



steven pinker

the language instinct

recursion. A procedure that invokes an instance of itself, and thus can be applied repeatedly to create or analyze entities of any size.

These rules embed one instance of a symbol inside another instance of the same symbol (here, a sentence inside a sentence), a neat trick—logicians call it "recursion"—for generating an infinite number of structures.

Human language is an embarrassment for evolutionary theory because it is vastly more powerful than one can account for in terms of selective fitness. A semantic language with simple mapping rules, of a kind one might suppose that the chimpanzee would have, appears to confer all the advantages one normally associates with discussions of mastodon hunting or the like. For discussions of that kind, syntactic classes, structure-dependent rules, recursion and the rest, are overly powerful devices, absurdly so.

how the mind works

Educated understanding is an enormous contraption of parts within parts. Each part is built out of basic mental models or ways of knowing that are copied, bleached of their original content, connected to other models, and packaged into larger parts, which can be packaged into still larger parts without limit. Because human thoughts are combinatorial (simple parts combine) and recursive (parts can be embedded within parts), breathtaking expanses of knowledge can be explored with a finite inventory of mental tools.

the blank slate

A fourth is recursion: the ability to embed one thought inside another, so that we can entertain not only the thought that Elvis lives, but the thought that the National Enquirer reported that Elvis lives, that some people believe the National Enquirer report that Elvis lives, that it is amazing that some people believe the National Enquirer report that Elvis lives, and so on.

The possible combinations quickly multiply out to unimaginably large numbers. Indeed, the repertoire of sentences is theoretically infinite, because the rules of language use a trick called recursion. A recursive rule allows a phrase to contain an example of itself, as in *She thinks that he thinks that they think that he knows* and so on, ad infinitum. And if the number of sentence is infinite, the number of possible thoughts and intentions is infinite too, because virtually every sentence expresses a different thought or intention.



Father William McCabe, the Jesuit who pushed Marshall McLuhan out on a St. Louis stage, wrote about the Jesuit baroque theater. His 1929 Cambridge University dissertation was posthumously published in 1983 as "An Introduction to Jesuit Theater." An excerpt from the preface follows.

"This is the first work on the Jesuit theater to appear in English; it opens up a chapter in the history of drama whose existence has been almost unknown in these lands, its significance hardly suspected.

But nowhere has anybody attempted the project I undertake at the outset of the present work, of furnishing a general account of the origins, the rise, and the purpose of the Jesuit theater throughout Europe, its actors, dramatists, and audiences, the nature of the plays produced, the sources for a detailed study of the whole movement and of its significance in the history of drama."

Then later:

"Elsewhere in this theater the employment of miraculous and preternatural elements, the introduction of scriptural, mythological, and medieval allegory called for scenic effects that must have required an amazing amount of stage machinery.

I can best illustrate the whole subject, perhaps, by a play produced at Rome in 1622 for the canonization of St. Ignatius." p 58.



The chair of the English department, Father William McCabe, offers Marshall McLuhan a research sabbatical. Recently married McLuhan leaves with his bride for Cambridge, England. On his return to St. Louis McLuhan discovers that Father McCabe is assigned to another Jesuit College, and Bernie Muller-Thym has gone to do service in the U.S. Navy. Father Norman Dreyfus replaces McCabe as department chair. McLuhan and Dreyfus are not compatible. McLuhan and family leave for Canada, not to return. Walter Ong goes off in search of Peter Ramus. Father McNamee finishes his thesis on Francis Bacon. He then takes a St. Louis leave but comes back and eventually becomes chair of the University's English department. Later "the Baroque beckons,"



a posse dissolves, more passage

and McNamee becomes an art historian. He publishes, currates and honors a family of glaziers. McNamee traces much to Father McCabe, the Jesuit who set the passage. This is from Father McNamee's autobiography "Recollections In Tranquility."



Another of Father McCabe's courses exposed an entirely new horizon for me. It was a course on the Jesuit theater as it had developed at St. Omers, a Jesuit school on the continent for English Catholic students during the years of persecution in England. It revealed to me for the first time what an important part the Jesuits played in the cultural life of the continent before the suppression. The course was the fruit of Father McCabe's doctoral dissertation at Cambridge. He showed that the theaters were an integral part of an education in the traditional Jesuit collegium. They centered specifically on the annual production of a spectacular dramatic performance, which sometimes involved most of the students in the college and many of the city population. It was the duty of the rhetoric teacher to write the text of the play and to oversee its production. The settings for these plays were elaborate, demanding the work of expert designers in the baroque manner.

Andrea Pozzo was a Jesuit brother and a world-famous theorist on perspective, as well as an accomplished baroque artist himself. Among other things, he designed the fabulous baroque fresco St. Ignatius in Glory on the ceiling of the San Ignazio Chapel of the Roman College. He devoted some of his time to designing sets for the spectacular Jesuit theater productions. The performances included musical accompaniment and formal dance, so training in both areas was part of the curriculum in the pre-suppression Jesuit schools. I was to learn later how completely involved the early Jesuits were in promoting the arts. They commissioned churches all over Europe designed in the elaborate baroque style, so much so that baroque is sometimes called the Jesuit style. The Jesuits certainly did not invent it, but they used it so extensively that it became identified with them.

Fr. Maurice McNamee, "Recollections In Tranquility"



