerk Maxwell in 1868, and that *governor* is derived from a Latin corruption of *Κυβερνήτης!”*[96] The steam engine is repeatedly noted by Wiener as a device controlled by one of the older and already better-developed forms of feedback mechanisms. “The machines of which we are now speaking are not the dream of the sensationalist, nor the hope of some future time,” Wiener writes: “They already exist as thermostats, automatic gyro-compass ship-steering systems, self-propelled missiles—especially such as seek their target—antiaircraft fire-control systems, automatically controlled oil-cracking stills, ultra-rapid computing machines, and the like. They had begun to be used long before the war—indeed, the very old steam-engine governor belongs among them” (55). For cyberneticians, that which binds the steam engine to the telegraph is the idea of the message in feedback systems, although the message has nothing to do with content or meaning. Information theory states that “the message is a discrete or continuous sequences of measurable events distributed in time” (16). The movement of the message is determined by the feedback and the homeostatic mechanisms of the cybernetic machine.

Lacan's allusion to the telegraph in the quoted passage may be playful, but it is not arbitrary, and it casts a different light on Kittler's association of the symbolic order with the typewriter.[97] As we saw in chapter 2, Morse's telegraphy had been the starting point of Shannon's mathematical analysis when he introduced information theory.[98] Conceptually, the technologies of telegraph, typewriter, and telephone can all be related, especially in regard to the requirement for discrete units, but Shannon's work necessarily privileges Morse code. Through telegraph code, he discovered that a message was related to uncertainty and probability (i.e., which message to choose out of x number of messages) and to the ways in which communication systems could be designed to work with the statistical pattern (which he calls “redundancy”) and randomness of information (which he calls “entropy”).[99] Lacan grasped this novel conceptualization of telegraphic message and saw its relevance to his own work. From this **(p. 188)** understanding emerged a notion of language that would give absolute priority to the signifier (or the letter) and banish “linguistic meaning” and “semantics” from the consideration of the sign. For instance, Lacan adopted a 1–3 combinatorial diagram to demonstrate the stochastic processes of groups of three discrete symbols in his seminar on “The Purloined Letter” (Fig. 20).[100] Compare his diagram with Shannon's illustration of the stochastic process of (finite-state) Morse code in *The Mathematical Theory of Communication* (Fig. 21), and one could hardly miss the mathematical principle underlying them both. Shannon's diagram is based on his earlier analysis of the dot-dash-space principle in Morse code and, as discussed in chapter 2, his conceptualization of the twenty-seventh letter in Printed English originated from that work.[101]

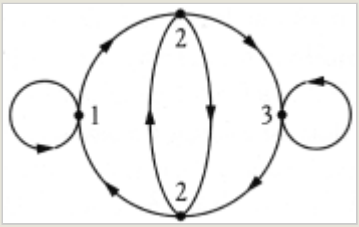

Figure 20. Jacques Lacan's demonstration of the 1–3 Network in “The Seminar on ‘The Purloined Letter,’” 35. From *Écrits: The Complete Edition* by Jacques Lacan, translated by Bruce Fink. Copyright © 1970, 1971, 1996, 1999 by Editions du Seuil. English translation copyright © 2002, 2006 by W. W. Norton & Company, Inc. Used by permission of W. W. Norton & Company, Inc.

On at least one occasion, with Hyppolite in attendance at the seminar, Lacan referred directly to the work of Shannon and Bell Labs and discoursed on the American research on communication engineering, although he omitted Shannon's name:

> The Bell Telephone Company needed to economise, that is to say, to pass the greatest possible number of communications down one single wire. In a country as vast as the United States, it is very important to save on a few wires, and to get the inanities which generally travel by this kind of transmission apparatus to pass down the smallest possible number of wires. That is where the quantification of communication started. So a start was made, as you can see, by dealing with *something very far removed from what we here call* **(p.189)**
>
> *speech. It had nothing to do with knowing whether what people tell each other makes any sense*. Besides, what is said on the telephone, you must know from experience, never does. But one communicates, one recognises the modulation of a human voice, and as a result one has that appearance of understanding which comes with the fact that one recognizes words one already knows. It is a matter of knowing what are the most economical conditions which enable one to transmit the words people recognize. No one cares about the meaning. Doesn't this underline rather well the point which I am emphasizing, which one always forgets, namely that language, this language which is the instrument of speech, is something material?[102] (my emphasis)

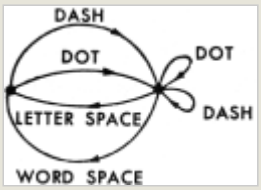

Figure 21. Claude Shannon's demonstration of the stochastic processes involving telegraphic symbols. From Claude E. Shannon and Warren Weaver, *The Mathematical Theory of Communication*. Copyright 1949, 1998 by the Board of Trustees of the University of Illinois. Used with permission of the University of Illinois Press.

Notice how the Saussurian notion of *parole* passes down the wire of Shannon's information theory and reemerges at the other end of the wire as something radically transformed. With the sole difference of preferring “channel” to “wire,” Shannon would have been in complete agreement with Lacan about the quantification of communication, the need to economize, the irrelevance of sense to a message, the instrument of speech being material, and so on. Shannon would have concurred that the idea of communication deals with “something very far removed from what we here call speech.”

This provides a clear explanation as to why Lacan decided to reverse the position of signifier and signified in Saussure's diagram (Figs. 18 and 19), and it also outlines the general direction in which Lacan conceptualizes the unconscious in relation to the symbolic order. The material language, which is the instrument of speech, is no longer the same as the Saussurian language. Rather, it operates in the manner of a telephone exchange system **(p.190)** or a cybernetic machine that runs automatically regardless of what happens to pass down its wires. The transcripts of the first few months of 1955 indicate that the members of Lacan's seminar were thrown into confusion by his cybernetic challenge to their understanding of language. Did he really mean language? They seemed hesitant and were rather slow in catching his train of thought, especially when he made them work on numbers and diagrams to think about language.

