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Frege's Anti-Psychologism and the Problem of the Objectivity of Knowledge

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I hope to answer three questions with this paper. 1. What is psychologism?, 2. What is so bad about psychologism?, and 3. Why should we care? I shall start with a preliminary answer to each of these questions. This introduction shall be followed by a discussion of Gottlob Frege's views on psychologism, which will make up the bulk of the paper. I conclude with some thoughts on the relevance of Frege's anti-psychologism to contemporary philosophy of language and to the ethics of discourse.

What is psychologism? For starters, psychologism is the tendency to reduce an issue to psychological categories. In logic, psychologism represents a tendency to reduce the rules of logic to human psychology. Specifically, psychologism entails that the laws of logic are in principle a psychological phenomenon, and thus the foundations of logic are psychological. For example, one form of psychologism claims that laws of logic are a product of the way our brains are wired, and thus a topic of neuropsychology. Alternatively, one could claim that logic is best studied by the way humans respond to certain situations, and thus could be a topic of behavioristic psychology. Finally, logic might be grounded in the practices of a community, and

thus is to be found by studying the psychology of communities (sociology or anthropology).

What exactly is so bad about psychologism? According to critics, psychologism in logic destroys the objectivity of logic. If the objectivity of logic is undermined—so the critics reason—all knowledge claims are undermined and reason itself loses its legitimacy. Psychologism is still a live issue because it is unclear whether most philosophers of language today have resolved the issue.

Psychologism is a natural outgrowth of a thoroughgoing empiricism or naturalism that reduces all questions to empirical questions, questions of natural science. In Frege's time, psychologism was exemplified by the empiricism of John Stuart Mill. But despite the fact that Frege, the pioneer of analytic philosophy, rejected empiricism, much of analytic philosophy after Frege has been dominated by empiricism, naturalism, and consequently—it would appear—by psychologism. The revival of empiricism can be seen in Bertrand Russell's turn away from idealism, a turn which influenced many of the logical positivists of the Vienna Circle in the 1930's.¹ After World War II, empiricism continued to find defenders. W. V. O. Quine argued that all knowledge is grounded in the way our brains are wired. Wittgenstein, in his later writings, suggested that logic could be grounded in linguistic practice. Wilfrid Sellars argued that the logic of language might be understood through a study of behavioristic psychology. At first glance, these are paradigmatic cases of psychologism. Because psychologism was given such a bad reputation, analytic philosophers seem to prefer not to describe their view as psychologistic. Quine may be an exception, but even he has sometimes shied away from the term. (His paper "Epistemology Naturalized," when presented as a paper, had the subtitle "psychologism defended." The subtitle was dropped in the published version).² As Frege put the case against psychologism in terms of a wider attack on empiricism, the question arises as to how empiricist philosophers of language respond to Frege's criticisms. To answer this question, however, one must first understand Frege's criticisms. That is the primary task I set for myself in the remainder of this paper.

¹ For Russell's shift, see for example "On the Nature of Truth and Falsehood," (1910) in his *Philosophical Essays* (New York: Simon and Schuster, 1968) pp. 147-159 where he attempts to reduce truth and falsity to kinds of beliefs.

² See W. V. O. Quine, "Epistemology Naturalized," in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), 69-90.

Not all philosophers after Frege, however, have embraced empiricism. Karl Popper follows Frege in rejecting empiricism, and with it naturalism and psychologism. Another philosopher who followed Frege in rejecting naturalism and psychologism is Edmund Husserl, who gives arguments similar to Frege's in his *Logical Investigations*. Husserl argues that psychologism leads to "relativism," in one of the first uses of this term.³ The problem of establishing the objectivity of knowledge is just one side of a coin whose other side can be called relativism. Though I will not in this paper have a chance to examine in detail the views of Husserl, Popper, Quine, Russell, Sellars, or Wittgenstein, they all are touched upon by the issue of psychologism (and I hope to develop these points of contact in other papers, perhaps in my dissertation).

