Philosophy of Mathematics and Rule-following

Up through PI §§137 Wittgenstein has tried to undermine the view that the fundamental role of words is to be the names of objects, the so-called «Augustinian view» of language.

Along the way, he has attacked the idea that ostensive definition is a free-standing activity. He has instead tried to show that it presupposes «stage-setting», i.e. the background of grammar.

He has tried to bring out that meaning is connected intimately with use.

He has tried to bring out that uses are manifold. There are many types of language-games.

He has tried to undermine the idea that indicative sentences are foundational, and that there is a unique analysis of these. (cf. The «builders»)

Has tried to undermine the idea that concepts must have essences. Many concepts are «family resemblance» concepts like «game».

Primary Reading

Philosophical Investigations, §§ 138-242

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Secondary Reading:

Cora Diamond, “Rules: Looking in the Right Place.” In D.Z. Phillips & Peter Winch, eds., *Attention to Particulars: Essays in Honor of Rush Rhees*, pp. 12-34. New York: St. Martin’s Press, 1989.

—“Wittgenstein, Mathematics, and Ethics: Resisting the Attractions of Realism.” In David Stern and Hans Sluga, eds., *The Cambridge Companion to Wittgenstein*, pp. 226-260. Cambridge: Cambridge University Press, 1996.

Juliet Floyd, «A Note on Wittgenstein's `Notorious Paragraph' about the Gödel Theorem"

(with Hilary Putnam), Journal of Philosophy 45, 11 (2000): 624-632.

—«Numbers and Ascriptions of Numbers in Wittgenstein’s *Tractatus*» in Future Pasts: The Analytic Tradition in 20th Century Philosophy» eds. Sanford Shieh and Juliet Floyd (Oxford, 2001) 145-192

— «Prose versus Proof: Wittgenstein on Gödel, Tarski and Truth", Philosophia Mathematica 3, 9 (2001): 280-30

More Secondary Reading

Peter Hylton, «Functions, Operations and Sense in Wittgenstein's Tractatus» in *Early Analytic Philosophy*, ed. W. Tait (Open Court, 1998) 91-106.

Michael Kremer, "Mathematics and Meaning in the *Tractatus*," *Philosophical Investigations 25* (2002), 272-303.

Saul A. Kripke, *Wittgenstein on Rules and Private Language: an Elementary Exposition*. Oxford: Blackwell, 1982.

John McDowell, "Meaning and Intentionality in Wittgenstein's Later Philosophy." In Peter A. French, Theodore E. Uehling, and Howard K. Wettstein, eds., *The Wittgenstein Legacy*, pp. 40-52. Notre Dame: University of Notre Dame Press, 1992.

— "Non-Cognitivism and Rule-Following." In S.H. Holtzman and C.M. Leich, eds., *Wittgenstein: To Follow a Rule*, 141-162. London: Routledge and Kegan Paul, 1981.

And More still

— “Wittgenstein on Following a Rule.” In Crispin Wright, ed., *Essays on Wittgenstein’s Later Philosophy*, pp. 324-363. Dordrecht: Reidel, 1984.

Erick Reck, «Frege’s Influence on Wittgenstein: Reversing Metaphysics via the Context Principe» in Tait, 123-186.

Crispin Wright, *Wittgenstein on the Foundations of Mathematics* (Harvard, 1980)

Regarding Mathematics

Wittgenstein himself emphasized in 1944 (in a biographical entry) that his “chief contribution has been in the philosophy of mathematics” (Monk 1990, 466)

We are lead astray by our expectations that language always functions in the same way, for example that all words are names that refer to objects

We must take note of how words like 'number', 'infinite', 'series', 'proof', etc. function when used in mathematics, i.e. describe their "grammar"

Knowledge in mathematics: Here one has to keep on reminding oneself of the unimportance of the ‘inner process’ or ‘state’ and ask “Why should it be important?” What does it matter to me? What is interesting is how we use mathematical propositions.

On Certainty §38, p. 7e

Mathematics in the *Tractatus*

- The context of Wittgenstein's discussion is given by the "Grundlagenkrise" in mathematics that was prompted by the development of mathematics in the 19th century

- We saw earlier three philosophical responses to this crisit: 1) Empiricism and Psychologism (Mill), 2) Formalism (Hilbert), and 3) Logicism (Russell and Frege)

- In Wittgenstein’s early work, the mathematical logic of Frege and Russell is a central inspiration, but the treatment of mathematics is not particularly central to that work. Wittgenstein is more interested in logic, thought, and language.

- TLP : Mathematics is ”a method of logic” (6.234) or ”a logical method” (6.2)

This sounds like logicism, but isn’t.

- The propositions of mathematics are equations, and therefore pseudo-propositions (TLP 6.2) i.e. similar to tautologies.

Equations state identities between names. But in a Begriffschrift, there cannot be two names for the same object. So all equations are uninformative. Since they are not even built up out of logical vocabulary, they aren’t even tautologies either. But there is something «ok» about them. (cf. Kremer article)

- The logic of the world, which is shown in tautologies by the propositions of logic, is shown in equations by mathematics. (6.22)

- What is essential about an equation is that it is not necessary to show that both expressions, which are connected by the sign of equality, have the same meaning; for this can be perceived from the two expressions themselves. (6.232)

- Wittgenstein was always critical of the (Platonist) view that numerals are signs that refer to numbers as their referents. He thinks construing numerals as the names of numbers is confused.

- TLP 6.031 The theory of classes is completely superfluous in mathematics.