At one point, Lacan lost patience and complained: “[W]e won't go into these arcana. You can bring a horse to water, but you can't make him drink, and so as not to install too great an aversion in you to this exercise.”[103]

This apparent lack of understanding led Lacan to devote one of the last sessions of the seminar to the following topic: “Where is speech? Where is language?” dated June 15, 1955, according to the transcript prepared by Jacques-Alain Miller. After a heated exchange with some members of his seminar who seemed hopelessly confused about what he was trying to do with the idea of speech and language, Lacan said:

> [W]hen one illustrates the phenomenon of language with something as formally purified as mathematical symbols—and that is one of the reasons for putting cybernetics on the agenda—when one gives a mathematical notation of the *verbum*, one demonstrates in the simplest possible way that language exists completely independently of us. Numbers have properties which are absolute.... *All this can circulate in all manner of ways in the universal machine, which is more universal than anything you could imagine*. One can imagine an indefinite number of levels, where all this turns around and circulates. The world of signs functions, and it has no signification whatsoever. What gives it its signification is the moment when we stop the machine. These are the temporal breaks which we make in it. If they are faulty, we will see ambiguities emerge, which are sometimes difficult to resolve, but which one will always end up giving a signification to.[104]

This interesting discussion of the psychic machine is followed by some fascinating exchanges with Jacques Riguet, the mathematician in the seminar room, about what machines can or cannot do and whether machines can share universal symbols, etc. In response, Lacan points to the binary code of 1 and 0 as a universal system of signs and opposes this system to historically embodied individual languages such as the French language, **(p.191)** which some members of the seminar insisted on using as their frame of reference. He argues that “the circulation of binary signs in a machine enables us, if we give it the right programme, to discover a previously unpublished prime number. The prime number circulating in the machine has got nothing to do with thought.”[105]

This is taken to mean that the unconscious, rather than the speaking subject, does the thinking and plays the game of chances according to given combinatory rules. Like the prime number, whatever comes out of the thinking machine merely reflects on how the game is played. Lacan's psychic machine, therefore, closely replicates the cyberneticians' neural nets. The connection of eruption of signification or “ambiguities” to the temporal breaks and faulty moments of the circuit suggests Lacan is familiar with neurological studies in cybernetics. For example, when he refers to memory as a message that circulates “on the tiny points of the nervous system,” he is actually citing the work of John Z. Young—again, without mentioning him by name—who conducted experiments on the nervous system of octopuses.[106] Of course, the electronic and biological systems can be jammed and the circuit will break down. Lacan is careful to point out that the circulation of information does not mean “that fundamental things happen between human beings. It concerns what goes down the wires, and what can be measured. Except, one then begins to wonder where it does go, or whether it doesn't, when it deteriorates, when it is no longer communication” (83).

This is where Freud's idea of repetition automatism begins to make cybernetic sense. The following passage is especially illuminating in regard to how the symbolic order operates for Lacan and where psychoanalysis and cybernetics could possibly meet on the exploratory journey toward the unconscious:

> What is a message inside a machine? Something which proceeds by opening and not opening, the way an electronic lamp does, by yes or no. It's something articulated, of the same order as the fundamental oppositions of the symbolic register. At any given moment, this something which turns has to, or doesn't, come back into play. It is always ready to give a reply, and be completed by this **(p.192)** selfsame act of replying, that is to say by ceasing to function as an isolated and closed circuit, by entering into the general run of things. Now this comes very close to what we can conceive of as *Zwang*, the compulsion to repeat. (89)

The German term *Zwang*, which is glossed as “compulsion” here, refers specifically to Freud's notion *Wiederholungszwang*, dubbed *compulsion de répétition* by Lacan who sometimes prefers this term to the usual French translation *automatisme de répétition*.[107] Significantly, Lacan would begin his 1966 published version of the “Seminar on ‘The Purloined Letter’” with this very concept. But the Freudian concept is reworked here to accommodate the stochastic processes of neural net communication through the cybernetic machine, a machine that runs automatically by opening or not opening, in binary code. Does this tell us something about the unconscious and how it works? “When does the individual in his subjective function take himself into account —if not in the unconscious?” asked Lacan at one point, and he added: “One of the most obvious phenomena discovered by the Freudian experience is exactly that.”[108] And what was the Freudian experience he is referring to here?

That experience—which includes Freud's own self-probing—turns out to be nothing less than how to say numbers at random and what this would tell him about the function of the unconscious. We have discussed a related subject in connection with Freud's work *The Psychopathology of Everyday Life* and with Jung's and Bleuler's word-association games. In rethinking Freud, Lacan asks us to reconsider “that very strange game Freud mentions at the end of *The Psychopathology of Everyday Life*, which consists in inviting the subject to say numbers at random.” Is it truly possible for anyone to say numbers at random? Freud's answer is no, because one may say or think of any number at random but whatever comes to the mind cannot be purely random and this is due to the workings of the unconscious. Lacan comes up with a stochastic explanation for the Freudian experience, stating that “the associations which then come to him bring to light significations which reverberate so neatly with his remembrance, his destiny, that, from the point of view of probabilities, what he chose goes well beyond anything we might expect from pure chance” (56). This cybernetic view of the unconscious prepared Lacan for his critique of Hegel, Maurice Merleau-Ponty, **(p.193)** and phenomenology in their reluctance to let go of the central function of consciousness. It also marked Lacan's transition from Hegelianism to cybernetics, not linguistics, and it is a mistake to force a connection between his concept of the symbolic order and the Saussurian notion of language.

Lacan subscribed to what one might call a materialist view of language that was rooted in the technology of his era. Kittler says no less of Freud, suggesting that the latter's materialism went as far as did the information machines of his time. For instance, Freud conceived of psychoanalytic data storage in terms of the grooves that phonographs etch onto wax or tinfoil

rolls.[109] For Lacan, the communication machine offered other and more interesting possibilities. The circulation of information does not mean that communication takes place between human beings. What it does is simulate the stochastic processes of neural net communication in the brain. The law of entropy stipulates that all machines have a tendency to run down. Lacan says that there is a name for this breakdown, called “in psychology, *the jam*, an American word. It is the first time that confusion as such—this tendency there is in communication to cease being a communication, that is to say, of no longer communicating anything at all—appears as a fundamental concept. That makes for one more symbol.”[110] Shannon would have termed this tendency “entropy,” of which Lacan is fully aware, but the latter is also developing a notion of the symbolic order that strives to reframe the meaning of communication and noncommunication with respect to what he would call “man's waiting” in the temporal movement of human civilization.