The connection between psychologism and relativism might be elucidated by considering the question "Does a statement apply to all people everywhere and at all times, or is it relative to a given person at a give time and place?" We live in a time where it is commonplace to hear "that may be true for you, but it isn't for me." Take an example where this slogan holds. One person thinks chocolate ice-cream tastes better than vanilla. Another thinks the reverse. The matter of which is the superior ice cream is relative, a matter of personal preference, and depends on one's internal constitution, or one's psychology. Frege agrees that in matters of taste (even in matters of artistic taste), what is true is subjective, determined by the constitution of the subject. Taste is inherently subjective, and thus is the proper object of psychology. But consequently, its study does not lead to objective knowledge about the ice cream. We do not learn the truth about the true ice cream: we only learn people's preferences.

To take a more controversial case, some have suggested that ethical norms are also grounded in human psychology. After all, they argue, ethical norms vary within and across communities. One person finds the legal right to have an abortion morally praiseworthy of a community; another finds this right blameworthy. One culture believes eating beef is morally harmless, another finds it morally repugnant. What one believes on these issues, they say, boils down to psychology, either of the individual or of the community. It thus might be studied empirically, by studying the preferences of people and the social practices of communities. This view of ethics thus might also be called "psychologistic" (based on the psychology of the individual or on the "psychology" of the community). Ethics, from an em-

³ See, for example, Edmund Husserl, *Logical Investigations*, translated by J. N. Findlay (New York: Humanities Press, 1970), 138ff.

pirical point of view, becomes a study of our individual or collective principles. With a thoroughgoing empiricism, there are no moral absolutes: all there is is what we do. This does not mean there can be no attempts to ground ethical norms upon certain agreed-upon principles. But these agreed-upon principles, if not established in some non-empirical way (by reference to God or objective moral values) must be simply taken for granted.

By contrast to aesthetics and ethics, in science we have a case where knowledge does not appear dependent on one's preferences or inner constitution. If a person believes that in Denver, Colorado, water will boil at a temperature of 99° C (suspecting it will boil at less than 100° because of the high altitude of Denver) and another believes that it will not boil below 100°, we have a dispute that concerns something objective. One does not resolve the dispute by saying simply "I guess it boils for you only at 99° but it boils for me at 100°." By looking at the thermometer the pair can decide who is right and who is wrong. What is different about science is that it concerns something existing independently of our minds: in our example, water, our thermometer, and Denver, Colorado. The laws of physics are true independently of us because they describe an independently existing reality. The world exists independently of our beliefs about it. For this reason, science is often considered the paradigm of objective knowledge. It is about facts, not opinions or preferences.

Frege argued that logic dealt with a world of ideal objects, that, though not physical, had just as much objectivity as physical objects. His defense of this claim consists largely in showing the untenability of reducing logic to something empirical or psychological. To explain this untenability, take for example (one used by Frege) the principle of self-identity, the principle that each object is identical to itself. One way to attempt to justify this principle empirically would be to go about testing objects one by one to see if they were identical to themselves. But this is to miss the point that it is a logical principle. The statement that "each object is identical to itself" is true by *definition* of the term "identical." It is not an empirical point, but a question about the meaning of the word. To justify this principle, the empiricist must consequently reduce the meaning of the word to the physical content of the brain of the one thinking of the word or to the physical use the word has in linguistic practice. In either case, this means reducing logical concepts to psychological objects. For Frege, subjecting the law of self-identity to human constitution or linguistic practice is to suggest that logic may be as whimsical as the trends of fashion. He writes: "just as what is fashionable today ceases to be fashionable after a

while and is not at present fashionable amongst the Chinese, so too the psychological laws of thought can only be laid down as authoritative with qualifications. This is certainly so if logic is concerned with things *being held as true* [*Fürwahrgehaltenwerden*] rather than with their *being true* [*Wahrsein*]! And these are what the psychological logicians confuse.”⁴

Frege argues that the psychological logicians do not distinguish between something being believed to be true from its being true. This confusion is a consequence of the naturalist ontology of empiricism, which reduces the laws of truth (as Frege sometimes calls logic) to the laws of belief (“the psychological laws of thought”). Frege writes:

... in the end truth is reduced to *holding as true* of individuals. In response I can only say: *being true* is quite different from *being held as true*, whether by one, or by many, or by all, and is in no way to be reduced to it. There is no contradiction in something being true which is held by everyone as false. I understand by logical laws not psychological laws of *holding as true*, but laws of *being true*. If it is true that I am writing this in my room on 13 July 1893, whilst the wind howls outside, then it remains true even if everyone should later hold it as false. If being true is thus independent of being recognized as true by anyone, then the laws of truth are not psychological laws, but boundary stones set in an eternal foundation, which our thought can overflow but not dislodge. And because of this they are authoritative for our thought if it wants to attain truth.⁵

The laws of logic, for Frege, exist independently of how we think. We don't determine the laws of logic. Instead, the laws of logic determine how we are to think if we are to achieve truth. Frege distinguishes the thought (something which is true or false) from the goings-on in our brain when we are thinking (which are neither true or false, but rather just physical occurrences). For Frege, the laws of logic are “eternal,” distinct from physical events in the brain or the actions of a community (which are temporal). For Frege, thoughts are things outside of the physical world that we grasp when we think. He distinguishes between the action that goes on in our brain and the thought that is grasped by these goings-on. For him “thoughts” are non-physical non-empirical entities. It may help to use the German “Gedanke”

⁴ Ibid., 202.

⁵ Ibid., 202-203.

to emphasize that Frege's term "thought" has unusual connotations. For Frege, Gedanken are not products of the mind or brain. He writes "As I do not create a tree by looking at it or cause a pencil to come into existence by taking hold of it, neither do I generate a thought (Gedanke) by thinking. And still less does the brain secrete thoughts as the liver does gall."⁶ The metaphors are elucidative. A tree is seen, a pencil is taken hold of: in such a way is a thought *grasped*. Frege goes on to say "thoughts are neither things in the external world, nor ideas." Frege has defined Gedanke such that they stand outside the traditional ontological categories of physical and mental. Frege writes:

A third realm must be recognized. Anything belonging to this realm has it in common with ideas that it cannot be perceived by the senses, but has it in common with things that it does not need an owner so as to belong to the contents of consciousness. Thus for example the thought we have expressed in the Pythagorean theorem is timelessly true, true independently of whether anyone takes it to be true. It needs no owner. It is not true only from the time when it is discovered just as a planet, even before anyone saw it, was in interaction with other planets.⁷

Most philosophers have balked at the idea of the "third realm," finding the idea spooky, as though grasping something in the third realm was somehow akin to entering "the twilight zone" (for those who remember the television series by this title).⁸ And later history did not help Frege as his term for "third realm" is "das dritte

⁶ Gottlob Frege, "Logic," an unpublished essay included in *The Frege Reader*, edited by Michael Beaney (Oxford: Blackwell Publishers, 1997), pp. 227-250, 237. I added the words in parentheses to indicate Frege's original. Frege's quote appears to be a response to the statement that the brain secretes thought as the liver does gall, a statement commonly attributed to the French physician Pierre Jean Georges Cabanis (1757-1808). In his *Rapport du physique et du moral de l'homme*, Cabanis writes that "the brain is a special organ, specially designed to produce thought, just as the stomach and intestines are destined to effect digestion," and again "the brain digests impressions and organically secretes thought."

⁷ Gottlob Frege, "Thought," translated by Peter Geach and R. H. Stoothoff in *The Frege Reader*, edited by Michael Beaney (Oxford: Blackwell Publishers, 1997), pp. 325-345, 337.

⁸ For those who do not remember Rod Serling's television miniseries airing in the late 1950's and early 1960's, it concerned people who were confronted by a strange phenomenon in the natural world that suggested to them there was something beyond it. The program would begin with a narrator (Serling) saying in an eerily normal voice: "There is a dimension beyond that which is known to man. It is a dimension as vast as space and as timeless as infinity. You unlock this door with the key of imagination. Beyond it is a dimension, not only of sight and

Reich.” Naturalists, physicalists, and materialists all rule out such a realm. Frege’s claim is that without such a realm, reason itself is undermined. The psychologistic logicians, in their inability to distinguish the truth of a thought from its physical expression, undermine the entire concept of truth, and consequently undermine their own claims to truth. The attack on psychologistic explanations is forcefully articulated in the following passage from the *Foundations of Arithmetic*:

A proposition may be thought, and again it may be true; let us never confuse these two things. We must remind ourselves, it seems, that a proposition no more ceases to be true when I cease to think of it than the sun ceases to exist when I shut my eyes. Otherwise, in proving Pythagoras’ theorem we should be reduced to allowing for the phosphorous content of the human brain; and astronomers would hesitate to draw any conclusions about the distant past, for fear of being charged with anachronism, with reckoning twice two as four regardless of the fact that our idea of number is a product of evolution and has a history behind it. It might be doubted whether by that time it had progressed so far. How could they profess to know that the proposition $2 \times 2 = 4$ was already in existence in that remote epoch? Might not the creatures then extant have held the proposition $2 \times 2 = 5$, from which the proposition $2 \times 2 = 4$ was only evolved later through a process of natural selection in the struggle for existence? Why, it might even be that $2 \times 2 = 4$ itself is destined in the same way to develop into $2 \times 2 = 3$!⁹

In this passage Frege tries to show the absurdity of trying to construe questions of arithmetic or geometry empirically. If mathematical and geometrical questions boil down to something empirical, then either they reduce to the contents of the individual’s brain who has the thought (so the Pythagorean theorem would depend upon the phosphorus content of the brain), or it is explainable by way of the practices of a society, in which case at another time and place, maybe in the future, it will be the case that $2 \times 2 = 3$. Note that it is not simply that it might be the case that people in another time and place believe that $2 \times 2 = 3$, but that *if* in fact they

sound, but of mind. It is a land of both shadow and substance, of things and ideas, and it lies between the pit of man's fears, and the summit of his knowledge. It is an area which we call ... the twilight zone” which would be followed by spooky music. More information can be found at <<http://www.scifi.com/twilightzone/serling/>> cited September 2002.

⁹ Gottlob Frege, *The Foundations of Arithmetic* (Opus cited), VI-VII^e.

do believe it to be the case, *then* it in fact *is* the case. If one rejects the possibility that logical truths exist outside of the way humans think or use language, then the truths of mathematics actually depend on the brain or on the practices of a community. The consequence of empiricism is that truth is grounded in belief, and this is exactly what Frege rejects: thus his claim, “a proposition can be thought, and again it may be true; let us never confuse these two things.”

On Frege's account, the empiricist is committed to the view that the validity of $2 \times 2 = 4$ is contingent on the brain or on human behavior. Indeed, the validity of the empiricist's belief in empiricism would also be so contingent. In sum, Frege argues that thoroughgoing empiricism is incapable of distinguishing the truth of a thought from the occurrences of thought. Consequently, they have undermined the ground of logic and of knowledge. With such arguments, Frege rejected empiricism.

But Frege by no means won the day. Analytic philosophy after Frege has resuscitated empiricism (and consequently psychologism). How has it done so? I cannot deal with all the possible responses here in depth, but let me here try to flesh out one possible line of argument against Frege, and how Frege would respond.

One way an empiricist might reply to Frege is as follows. The rules of logic really are just descriptions of the way human beings actually think. But contra Frege, the way human beings think does not change from time to time and from place to place. In fact, human beings do *not* think illogically. In defense of this claim, our logician might give the following example. If we read “ $1 + 1 = 3$ ” in a notebook, would we think that this really represented the thought of another human being who understood the concepts represented by “1,” “+,” “=,” and “3”? Would we not sooner think that the person was a child who did not yet understand, or perhaps (if the writing was that of an adult) that the symbols had different meanings than the ordinary ones (perhaps it was a mathematician using a non-standard arithmetic)? Human beings, the psychologistic logician might argue, *always* think logically. That is an empirical fact about human beings, as reliable as the law of gravity applies to all objects. Consequently, the absurd conclusion that the truths of mathematics are as culturally contingent as fashion trends does not follow.

