ASTRONAUTS OF INNER-SPACE:

AN INTERNATIONAL COLLECTION OF AVANT-GARDE ACTIVITY

17 MANIFESTOES, ARTICLES, LETTERS, 28 POEMS & 1 FILMSCRIPT

AS THE PRESCRIPTION FALLS, PROPERLY STRIKES A CORNER, OF THE MEANWHILE.

TO AID THE
METALLISATION OF THE ' DREAM
A SHORT HISTORY OF THE COMMON
WOODEN CIRCLES, PAPER SQUARES
INKWEEL 1934, OLD NEWSPAPERS,
AND A DICTIONARY OF GUNS.
THE CAMERA RUIND & VIRGIN
A CLOCKWORK MASK LIKE AN EYE

AN INTERNATIONAL COLLECTION.

To some people a digital computer is a mark of doom: a symbol of Man's increasing servitude to the Machine. To others it is a gigantic multiple switch which, under favourable conditions, operates with the speed of light, but which only too often, e.g. when it gets too hot, will not operate at all. To others again it is puzzle-solving work of the most exhausting possible kind, punctuated by frustrations when the programs fail or 'get bugs'—which is normally.

To all of these, however, the computer is undoubtedly Science. I want to advocate a gayer and yet more creative use of it which is, by definition, Art: a use which, in the hands of a master, might indeed become art itself.

This use is making toy models of language. The models are *toys* because they are small, easy to construct and (so one fondly thinks at the beginning, when constructing them) easy to operate. They are *models* because they are designed to isolate, exaggerate and generate in quantity some feature of speech which normally human beings are not able to isolate; and thus to throw light both on the habits of language-users and on the nature of conceptual thought itself.

Two such toy models have become widely known. The first of these was the program produced by Christopher Strachey, in which he made the Manchester University Computer write love-letters. A typical output of this program was the following:

* DEAR HONEY-DEW
  YOU ARE MY GREATEST WHISKERS MY UTTER MOONBEAM
    YOURS BEAUTIFULLY
      MANCHESTER UNI-
        VERSITY COMPUTER.

Developing the same idea, Professor Victor Yngve, of the Massachusetts Institute of Technology, devised a program for generating grammatically correct but semantically randomised sentences, using as a vocabulary and grammatical guide the first ten sentences of Lenski's *Little Train*. The actual sentences were: *Engineer*

MARGARET MASTERMAN:

Small has a little train. The engine is black and shiny. He keeps it oiled and polished. Engineer Small is proud of his little engine. The engine has a bell and a whistle. It has a sand-dome. It has a headlight and a smokestack. It has four big driving wheels. It has a firebox under its boiler. When the water in the boiler is heated it makes steam. The kind of thing which the computer produced was:

* WHEN HE IS PROUD AND OILED * ENGINEER * SMALL IS POLISHED
* ITS STEAM IS PROUD OF WHEELS
* A FIREBOX IS PROUD OF SMALL
* STEAM IS SHINY

The question whether such sentences as these are or are not nonsense is an extremely sophisticated one. Is

* WHEN HE IS OILED HE IS POLISHED, for instance, nonsense or not?

It will be noted that these two toy models both take English grammar and syntax for granted, but isolate and exaggerate the factor of the wide range of choice which human beings have in the actual sequences of words

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The use of Computers to make Semantic toy models of language

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they write or say. The question arises, however, whether we could not make a Toy Model which was semantically constrained but syntactically simplified. For instance, take a set of 12 short questions and 12 short answers from an A.A. phrasebook: e.g. *When does it leave? Are you feeling ill? Where does he live? Down that street. Early next week. I don't know.* Code these questions with semantic classifiers in any way which defines for you the range of sensible answers which the question could have; and conversely for the answers; and then let the computer loose to match questions and answers. Again, judging the result is a sophisticated activity. Is * WHY AREN'T YOU DRESSED? † I THOUGHT I WAS a sensible piece of dialogue or not? And granted that the computer

can thus be made to talk 'sense', with how 'pidgin' a syntax could we get the meaning over?

Once the toy-model-making idea is grasped, endless ideas suggest themselves; and one has to ask "What is the underlying aim behind all this?" Surely what is really being done here is making the computer talk not by painfully teaching it one new word after another, and then how to combine them, but by teaching it to damp down the enormous permutational resources of the whole language so that tolerable conceptual and semantic associations are formed. In other words, the computer does not behave as the child does; *it behaves as the drunk poet does.* Huge sets of literal and metaphorical word-uses (e.g., from *Roget's Thesaurus*) have been fed into it, and it combines them. But why rely on Roget? Why be so stereotyped? Why not get a real poet to feed unusual strings of synonyms and usual rules of combination into the machine, and then see what sort of sequences come out?

You will say that to use a computer to write poetry is like using a crane instead of a pen to write a letter. This is not so. The computer's advantage is that it does not tire; it can produce an indefinitely large amount of an indefinitely large number of variants of any type of combination of words which the poet may desire to construct. By reading (and analysing, if necessary again with the computer) what it produces we can at last study the complexity of poetic pattern, which intuitively we all feel to exist, if only we were able to grasp it. And this increase of understanding of poetic pattern will, in the end, deepen our mastery of, and understanding of, poetry itself.