On June 22, 1955, Lacan delivered his public lecture called “Psychoanalysis and Cybernetics, or on the Nature of Language” to summarize the work of his year-long seminar. This special lecture was arranged by the Société Françiaise de Psychanalyse under the general theme of “Psychoanalysis and the Human Sciences.” Lévi-Strauss, Hyppolite, Merleau-Ponty, and Benveniste had previously been invited speakers in the series. Lacan's lecture focused on how the symbolic order of binary signs might be elaborated as the universal system of language and be distinguished from thought, signification, speech, and meaning. He begins by reflecting on the game of chance, determinism, and cybernetics. Rejecting the idea that the exact sciences are concerned with the real, he argues: “The little symbolic game in which Newton's system and that of Einstein is summed up has in the end very little to do with the real. The science which reduces the real **(p.194)** to several little letters, to a little bundle of formulae, will probably seem, with the hindsight of later epochs, like an amazing epic, and will also dwindle down, like an epic, to a rather short circuit.”[111] This critique originates with a question he raises about the measurement of time from the inauguration of the “universe of precision” with the first perfectly isochronic clock in 1695. In a Heideggerian vein, Lacan sees the universe of precision as a hypothesis embodied in an instrument. If the instrument is constructed that confirms the hypothesis, then there is no need to do the experiment because the fact that it works already confirms the hypothesis. But what is the real against which the exact sciences borrow their unit of time? Lacan says that “the real is what keeps turning up where one expected it” or something that “always turns up again in the same place” (297, 298–99). In other words, the scientist will find what his instrument permits him or her to find, thus enabling a kind of ritualized encounter or rendezvous with nature, although their idea of the natural is likewise defined in terms of “what shows up on time for the rendezvous” (298). With the invention of the probability calculus, the idea of encounter is now referred to the game of chance, whereby “the science of what is found at the same place is substituted for by the science of the combination of places as such” (299). This is an important observation. What Lacan calls the rendezvous with the real is first and foremost a comment on the game of chance that the scientists play with their symbols. In a discussion of Lacan's reiteration of “non-sense” or “non-meaning,” Mark Taylor suggests that the real for Lacan recognizes radical heterogeneity and is fundamentally theological.[112]

The revolutionary character of cybernetics lies in the fact that “everything which up until then had been the science of numbers becomes a combinatory science,” and this allows the accidental and confused traversal of the world of symbols to be organized around the correlation of absence and presence (300). With cybernetics, Lacan suggests, the symbol is embodied in an apparatus that ties the real to a syntax, but this syntax, having nothing to do with ordinary grammar, is the combinatory logic of 0 and 1. Speaking almost in parody of Heidegger, Lacan

points out that “[t]he human being isn't master of this primordial, primitive language,” but “he has been thrown into it, committed, caught up in its gears” (307).

In that spirit, Lacan assigns both phenomenology and Gestalt studies to the inferior imaginary order because they insist on “good form” and ignore the cybernetic truth that “man isn't the master in his own house”(307). **(p.195)** He openly challenges Maurice Merleau-Ponty, as he did in the January 19, 1955 seminar, and he is not alone. Steve Heims has documented some fascinating exchanges between the Gestaltists and cyberneticians at the Macy Conferences when Wolfgang Köhler, one of the founders of Gestalt psychology, was invited to attend the meeting. At one point, a cybernetician commented to him: “Excellent work—but don't you have religion up your sleeve?”[113] Wiener is not known for attacking Gestalt theory the way Lacan does, but he clearly distances himself from the whole thing.[114]

Was Lacan unaware of the sinister side of cybernetics and game theory and their collusion with the American domination of the world during the cold war? The answer is no. In his public lecture, Lacan tries to come to grips with such dangers by suggesting a proper intellectual assessment of the situation. He states:

> In keeping on this frontier the originality of what appears in our world in the form of cybernetics, I am tying it to man's waiting. If the science of the combinations of scanned encounter has come to the attention of man, it is because it deeply concerns him. And it is not for nothing that it comes out of games of chance. And it is not for nothing that game theory is concerned with all the functions of our economic life, the theory of coalitions, of monopolies, the theory of war. Yes, war itself, considered in its aspect as game, detached from anything which might be real. It is not for nothing that the same word designates such diverse fields as well as the game of chance … Here we come very close to the central question with which I began, namely—what is the chance of the unconscious, which in some way lies behind man. (Lacan, “Psychoanalysis and Cybernetics, 300)

Indeed, what is the future of the unconscious with the arrival of cybernetics? Lacan deems the question a central issue, one that is tied to our future, and to the chance of the unconscious. It is not as if monopoly and war were unimportant; they are absolutely important, but we must confront them as “games” to the extent these games are detached from the real and played with the machine and in the machine. This seems to be Lacan's fundamental insight about the cybernetic unconscious. If the element of time, or what Lacan calls “man's waiting,” also bears upon how we reflect on the questions of language, the mind, and the machine before and **(p. 196)** after cybernetics, can the theory of language or the unconscious remain the same after the coming of cybernetics? The answer is no. The originality of Lacan's symbolic order resides precisely in the temporality of “what appears in our world.”

Return to Sender

To recapitulate, Lacan's encounter with American game theory, cybernetics, and information theory was a central event in his rethinking of Freud in the seminar series of 1954–55. Indeed, what he had to say about the symbolic chain is very different from how Jakobson approached linguistic structure, even though the latter also attempted to incorporate information theory into linguistic studies in the 1950s. Lacan's work on the symbolic order led to a nonlinguistic view of language. By reworking the Freudian unconscious this way, he directs our attention to the emergence of the cybernetic unconscious in digital media. For better or for worse, Lacan has accomplished for psychoanalysis what the mathematicians did for economics in game theory. This work has been misunderstood by many, and Lacan himself was acutely aware of the

widespread misconstruing of his concepts. In his 1971 seminar, he tried to rectify that misunderstanding by claiming that “it is not for nothing that I have written *the instance of the letter in the unconscious*. I have never said *the instance of the signified*.”[115]

For several decades, this important work on the cybernetic unconscious has been hiding in plain sight from literary critics on both sides of the Atlantic. The authorized 1966 version of Lacan's *explication de texte* has tended to mask the fact that there are always more than one text and always more than one seminar. This is clearly the case when we examine how the texts of the seminar have evolved over the years. When rewriting his essay for publication in *Écrits*, Lacan edited out and changed a large amount of transcribed discussion from the 1954–55 seminar. Although this was eventually published in 1978, it failed to engage the attention of many scholars who might have found his repeated references to entropy, feedback, telepathy, war, and cybernetic machines illuminating. Lacan's seminar has shuttled back and forth between America and France like an unopened letter—not unlike Edgar Allan Poe's own “Purloined Letter” (through Baudelaire's translation)—one that bears a stamp from the print era: “return to sender.” The transatlantic itinerancy of this unopened letter appears to confirm **(p.197)** Lacan's elaboration of the game of signifiers and their impossible semantic closure. What do we make of the itinerancy of the letter and the game in their dialectic movement? To grasp the situation in its proper dimensions, we need to put the transatlantic and translingual fashioning of French Structuralism and Poststructuralism in historical perspective.