A difficulty with this view is that human thought does not appear to be so regular. People are illogical all the time, or are at least apparently illogical. If all illogical expressions are only *apparently* illogical (really just misunderstood), the empiricist still has the task of explaining the difference between understanding and misunderstanding empirically, by reference either to the state of the brain of the individual

who misunderstood or to the actions of a community. In the former case, truth would be an issue of neuroscience. We would need something like a “truth-detector,” comparable to a lie-detector, but more sophisticated, because lie-detectors only claim to detect the *intention* by the individual to lie (and don't seem to very reliable at that). Our truth-detector would need to detect the falsity of a thought that was sincerely believed by the participant. Such a device has not been plausibly developed. Another option is explaining truth by way of the community practices. Thus $1 + 1 = 2$ would be deemed true because the community of teachers and scientists declares that $1 + 1 = 2$, and that 3 or any other such answer to $1 + 1$ is incorrect. But this does not explain *why* the community decided so. The view reduces truth to a decision that could be as arbitrary as what side of the road we should drive. And the truth would remain just as culturally contingent. Why it is that all “rational” communities have decided that $1 + 1 = 2$ is still unexplained.

One way to explain the behavior of a community is in evolutionary terms. Such an approach suggests that those ideas that survive and reproduce most successfully are superior. The view seems to have some plausibility as one might imagine that those people that followed the rules that we take to be logical will have negotiated their way in the world and had more offspring than those who did not. Our ancestors developed methods of counting their livestock, adding and subtracting, and the ones that had more evolutionary success passed down their methods that we now take to be objective. Again, however, such an explanation runs up against very counterintuitive consequences. The view is not that a true thought should ultimately succeed. *That* view, what I take to be the common-sense view, presupposes that there is a difference between truth and survival, so that in principle it is possible for someone to be wrong but nevertheless win out, evolutionarily speaking. Namely, it may be conceivable that in a time when counting livestock wasn't important, the geek who spent all his time trying to do sums did not propagate himself or his ideas well, but those who had a slicker, more casual approach to arithmetic did much better. An evolutionary approach, to be thoroughly empirical, identifies truth with fitness. Thus whatever survives is right for having survived. By this account, if Hitler had won the war, not only would his racial views be considered right, but if he managed to purge physics of Jewish contributions (like Einstein's theory of relativity), the “streamlined” “Aryan physics” would be right simply because it has survived and out-competed relativity theory, even though this competition had nothing to do with the physics about which the theory speaks, but rather with world events and politics. The fact that Hitler lost is beside the point. The

point is that our physics today is no better from Aryan physics from any absolute perspective. Our physics just happened to be the one that survived. Survival is all that there is to truth. Its superiority lies solely in the fact that it's what we accept to be true today, as culturally contingent as that is, and as subject to the fate of memetic evolution as a style of fashion. This is just what Frege takes to be absurd.

At this point, the defender of psychologism might bite the bullet and reply that in fact that the rules of logic *are* culturally contingent. Has it not been true in the past that what we took for granted as true in one time was later superseded? Einstein superseded Newton, refuting what we took to be true. And some now are even considering that we must revise the laws of logic to explain certain quantum phenomena like that demonstrated by the double-slit experiment. Indeed, even Frege's own system of logic was shown in the end to be contradictory by Bertrand Russell because of what is now known as Russell's paradox. Should that not serve Frege as a lesson that nothing is ever set in stone?

To answer such an objection, Frege might acknowledge (indeed he *did* acknowledge) that what we take to be a consistent logical system today might be found to be contradictory tomorrow. But if it is *found* to be contradictory, that implies that it was contradictory before, irrespective of the fact that it was not considered contradictory up until that point. For Russell to have discovered something about Frege's logic implies there is an objective fact there to be discovered. This fact has nothing to do with the phosphorus content of Russell's brain (though this content might or might not have helped Russell discover the fact). Neither does this fact depend upon taking a poll of the community to see if Russell was right. Russell was right prior to convincing the community, and his being right explains why the community came to recognize Russell's paradox, not vice versa. The way revolutions are effected actually reinforces Frege's claim because revolutions claim to be discoveries, not attempts to sway popular opinion to a new fashion.

