Humanistic Mathematics Network Journal

Issue 23

Article 16

9-1-2000

Skolem's Paradox and Contradictory Popular Songs

Maurice Machover St. John's University

Follow this and additional works at: http://scholarship.claremont.edu/hmnj Part of the <u>Mathematics Commons</u>, and the <u>Music Commons</u>

Recommended Citation

Machover, Maurice (2000) "Skolem's Paradox and Contradictory Popular Songs," *Humanistic Mathematics Network Journal*: Iss. 23, Article 16. Available at: http://scholarship.claremont.edu/hmnj/vol1/iss23/16

This Article is brought to you for free and open access by the Journals at Claremont at Scholarship @ Claremont. It has been accepted for inclusion in Humanistic Mathematics Network Journal by an authorized administrator of Scholarship @ Claremont. For more information, please contact scholarship@cuc.claremont.edu.

RUCKER, RUDY, 1995. *Infinity and the Mind*. Princeton, N.J.: Princeton University Press.

SUPPES, PATRICK, 1972. *Axiomatic Set Theory*. New York: Dover.

URTON, GARY, 1997. The Social Life of Numbers: A Quechua Ontology of Numbers and Philosophy of Arithmetic. Austin: Uni-

versity of Texas Press.

VILENKIN, N. Ya., 1995. In Search of Infinity. Boston: Birkhuser.

YOUNG, M. JANE, 1988. *Signs from the Ancestors: Zuni Cultural Symbolism and Perceptions of Rock Art*. Albuquerque: University of New Mexico Press.

Skolem's Paradox and Contradictory Popular Songs

Maurice Machover St. John's Univ.-Math. Dept. Jamaica, NY 11439-0001 e-mail: machovem@stjohns.edu

Skolem's paradox (named after the logician Thoralf Skolem) essentially points out that logic is relative: it depends on where you sit. More specifically, it is a paradox in set theory. It states that set theory has a countable model, which nevertheless contains uncountable sets. Formal set theory implies that there exists a set which is infinite, but no function exists which will map this set one-to-one onto the natural numbers: it is uncountable. Hence any model of set theory mirrors this "uncountable" set. But, according to the well-known Lowenheim-Skolem theorem, set theory has a model with only a countable number of objects in it. How can this be? The answer often given is "it depends on where you put the emphasis:" Do you emphasize the metamathematical countability or the formalized uncountability?

So now we turn to contradictory popular songs. Whether they are contradictory or not depends on where you put the emphasis. With some mental effort they might even be consistent. In these love songs we are supposed to imagine hopeful lovers: clearly, the emphasis is on "yes" rather than "no."

1. LET'S CALL THE WHOLE THING OFF

In this song the lovers are debating whether or not to call off their relationship (or a planned rendezvous). It seems that they disagree on the pronunciation of words such as "oyster," "pajamas," "either" and such (I would like to add "quark"). The debate continues until the last two lines, which are "so let's call the calling off off' and "let's call the whole thing off." These last two lines contradict each other, and I for one do not know whether it was called off or not.

2. BEGIN THE BEGUINE

According to the literature the Beguine was said by Cole Porter to be a romantic dance among certain natives, but he denied it later. Apparently the issue is whether or not to begin this memorable love dance or song. In one line you hear, "So don't let them begin the Beguine!...Let the love that was once a fire remain an ember," to be soon followed by "Oh yes, let them begin the Beguine, make them play!" This contradictory behavior can be understood by allowing for the emotional state of the singer. It seems to me that the emphasis is on the "yes" here, rather than the "no." Artie Shaw circumvented having to make the decision by producing a strictly instrumental version of the song (which is presently in top place on a popular radio station).

3. I'M IN THE MOOD FOR LOVE

The song begins with the words, "I'm in the mood for love." The singer then proceeds to explain why he or she is in the mood for love. This goes on until you hear the words "If it should rain, well let it; but for tonight forget it; I'm in the mood for love." This last sentence doesn't seem to make sense to a sensitive listener who is startled by "forget it" only to hear again "I'm in the mood for love." Louis Prima and Keely Smith avoid this paradox by substituting the phrase "if it should rain, well let it; but for tonight well let it; I'm in the mood for love."

It is interesting to speculate how a Turing machine would decide these "decision problems."