Poe's original story went on a transatlantic journey and met with warm reception amongst the French modernists. But for more than a hundred years, ever since Baudelaire took it on himself to translate and write about Poe in the mid-nineteenth century, the canonical status of Poe in American literature has been contested between French and American critics. I will not presume to speak on the canon issue, which mainly concerns scholars of American literature, but I do want to observe that by the 1980s the love affair between France and American academia had become so narcissistic—in the Lacanian sense of the imaginary order—surrounding Lacan's reading of “The Purloined Letter” that all other concerns seemed to fade to the background. Lacan bore some degree of responsibility for some narrowly construed psychoanalytical criticism when he authorized the 1966 edition to be the opening text in *Écrits*: the definitive text.[116]

The earlier 1955 *explication de texte* has evolved through a convoluted history of textual revisions that can be glimpsed through the several versions and editions that exist. Although Lacan himself was not keen on getting his seminars published, at least three versions of the “same” text are in print so far, not counting the various foreign language editions that have appeared and are still appearing. The first printed version of “Le Séminaire sur ‘la lettre volée’” (Seminar on “The Purloined Letter”) was published in *La Psychanalyse* 2, 1956, which provided a synopsis of the main topics of the seminar in 1954–55 and included Lacan's discussion of letters and number sequences, cybernetics, and machine. In 1966, an extended version of this essay and synopsis was reissued in *Écrits*; it includes a note from Lacan called the “Presentation de la suite,” which prefaces his introduction of the mathematical diagrams. The note says: “To anyone wanting to get a feel for my seminar from this text, I hardly ever recommended it without advising him that this text had to serve to introduce him to the introduction that preceded it and that will follow it here.” The “introduction” here refers to the difficult part, which contains Lacan's detailed discussion of the mathematical and ideographic exercises of his group. The author predicts, however, **(p.198)** that the reader would skip this

last part: “This advice is usually not followed, a taste for obstacles being the ornament of persevering in being.”[117]

The 1966 version of *Écrits* received a partial English translation in 1972 and was printed in *Yale French Studies*, in which Lacan's “introduction,” which follows the main text, was inexplicably suppressed. In 1978, the transcript of the 1954–55 seminars was prepared by Jacques-Alain Miller and published under the title *Le Séminaire livre II: le moi dans la théorie de Freud et dans la technique de la psychanalyse, 1954–1955*. Sylvana Tomaselli's English translation of this transcript was published in 1988 with careful footnotes provided by John Forrester. The transcript indicates, as shown in this chapter, that Lacan discussed “The Purloined Letter” in more than one session between March 23 and May 11, 1955. As for the authorized version of “Seminar on ‘The Purloined Letter’” in *Écrits*, Bruce Fink's translation brought the complete text to the English-speaking world for the first time in 2002.

The discrepancies amongst these versions are too drastic and too numerous not to alert the reader about the validity of the claims that critics have put forward concerning Lacan's theory of the symbolic order and the unconscious. The textual history surrounding the transcription, publication, and translation of the seminar on “The Purloined Letter” raises a larger issue for us: insofar as Lacan's notion of the symbolic order was indebted to cybernetics and information theory, both having originated in the United States, why have most critics overlooked this connection as they discuss Poststructuralism and call it French theory?

Forrester offers a plausible explanation. He says that Jeffrey Mehlman's incomplete translation of the 1966 version in *Yale French Studies* of 1972 has “allowed the ‘Seminar’ to be read in Britain and America out of the context of Lacan's discussion of repetition, of the machine and cybernetics.”[118] This is very true, and we have seen how well the translingual reproductions of Lacan's *explication de texte* have guarded this open secret to the degree that what we know of Lacan has all but erased the traces of cybernetics that had framed his reading of Poe. On the other hand, all instances of cybernetics-blind reading of Lacan cannot be laid on the doorstep of the English translator when we recall that most Poststructuralist readers of Lacan in British and American academia are bilingual speakers who would have relied on, or at least consulted, one of the three French versions. For how else can we explain the fact that Jacques Derrida, who **(p. 199)** offers a remarkably detailed critique of Lacan's reading of Poe in “The Purveyor of Truth,” and Barbara Johnson, who makes an equally powerful rebuttal of Derrida's critique in “The Frame of Reference,” have each in his or her own way sidestepped the ubiquitous references in Lacan's seminar to the cybernetic machine, game theory, and information theory? What does this blind “play” of signifiers across the Atlantic tell us about the political unconscious of literary theory itself? Does it have something to do with the reproduction and policing of the boundaries of the disciplines against which Lacan fought so hard all his life?

Finally, Lacan's teaching “style” is not abstruse so much as it strives to be precise, for his privileging of letters, numbers, and ideographic symbols requires a cybernetic understanding of language and symbol. It may not be very easy to access this teaching until we are prepared to acquaint ourselves with some basics of information theory and cybernetic thinking. This does not mean that we must endorse them. Lacan's engagement with the contemporary theoretical developments has been dialectical and by no means uncritical. By thinking through them and about them with the input of Guilbaud, he brought the cybernetic unconscious of the postwar world order to light. Their work shows that there is absolutely no free play of signifiers in the games that define our existence in this world. Humanists can no more speculate freely about

language and texts than they can ignore the networked machines, codes, and institutions that produce them. Our theory, and theoretical discourse, too, are made to confront the symbolic order of our time as well as the originality of what appears in our world. That originality, as I demonstrate in the next chapter, lies in the coming of the Freudian robot. **(p.200)**

Notes:

(1.) Recent studies of media technology and cybernetics are beginning to remedy this situation. See John Johnson, *The Allure ofMachinic Life: Cybernetics, Artificial Life, and the New AI* (2008), Céline Lafontaine, *L'empire cybernétique: Des machines à penser à la pensée machine*, and the other studies I discuss in the chapter.