In addition, revolutions are justified by argument, and argument presupposes commonly held logical rules. These logical rules must be in place for discourse about the proposed revolution necessary to be possible at all. Consequently, argument about changes in logic presupposes a more basic set of universally valid rules. Even when we talk about so-called "incommensurable paradigms," the very fact that we can talk about both paradigms in the same language means that there is a logic presupposed by both of them. Some have claimed that all modes of discourse are equally relative, and that there is nothing universally valid. But in making such a claim such a person has already presupposed a common ground by which one can

discuss “all modes of discourse.” To deny the common ground is to deny the ground upon which they can rationally assert something of these frameworks, and thus to engage in a performative self-contradiction. Namely, the meaning of their discourse undermines the grounds needed to rationally perform that discourse.

For Frege, logic consists of “the most general laws, which prescribe universally how one should think if one is to think at all.”¹⁰ For Frege, to question the universal validity of these laws while presupposing the very same laws is to undermine your own discourse, and is therefore irrational. He writes:

[T]his impossibility of our rejecting the law does not prevent us from supposing that there are beings who do reject it; but it does prevent us from supposing that these being are right in doing so; it also prevents us from doubting whether we or they are right. At least this goes for me. If others dare to recognize and doubt a law in the same breath, then it seems to me like trying to jump out of one's own skin, against which I can only urgently warn. Anyone who has once recognized a law of truth has thereby also recognized a law that prescribes how judgements should be made, wherever, whenever and by whom-ever they may be made.¹¹

For Frege, when one engages in discourse, one is presupposing laws of logic (here “law of truth”) in order to make the claim. The laws one presupposes in discourse cannot be placed in question within that discourse. One cannot rationally presuppose a law of logic and question or deny it at the same time. Such a claim rejects the conditions for its own possibility, and thus can be ruled out as irrational.

I wish to conclude by suggesting that the transcendental argument above concerning the conditions of the possibility of discourse has ramifications for all discourse, not just that concerning mathematics and science. Namely, to be able to disagree at all, both sides must share a mode of discourse, and this shared mode of discourse presupposes shared logical principles. Ethical or political disagreements might therefore be negotiated first by understanding the principles that are commonly shared. In mathematics this has been done by the attempt to ground mathematics in agreed upon logical principles. And though those principles are not universally agreed upon, discussion of those principles share an even more minimal set of logical rules.

¹⁰ Gottlob Frege, *Grundgesetze der Arithmetik* (Opus cited), 202.

¹¹ Gottlob Frege, *Grundgesetze der Arithmetik* (Opus cited), 204.

Ethical discourse, as I suggested above, also presupposes certain agreed-upon principles. When those are lacking, there must be agreed upon principles necessary to have a discussion of those principles. Philosophers such as Jürgen Habermas have attempted to work out some of the principles presupposed by those engaged in discourse.¹² These principles can be both logical (e.g. one cannot contradict one's self, hold contradictory views) and ethical (e. g., one must respect that the other may have different ends than one's own). Such work I believe is extremely valuable for those who wish to defend the value of the force of reason over the force of violence in handling political disputes.

In conclusion, Frege has argued that the value of reason is severely undermined when truth is relegated to a psychological phenomenon. Empiricism, by explaining the truth of statements psychologically, implies that discourse is ultimately just another means of manipulating the behavior of the individual. Such implications have been accepted and forcefully articulated by philosophers such as Nietzsche, who accepted (contra Frege) the consequences of empiricism and in doing so stripped reason of its credibility. Despite the fact that Habermas and others repudiate Nietzsche's interpretation of discourse, it is unclear whether his philosophy of language has freed itself from the grip of a relativism that would imply that even his own discourse, rooted in ethical principles, is at bottom just another friendly face masking a desire for pure physical survival and domination.

For Frege, empiricism undermines the legitimacy of reason. Insofar as modern philosophy of language is rooted in empiricist principles, the issue of psychologism needs to be addressed. To assess the contemporary situation, an analysis of the views of Quine, Russell, Sellars, and Wittgenstein is in order, with an eye towards their response to Frege's criticisms of empiricism. The fate of reason hangs in the balance.

¹² See, for example, Jürgen Habermas, "Discourse Ethics," in (find reference), especially the second half (pp. 65ff).