NOTES BY IVOR DARREG 28 DECEMBER 1968
The Translo Problem and beyond it

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Abstracted from all written representations, and also abstracted from any audible representation, whether Translo or some audible code system, mathematics is neither spatial nor temporal. Rather it is eternal. The usefulness and necessity of geometry obscures this fact, by implying that all mathematical statements must be coupled with visual space. The fact that visual notations or diagrams take time to write and to read also implies a temporal element in mathematics that is not really essential to it. Audible representations also imply **time.**

However, many authors show that geometry itself is not really dependent upon visual representations or diagrams.

The notion of **Operators,** in the mathematical sense. Grammatical endings, prefixes, suffixes, and sometimes function-words as operators, more or less in this mathematical sense.

This leads to the operation of **abstracting.** The attempt to invert this and de-abstract, results in introducing characteristics that probably were never there in the original that was abstracted from in the first place.

If we apply linguistic concepts to mathematics, the algebraic letters and some other symbols, and their counterparts in symbolic logic, may be regarded as PRONOUNS.

But this last must be further generalized: Natural languages contain other "pro" parts of speech not recognized by the average grammarian: Pro-verbs, Pro-adjectives, pro-adverbs, etc. perhaps even pro-pronouns. This leads to postulating an Operation of Pro-ing. A kind of insteadness, substitution, abstracting.

Among the pronouns, the interrogatives, such as what?, present a strange problem: as Jespersen said, "if a pronoun is a word used instead of a noun, what does what stand for?" Structural linguists often symbolize the interrogatives by wh-. The "unknowns" of algebra are analogous to a certain extent.

We can conceive temporal-to-spatial-to-temporal operators and transformations, various kinds of re-coding. This is not quite the audible-code-to-visual-code-to--audible-code pair of transformations, though the two concepts are very close.

Those persons (chiefly the "visiles" or visually-biassed) who have not separated mathematics from its visual representations, and who therefore think of it as essentially spatial, will resent an explicit audible (and thus, temporal) coding such as the Numaudo System, but will not say **why** they resent it. This is what makes the denial of either spatial or temporal components as being essential parts of mathematics proper, so important. The dragging in of a hyphenated space-time, useful as it might be in other connections, is irrelevant and confusing here. That which is independent of space or time will also be independent of space-time.

Such persons also may not realize the harmfulness of Translo. Translo is distorted translation of mathematical symbols and concepts into ordinary language. Translo also extends and expands to many fields outside mathematics, particularly art. Once Translo was discovered (back in the mid-sixties), it immediately began to generalize itself beyond mathematics proper. Failure of two symbol-systems to have one-to-one correspondence, or even, nearly to have it, is unfortunately very widespread indeed, especially when one system, such as mathematical notation, is visual, while another system, such as ordinary language, is audible. It is remarkable that the discrepancy between, say, English spelling and English speech, or between formal "bookish" language and the speech of the man-in-the-street, should be conspicuous and commented on by average persons, but the much worse discrepancy between mathematical written notation (which needs a new name, for it has none to call its own) and the bastard jargon used to read it aloud—more correctly, in the attempt to read it aloud—is ignored by a sort of etiquettical agreement to hush this up.

Because Translo is subconscious, it does great harm! Exposing it to conscious attention will take much of the sting out of it.

How do we make people conscious of Translo? First we have to give it a name. You surely have never seen the word "Translo" before. Why do you suppose I had to name it? Nobody ever did much about Translo, because it was nameless and ignored. Why name it now? Because the problem matters today in the computer age but in the B,C. era it didn't matter very much. (BC = Before Computers.) Today, mathematics has to be taught much earlier in schools, and it has to be more sophisticated. Plain old arithmetic is no longer enough. So long as average people didn't have to go much beyond adding and subtracting and counting, the discrepancy between what was spoken and what was written wasn't such a big deal, but today in a high-tech society there are all kinds of symbols and letters standing for numbers and the Translo problem has gotten out of hand. We can't attack it if it stays nameless. In fact, we haven't had a name for the written notation either, so let's christen it with a new acronym: LOMANO for LOgico-MAthematical NOtation. Hopefully, you won't be so afraid of these affairs now that they have names.

Typical example of Translo: "The square root of five." Contrast the metaphors of "square" and "root" with the neat compactness of the Lomano symbols: $\sqrt{5}$. Go back to the Translo and see how many words it took. You will find many more examples of Translo and the Lomano it tries to say aloud, in textbooks, so we needn't repeat them here.

Instead, let's take a bold leap into the future: Mathematics has grown because something higher than ordinary language was needed for progress. Can we not speculate: can we postulate a higher-order entity beyond mathematics, something of which mathematical notation is only the Translo? It needs a name, so call it Deuterognosis for the time being.

No, we are not begging questions here, nor trying to describe what this new Deuterognosis might be like—just presuming that it may exist. It could be centuries before it is explored or discovered. Why have so few thought about it? Because Translo has remained nameless, so the step up to the first level could not be made, and now this higher-order affair would require getting to a second upper level.

Also, the skeptics and especially the 19th-century type of materialists have such great dread of anything that might turn out to be mystical that they refuse to grant such possibilities. It could even be that this compounded- and multi-level Translo problem might explain "mystical ineffability"—when certain people claim that they **know**, but cannot put it into words.

Of what is ultramodern sculpture or painting the Translo? Or, of what is music the Translo? Is that why many people fear advanced music? Is that why they want no progress in music? Is that why they want music as a mere Nostalgia Trip to stop them thinking?

When it has been stated by so many that scientific and artistic creativity have much in common, why do so many people not want to admit this? Are they AFRAID of what might happen if Art and Science got together and Made Things Happen?