(2.) Jane Gallop has noted the play of mirrors between America and France in *Reading Lacan*. She observes an instance of the Lacanian imaginary in this play; namely, a specular relationship wherein one's understanding of the other is shaped by one's projected imagoes. She further suggests that instead of identifying with the (French) master analyst Lacan in his reading of Poe, an (American) reader might consider identifying with Poe's (American) narrator to escape the play of mirrors and find the symbolic there (Jane Gallop, *Reading Lacan*, 55–73). As my analysis in this chapter indicates, the Lacanian symbolic is not about any sort of identification processes; the latter could only take us back into the realm of the imaginary. The Lacanian symbolic lies rather in the cybernetic unconscious.

(3.) See Sylvere Lotringer and Sande Cohen, “Introduction: A Few Theses on French Theory in America,” 1.

(4.) See Sartre, “Jean-Paul Sartre Repond,” 94. In 1966, *L'Arc* devoted a special number to Sartre called “Sartre Aujourd'hui,” which contains this interview with the philosopher. In the interview, editor Bernard Pingaud specifically asked Sartre to respond to the work of the younger Structuralists including Foucault, Lévi-Strauss, Lacan, and Althusser.

(5.) Fredric Jameson, “Imaginary and Symbolic in Lacan: Marxism, Psychoanalytic Criticism, and the Problem of the Subject,” 374.

(6.) Friedrich Kittler, *Literature, Media, Information Systems*, 145. Kittler's insight was inspired by his reading of Lacan, which shows the irony of Sartre's somewhat flawed understanding of Lacan.

(7.) François Dosse gives only passing attention to cybernetics in his impressive two-volume study of the history of Structuralism. See Dosse, *History of Structuralism*, vol. 1, 220.

(8.) “American theory” serves as a shorthand reference to game theory, cybernetics, or information theory, which arose in postwar America and became hegemonic with the rise of American empire. I do not imply unities among these theories nor do I think the national origin of an individual scientist matters a great deal in this discussion. French and other European scientists had certainly contributed to the mathematical foundation of cybernetics, as Wiener himself has noted, but they did not invent cybernetics as a field nor was their work directly related to the exertion of American hegemony.

(9.) For a discussion of contested claims of priority, see William Poundstone, *Prisoner's Dilemma*, 40–41. In 1928, von Neumann brought out his paper “Zur Theorie der Gesellschaftspiele” (Theory of parlor games) but émile Borel had published a similar study as

early as 1921. Poundstone suggests that von Neumann was aware of Borel's study but made scant mention of it. Aside from professional jealousy, von Neumann did something that Borel had not done in his paper, namely, proving the famous minimax theorem, which would be crucial for the establishment of game theory as a field of study. Furthermore, as the French mathematician Guilbaud has noted, the crucial distinction between “game” and “play” was introduced into English by von Neumann and Morgenstern in their 1944 book. See Guilbaud, “Leçons sur les éléments principaux de la théorie mathématique des jeux,” part 2, 1–29.

(10.) The crowning moment of its universal recognition was the 1994 Nobel Memorial Prize awarded to John Nash, John Harsanyi, and Reinhard Selten.

(11.) This paper was first published in the *Bell System Technical Journal*, vol. 27 (July and October, 1948): 379–423, 623–56.

(12.) By Wiener's account, this happened in the summer of 1947. The Greek word was chosen because “we wish to recognize that the first significant paper on feedback mechanisms is an article on governors, which was published by Clerk Maxwell in 1868, and that *governor* is derived from a Latin corruption of *Κυβερνήτης*” See Wiener, *Cybernetics: or Control and Communication in the Animal and the Machine*, 19. For a detailed autobiographical account, see Wiener, *I Am a Mathematician*, 322–23.

(13.) Roger Caillois criticizes game theory in *Les jeux et les hommes* in 1958. His criticism, more nominal than intellectually engaged, dwells on how Huizinga and von Neumann use the same word to discuss very different subjects (161–75). Interestingly, Caillois' translator Meyer Barash keeps the word “games” in the English title as *Man, Play, and Games* and adds the word “play” to suggest critical tension between the two terms.

(14.) Elizabeth Roudinesco, *Jacques Lacan & Co.: A History of Psychoanalysis in France, 1925–1985*, 300.

(15.) Wiener's papers contain an undated transcript of a seminar he presented in Paris that includes a fascinating exchange between him and Hyppolite on the topic of game theory and the future of warfare (832). See Wiener, “L'Homme et la machine,” 824–42.

(16.) See Jean Hyppolite, “*Le coup de dés* de Stéphane Mallarmé et le message.”

(17.) Dosse, *History of Structuralism*, vol. 1, 58. See also Roudinesco, *Jacques Lacan & Co.*, 305–7. John Johnson makes a different conjecture about Lacan's relationship with Jakobson and thinks that it was probably Jakobson who introduced Lacan to cybernetics. My research has led me to new sources and a different conclusion. See my analysis below.

(18.) In Samuel Weber's attempt to grapple with the reversal of the Saussurian diagram, he resorts to wordplay and believes that it is all about *sens* (linguistic meaning) and anxiety. He argues that “the significant question that poses itself from within Lacan's writing for us then goes: how does the signifier become a signified? Or: How do signifieds come into being?” As my analysis shows below, this is far from being true, and there is no evidence to support the view that Lacan is at any point concerned with the signified or that the symbolic order has much to do with “anxiety.” See Weber, “Vertigo: The Question of Anxiety in Freud,” 206.

(19.) See Philippe Lacoue-Labarthe and Jean-Luc Nancy, *The Title of the Letter: A Reading of Lacan*, especially the second chapter, 33–50.

(20.) Deleuze and Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, 139–40.

(21.) Bruce Fink, “The Nature of Unconscious Thought or Why No One Ever Reads Lacan's Postface to the ‘Seminar on “The Purloined Letter,”’” 173–74.

