

On another page, under the rubric "My philosophical viewpoint," Gödel lists fourteen items which appear to be an attempt to outline his fundamental philosophical beliefs:

9.4.17

1. The world is rational.
2. Human reason can, in principle, be developed more highly (through certain techniques).
3. There are systematic methods for the solution of all problems (also art, etc.).
4. There are other worlds and rational beings of a different and higher kind.
5. The world in which we live is not the only one in which we shall live or have lived.
6. There is incomparably more knowable *a priori* than is currently known.
7. The development of human thought since the Renaissance is thoroughly intelligible (*durchaus einsichtige*).
8. Reason in mankind will be developed in every direction.
9. Formal rights comprise a real science.
10. Materialism is false.
11. The higher beings are connected to the others by analogy, not by composition.
12. Concepts have an objective existence.
13. There is a scientific (exact) philosophy and theology, which deals with concepts of the highest abstractness; and this is also most highly fruitful for science.
14. Religions are, for the most part, bad—but religion is not.

These are optimistic beliefs and conjectures. They go far beyond "what is possible *before* all new discoveries and inventions," as Wittgenstein requires of philosophy (1953:126). Unfortunately we know very little of Gödel's reasons for holding them. Undoubtedly the centerpiece is his belief that the world is rational. This key belief is an empirical generalization from his interpretation of human experience, but what is known of his arguments for it is hardly convincing. For instance, in the 1970s, he said to me things like the following:

9.4.18 Rationalism is connected with Platonism because it is directed to the conceptual aspect rather than toward the real [physical] world. One uses inductive evidence. It is surprising that in some parts of mathematics we get complete developments (such as some work by Gauss in number theory). Mathematics has a form of perfection. In mathematics one attains knowledge once for all. We may expect that the conceptual world is perfect and, furthermore, that objective reality is beautiful, good, and perfect.

9.4.19 The world (including the relationships of people) as we know it is very imperfect. But life as we know it may not be the whole span of the individual.

Maybe it will be continued in another world where there is no sickness or death and where all marriages are happy and all work (every career) is enjoyable. There is no evidence against the transmigration of the soul. If there is a soul, it can only unite with a body which fits it, and it can remember its previous life. There are many techniques to train the memory. A very imperfect life of seventy years may be necessary for, and adequately compensated for by, the perfect life afterwards.

As I recall this conversation, I expressed my doubts as Gödel spoke; 9.4.19 is a reconstruction of his answers to my questions about the perfection of the world and about the futility of another life that does not remember the previous one. Gödel smiled as he replied to my questions, obviously aware that his answers were not convincing me.

9.4.20 Our total reality and total existence are beautiful and meaningful—this is also a Leibnizian thought. We should judge reality by the little which we truly know of it. Since that part which conceptually we know fully turns out to be so beautiful, the real world of which we know so little should also be beautiful. Life may be miserable for seventy years and happy for a million years: the short period of misery may even be necessary for the whole.

9.4.21 We have the complete solutions of linear differential equations and second-degree Diophantine equations. We have here something extremely unusual happening to a small sample; in such cases the weight of the sample is far greater than its size. The *a priori* probability of arriving at such complete solutions is so small that we are entitled to generalize to the large conclusion, that things are made to be completely solved. Hilbert, in his program of finitary consistency proofs of strong systems, generalized in too specialized a fashion.

In the spring of 1972 Gödel formulated a related argument for publication in my *From Mathematics to Philosophy* (MP); in it he expressed his agreement with Hilbert in rejecting the proposition that there exist number-theoretical questions undecidable by the human mind (MP:324–325).

9.4.22 If it were true it would mean that human reason is utterly irrational [in asking questions it cannot answer, while asserting emphatically that only reason can answer them. Human reason would then be very imperfect and, in some sense, even inconsistent, in glaring contradiction to the fact that those parts of mathematics which have been systematically and completely developed (such as, e.g., the theory of 1st- and 2nd-degree Diophantine equations, the latter with two unknowns) show an amazing degree of beauty and perfection. In these fields, by entirely unexpected laws and procedures (such as the quadratic law of reciprocity, the Euclidean algorithm, the development into continued fractions, etc.), means are provided not only for solving all relevant problems, but also solving them in a most beautiful and perfectly feasible manner (e.g., due to the existence of simple expressions yielding *all* solutions). These facts seem to justify what may be called "rationalistic optimism."

Gödel's rationalistic optimism is an optimism about the power of human reason. Seven of Gödel's fourteen beliefs may be seen as special cases of