(22.) Friedrich Kittler, *Gramophone, Film, Typewriter*, 15. For a critique of Kittler's effort to graft the three storage media onto Lacan's tripartite distinctions, see Thomas Sebastian, “Technology Romanticized: Friedrich Kittler's *Discourse Networks 1800/1900*.”

(23.) This is the argument and title of his “The World of the Symbolic—A World of the Machine,” in Kittler, *Literature, Media, Information Systems*, 130–46.

(24.) Alan Sokal and Jean Bricmont attack Lacan and his use of mathematics in this manner rather than engage in a responsible critique of the shadow figure of game theory, cybernetics, and information theory that lies behind Lacan's exercises in mathematical formalization. Interestingly, Sokal and Bricmont's own flawed understanding of complex numbers has been called into question by Arkady Plotnitsky. See Sokal and Bricmont, *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science, and Plotnitsky, The Knowable and the Unknowable*, 112–13. See also Bruce Fink's defense in *Lacan to the Letter*, 130–32. For typographical errors in Lacan's mathematical explications, see Fink, “The Nature of Unconscious Thought, or Why No One Ever Reads Lacan's Postface to the ‘Seminar on “The Purloined Letter,”’” 186–87n3.

(25.) Lacan, “Seminar on ‘The Purloined Letter,’” 10.

(26.) Lacan, “The Circuit,” 88.

(27.) See Derrida, *The Post Card: From Socrates to Freud and Beyond*, 403–96. I agree that Lacan must have known Bonaparte's book but do not think that the latter played a significant part in his reading of Poe's text. Derrida insists on associating Lacan's reading with Bonaparte's prewar work rather than confronting cybernetics, a postwar event, which oddly remains unaddressed throughout his criticism of Lacan. After comparing the relevant sources carefully, I conclude that Lacan's analysis has very little to do with Bonaparte and, in fact, goes in the opposite direction from her reading of Poe. It is for good reason that Lacan chose to mention the cyberneticians rather than acknowledge Bonaparte.

(28.) As I discuss below, Lacan's reading may also have indirectly been provoked by the popular Belgian writer Denis Marion, whose *La Méthode intellectuelle d'Edgar Poe* (1952) presents a rather superficial understanding of mathematical reasoning and Poe's literary strategy. Marion identifies Poe with Dupin and describes rather than analyzes Poe's cryptographic work.

(29.) The original statement is “le hasard nous l'a offerte” in Jacques Lacan, “La lettre volée,” 264. In the preceding seminar on March 30, 1955, he had made the observation I cited in the epigraph, indicating that the chance arrived through the cyberneticians (ibid., 244).

(30.) Lacan, “Odd or Even? Beyond Inter subjectivity,” 179. The original text goes: “Un petit texte vient à notre secours, d'Edgar Poe, dont je me suis aperçu que les cybernéticiens faisaient quelque cas. Ce texte est dans *la Lettre volée*, novelle absolument sensationnelle, qu'on pourrait même considérer comme fondamentale pour un psychanalyste” (“Pair ou Impair?”).

(31.) Lacan, “The Purloined Letter,” 194.

(32.) Lacan, “The Purloined Letter,” 192.

(33.) For detailed analysis, see below for my reading of game theory in Georges Th. Guilbaud, “Leçons sur les éléments principaux de la théorie mathématique des jeux,” chap. 2, 7.

(34.) Derrida's critique of Lacan's logocentrism in “The Purveyor of Truth” misrepresents what Lacan is doing with symbolic systems in the seminar. As Barbara Johnson correctly points out, Derrida's silence on the game of even and odd is indicative of his blindspot. See Johnson, “The Frame of Reference: Poe, Lacan, Derrida,” 213–51.

(35.) Lacan, “Odd or Even? Beyond Intersubjectivity,” 178.

(36.) On Turing's repeated failure to retrieve his silver bars, see Andrew Hodges, *Alan Turing: The Enigma*, 344–45.

(37.) Jean-Pierre Dupuy, *The Mechanization of the Mind: On the Origins of Cognitive Science*, 109.

(38.) See Roux, “Psychanalyse et cybernétique: Les machines de Lacan,” 346–69.

(39.) For example, von Neumann and Morgenstern discuss the game of “matching pennies” by focusing on the strategies of preventing loss: “In playing Matching Pennies against an at least moderately intelligent opponent, the player will not attempt to find out the opponent's intentions but will concentrate on avoiding having his own intentions found out” (von Neumann and Morgenstern, 133).

(40.) The evidence of Lacan's early interest in game theory is found in his “Logical Time and the Assertion of Anticipated Certainty” published in 1945, shortly after the appearance of *The Theory of Games and Economic Behavior*. See Lacan, Écrits, 161–75.

(41.) Roudinesco, *Jacques Lacan & Co.*, 560.

(42.) See Bernard Colasse and Francis Pavé, “La Mathématique et le social: entretien avec Georges Th. Guilbaud,” 72.

(43.) For an overview of cybernetics in France, see David Mindell, Jérôme Segal, and Slava Gerovitch, “From Communications Engineering to Communications Science: Cybernetics and Information Theory in the United States, France, and Soviet Union,” 66–95. See also Mai Wegener, *Neuronen und Neurosen: Der psychische Apparat bei Freud und Lacan: Ein historisch-theoretischer Versuch zur Freuds Entwurfvon 1895*; Laurence A. Rickels, *Nazi Psychoanalysis: Crypto-Fetishism*, vol. 2.

(44.) See Aubin, “The Withering Immortality of Nicolas Bourbaki: A Cultural Connector at the Confluence of Structuralism, Mathematics, and the Oulipo in France,” 311. François Dosse discusses the Bourbaki connection very briefly in the *History of Structuralism*, vol. 2, 24.

(45.) The Technology Press tried to prevent the publication of the book in France, because Wiener, then a professor at MIT, was bound to them by contract, but Enrique Freymann, the owner of the Hermann Editions, managed to strike a compromise. See Mindell, Segal, and Gerovitch, “From Communications Engineering to Communications Science: Cybernetics and Information Theory in the United States, France, and Soviet Union,” 75.

(46.) See Norbert Wiener, *I Am a Mathematician*, 314–17.

(47.) Mindell, Segal, and Gerovitch, “From Communications Engineering to Communications Science,” 75.

(48.) Roux, “Psychanalyse et cybernétique: Les machines de Lacan,” 355.

(49.) Roudinesco, *Jacques Lacan & Co*., 560. Benveniste also published an essay on game theory as early as 1947 called “Le jeu comme structure” (Game as structure), 161–67. Interestingly, by engaging exclusively with Johan Huizinga's *Homo Ludens* and Roger Caillois's work and focusing on the jeux and the sacred, Benveniste suppresses the possibility that the popularity of von Neumann's and Morgenstern's game theory might have something to do with the reissuing of Huizinga's Homo *Ludens* in German in 1944 and in other languages in the 1950s. At least we know that game theory provoked Caillois to write *Les jeux et les hommes* to critique von Neumann and Morgenstern. The title is rendered in English as *Man, Play, and Games*, where *jeux* is appropriately translated twice and differently

(50.) See Ellie Ragland and Dragan Milovanovic, eds., *Lacan: Topologically Speaking*.

(51.) This essay has been translated into English and included in Mary Ann Dimand and Robert W. Dimand, eds. *The Foundations of Game Theory*, vol. 1.

(52.) Harold W. Kuhn, introduction to John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior*, x.

(53.) Guilbaud, “Leçons sur les éléments principaux de la théorie mathématique des jeux,” chap. 3, 18.

(54.) Roux, “Psychanalyse et cybernétique,” 352.

(55.) The essay was first published in *Les cahiers dart*. According to Roudinesco, Lacan came across the sophism of the prisoners' dilemma from André Weiss as early as 1935. See Elizabeth Roudinesco, *Jacques Lacan*, 176. Interestingly, his thoughts on the sophism and its implications for thinking about logical time did not appear in print until 1945. The fact that Lacan's work on game and logical form began in 1945 rather than in 1935 supports a historical argument about his relationship with game theory.

(56.) William Poundstone, *Prisoner's dilemma*, 101–25. Poundstone gives a brief discussion of how novelists have treated the prisoner's dilemma and points out that “a perceptive discussion of a prisoner's dilemma (closely following Tucker's anecdote!) occurs in Edgar Allan Poe's story ‘The Mystery of Marie Rogêt.’ Poe's detective C. Auguste Dupin speaks of an offer of reward and immunity to the first member of a criminal gang to confess: ‘Each one of a gang, so placed, is not so much greedy of reward, or anxious for escape, as *fearful of betrayal*. He betrays eagerly and early that *he may not himself be betrayed*’” (124).

(57.) RAND, an acronym for “Research and Development,” was founded by the US Air Force in 1946 as a joint venture with Douglas Aircraft. Its mandate was to study the techniques of air warfare. For a detailed analysis of game theory at RAND, see Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, 113–45.

(58.) For a superb discussion of Lacan's concept of logical time during this period, see Erik Porge, *Se compter trios: le temps logique de Lacan*.

(59.) Roudinesco suggests that Lacan used this sophism to attack Sartre's conception of freedom in a play called *Huis clos* (No exit) in 1944, but she does not mention Lacan's interest in game theory, which puts the idea of freedom in doubt. See Roudinesco, *Jacques Lacan*, 176–77.

(60.) Lacan, “Logical Time and the Assertion of Anticipated Certainty,” 162.

(61.) Guilbaud, “The Theory of Games: Critical Contributions to the Theory of Value,” 372. The original essay, “La Théorie des jeux: contributions critiques à la théorie de la valeur,” was published in the April-June number of *Economie Appliquée*, 275–319.

(62.) In their treatment of the game of “matching pennies,” von Neumann and Morgenstern analyze the Sherlock Holmes story “The Adventure of the Final Problem” under the category of zero-sum two-person games. For their detailed discussion, see von Neumann and Morgenstern, *Theory of Games and Economic Behavior*, 176–78.

(63.) Guilbaud, “The Theory of Games: Critical Contributions to the Theory of Value,” 372.

(64.) The Theory of GamesGuilbaud, “The Theory of Games: Critical Contributions to the Theory of Value,” 373.

(65.) See H. W. Kuhn, “Extensive Games,” 571.

(66.) Guilbaud, “Leçons sur les éléments principaux de la théorie mathématique des jeux,” chap. 2, 6.

(67.) I developed the concept of supersign to designate the invisible bonding of heterolinguistic elements caused by translation. In contrast to the case of neologisms, this process is observable in any verbal unit whose signified is implicitly referred to a foreign word(s), thus transforming the familiar word without subjecting it to visible morphological changes. For detailed elaboration of this concept in semiotics, see Liu, *The Clash of Empires: The Invention of China in Modern World Making*, 12–13.

(68.) Jacques Derrida, *Margins of Philosophy*, 20. The slippage between “play” and “game” characterizes Alan Bass's translation of Derrida. The following statement is also typical: “The concept of play keeps itself beyond this opposition [between philosophical-logical discourse and empirical-logical discourse], announcing, on the eve of philosophy and beyond it, the unity of chance and necessity in calculations without end” (ibid., 7). For the reasons I am emphasizing here, the word *jeu* in this case ought to have been rendered back into English as “game” because the current translation makes little sense in the context of Derrida's statement.

(69.) Lacan, “The Purloined Letter,” 192–93.

(70.) See my discussion in chapter 2.

(71.) David Golumbia, *The Cultural Logic of Computation*, 40.

(72.) Chomsky, *Syntactic Structures*, 18.

(73.) For a detailed account of Chomsky's work, from his initial exposure to Zellig Harris's work on distribution patterns at the University of Pennsylvania to his transformational generative grammar at MIT, see Margaret A. Boden, *Mind as Machine: A History of Cognitive Science*, vol. 1, 624–30.

(74.) Lacan, “The Purloined Letter,” 192.

(75.) Guilbaud, *What Is Cybernetics*?, 48.

(76.) In Structural Anthropology, Lévi-Strauss comments on the work of Trubetzkoy thus: “structural linguistics shifts from the study of conscious linguistic phenomena to study of their unconscious infrastructure” (vol. 1, 33).

(77.) Jakobson, Fant, and Halle, *Preliminaries to Speech Analysis*, 43–45.

(78.) Anthony Wilden informs us that Lacan once said (to him?), “The hell with linguistics” (Wilden, *System and Structure*, 19). For some reason, however, Wilden chooses not to engage with the theorist's work on cybernetics or information theory and occasionally shows his mistaken judgment that, for example, is readily seen when he writes: “Lacan has persisted in a linguistic approach to Freud. It is this lack of understanding of the difference between language and communication—very evident in O. Mannoni's *Freud* (1971), for example, especially in the Afterword to the American edition—which accounts for the present impasses in the theory, as well as for the problems of interpretation which I found impossible to solve in the first edition of my own work on Lacan” (ibid.). As we know, Wilden worked closely with Lacan and was among his early translators, so I find it inexplicable that he managed to miss the central aspects of the Lacanian symbolic order in his study, which is focused on communication and which cites cyberneticians Wiener and Gregory Bateson many times.

(79.) Lacan's criticism of linguistic theory sometimes comes to the surface, the following being one of many examples: “When I say ‘it rains,’ the subject of the enunciation is not part of the sentence. In any case here there is some sort of difficulty. The subject cannot always be identified with what the linguists call ‘the shifter.’” This last comment on “shifter” is clearly directed at Jakobson. Although the latter did not coin the term, he developed the concept for structural linguistics. See Lacan, “Of Structure as an Inmixing of an Otherness Prerequisite to Any Subject Whatsoever,” 188.

(80.) The Rome Discourse was later published under the title “The Function and Field of Speech and Language in Psychoanalysis.”

(81.) Lacan, “The Function and Field of Speech and Language in Psychoanalysis,” 223.

(82.) The archaeological studies conducted by Chen Jiujin and Zhang Jingguo date the appearance of the *bagua* arithmetic to five thousand years ago. See their “Hanshan chutu yupian tuxing shikao” (A preliminary analysis of the iconography in the jade fragments from the excavation site in Hanshan), 14–17.

(83.) See Elizabeth Roudinesco, *Jacques Lacan & Co.*, 147, and also Lacan's 1971 seminar, *Le Séminaire Livre XVIII: Ďun Discours qui ne serait pas du semblant*. This seminar is devoted to extensive discussions of Chinese philosophy and written characters.

(84.) For a study of Lacan's relationship to the Chinese language, see Richard Serrano, “Lacan's Oriental Language of the Unconscious,” 90–106.

(85.) André Leroi-Gourhan, *Gesture and Speech*, 188.

(86.) Donald F. Lach, “Leibniz and China,” 446. Fu Xi is the first of China's mythical emperors; he is said to have been born in the twenty-ninth century BCE. To him are attributed both the trigrams and the invention of writing. In short, he represents the origin of civilization: creating the institution of marriage, domesticating animals, teaching people how to fish with nets and hunt with weapons made of iron, how to cultivate their land, etc.

(87.) Wiener, *Cybernetics*, 52–53.

(88.) See Guilbaud, “Divagations cybernétiques,” 283.

(89.) Like Guilbaud, Lacan reconstructs the genealogy of cybernetics by tracing its origin to French mathematicians Pascal and Condorcet. See Lacan, “Psychoanalysis and Cybernetics, or on the Nature of Language,” 296.

(90.) Guilbaud, *What Is Cybernetics?*, 72. Guilbaud is not the first to bring information theory under the aegis of cybernetics as Wiener had done the same. In an early essay, Dubarle also reflected on the “points of contact between cybernetics and game theory.” See Dubarle, “Idées scientifiques actuelles et domination des faits humains,” 311–12.

(91.) Guilbaud, *What Is Cybernetics*?, 70.

(92.) Warren McCulloch and Walter Pitts, “A Logical Calculus of the Ideas Immanent in Nervous Activity,” 114.

(93.) Joseph Dumit, “Neuroexistentialism,” 186.

(94.) Lacan, “Some Questions for the Teacher,” 209.

(95.) Lacan, “The Circuit,” 88.

(96.) Wiener, *Cybernetics*, 19.

(97.) In *Gramophone, Film, Typewriter*, Kittler mentions Morse code in passing (12) but jumps over that technology in his discussion of the technological embodiment of the Lacanian symbolic from the typewriter to computing technology.

(98.) Shannon did most of his pathbreaking work at the Bell Telephone Laboratories in 1941–58 and continued to be affiliated with the Bell Labs until 1972. He became a professor at MIT in 1958 and taught there until his retirement in 1978.

(99.) Shannon and Weaver, *The Mathematical Theory of Communication*, 39.

(100.) For Lacan's detailed explication of this diagram, see *Écrits*, 35–39.

(101.) Shannon and Weaver, *The Mathematical Theory of Communication*, 38.

(102.) Lacan, “The Circuit,” 82.

(103.) Lacan, “Odd or Even? Beyond Intersubjectivity,” 178.

(104.) Lacan, “Where Is Speech? Where Is Language?” 284.

(105.) Lacan, “Where Is Speech? Where Is Language?” 286. A natural number p is prime if and only if the only positive integers that divide p are 1 and p itself. Examples are 2, 3, 5, 7, 11, 13, etc. This quote demonstrates Lacan's awareness that computers were being used to accelerate the discoveries of ever greater prime numbers after 1951.

(106.) Lacan, “The Circuit,” 89.

(107.) Lacan repeated this point on a number of occasions to emphasize the power of repetitive insistence in the concept “compulsion.” See, for example, Lacan, “Freud, Hegel, and the Machine” and “Some Questions for the Teacher.”

(108.) Lacan, “Homeostasis and Insistence,” 56.

(109.) Kittler, *Literature, Media, Information Systems*, 134.

(110.) Lacan, “The Circuit,” 83.

(111.) Lacan, “Psychoanalysis and Cybernetics, or on the Nature of Language,” 299.

(112.) See Mark C. Taylor, *Altarity*, 93–94.

(113.) Steve Joshua Heims, *The Cybernetics Group*, 235.

(114.) For Wiener's viewpoint, see *Cybernetics: or Control and Communication in the Animal and the Machine*, 31–32.

(115.) Lacan, “ĽÉcrit et la parole” (Writing and speech) in *Le Séminaire livre XVIII: Ďun discours qui ne serait pas du semblant*, 89.

(116.) Lacan apparently insisted on placing the “Seminar on ‘The Purloined Letter’” in the beginning of this volume against the objection of his editor Francois Wahl.

(117.) Lacan, “Seminar on ‘The Purloined Letter,’” 30.

(118.) John Forrester, *The Seductions of Psychoanalysis: Freud, Lacan, and Derrida*, 339n72.