- Both Frege and Russell identified numbers as objects, classes of classes. For example, 2 is the class of all 2-membered classes. The numeral ‘2’ refers to this object.

- TLP 6.021 A number is the exponent of an operation.

- What does this mean?

TLP 5.22 An operation is the expression of a relation between the structures of its result and of its bases.

TLP 5.23 The operation is what has to be done to the one proposition in order to make the other out of it.

So, if we start with P and apply the truth operation of negation to it, we get ~P. If we go on to apply the truth operation of negation to that base, we get ~ ~P.

We negate a proposition and its negation: We carry out the operation twice.

And so on…

Rules in TLP: 5.2523 The concept of successive applications of an operation is equivalent to the concept ‘and so on’.

TLP 6.0. The general form of a truth function is [p, ζ, N(ζ)].
This is the general form of a proposition.

TLP 6.001 What this says is just that every proposition is a result of successive applications to elementary propositions of the operation N(ζ).

What does it mean to be an ***exponent*** of an operation? It is repeating the operation ***n*** times.

«Daddy, give me 4 cookies!» (NB! «Taking a cookie» is NOT an operation!)

«I will not take a cookie from the cookie jar for you for you!» You get 0 cookies. Or,

«I take a cookie from the jar for you, and I take a cookie from the jar for you, and I take a cookie from the jar for you, and I take a cookie from the jar for you.»

So, I take 4 cookies from the jar for you. But «4» doesn't refer to the cardinal number 4. It merely indicates the repetition of a procedure 4 times.

The mathematical «proposition" «3+2=5» can be read as the result of taking a cookie, and taking a cookie, and taking a cookie. And then later taking a cookie and taking a cookie and then seeing how many cookies I end up with.

TLP 6.21-6.211 A proposition of mathematics does not express a thought.

Indeed in real life a mathematical proposition is never what we want. Rather, we make use of mathematical propositions only in inferences from propositions that do not belong to mathematics to others that likewise do not belong to mathematics. (In philosophy the question, «What do we actually use this word or this proposition for?» repeatedly leads to valuable insights.

The meaning of mathematical propositions, and the number terms in them, are connected with ***doing*** something. The propositions don't correspond to facts and the numerals don't name numbers.

I can repeat the operation of taking cookies out of the jar as many times as I want by just ***going on the same way***, and so on.

So we see that Wittgenstein's whole account of the truth functionality of language and of numbers and mathematics is tied to the intelligibility of this idea of «and so on.»

The Middle Period (1929-1935)

- W’s ”return to philosophy” in 1929 is preceded by his attending a lecture by the Dutch mathematician L.E.J. Brouwer on the Foundations of Mathematics.

- Brouwer was the main advocate of “Intuitionism”

Brouwer claims that our "primodial intuition of time" (cf. Kant) means our fundamental concepts of mathematics are acquired once we can recognize change.

We construct the mathematical world out of our concepts; it's not a matter of trying to bring our conceptual resources to bear on a mind-independent mathematical reality.

From this follows that mathematics cannot intelligibly comprehend the properties of infinite sets; only what can be shown to be provable can be justifiably asserted (there are no "undecidable propositions" in math); i.e., mathematics must be seen as resting on (finite) human activity.

- Wittgenstein is sometimes mistakenly thought to be an intuitionist. But there is some overlap between his thought and Brouwer’s, especially on finitude.

- In this period he also read works by Weyl, Skolem, Ramsey and possibly Hilbert

- Also discussions with Ramsey and members of the Vienna Circle centered on mathematics

- The main rival to intuitionism in the debate about the Foundations of Mathematics at this time was formalism, whose most important advocate was David Hilbert.

- According to the formalist mathematics is not, or need not be, *about* anything, or anything beyond typographical characters and rules for manipulating them.

- Mathematics is a science of formal systems. The essence of mathematics is the manipulation of characters or "symbols". A mathematical statement has no meaning but its symbols, regarded as physical objects, exhibit a structure that has applications. These are only restricted by the demand of consistency of the axioms of mathematics.

Wittgenstein on the Need for Foundations

- What does mathematics need a foundation for? It no more needs one, I believe, than propositions about physical objects—or about sense impressions, need an *analysis*. What mathematical propositions do stand in need of is a **clarification of their grammar**, just as do those other propositions.
- The *mathematical* problems of what is called foundations are no more the foundation of mathematics for us than the painted rock is the support of a painted tower.
- 'But didn't the contradiction make Frege's logic useless for giving a foundation to arithmetic?' Yes, it did. But then, who said that it had to be useful for this purpose?

- RFM VII §16

Language as a Calculus

- Calculus model: mathematics consists of self-contained calculi (mathematics also functions as a model for natural language)

- Mathematical propositions are to be understood as rules for these calculi.

- An equation is ”a rule of grammar” that fixes the meaning of symbols that occurr in it.

- A mathematical calculus does not need an extra-mathematical application. (*PR* §109; *WVC* 105)

- Similarly, language operates like a calculus with rules and uses sharply separated.

- Different systems of rules, and so different calculi, are possible. It is a matter of convenience and convention which one we adopt. Logic loses its all-encompassing «purity».

Later Wittgenstein’s Philosophy of Mathematics

- Language game view (in contrast to the earlier emphasis on ”propositions”)

- Mathematics can be seen as a ”motley of techniques of proof”

- There is a *family resemblance* for instance among what we call ”number” or ”mathematics”

- ”Meaning as use”: the language games of mathematics must be seen in connection with the use of their signs outside mathematics, as part of an activity in “the stream of life” or as part of a “form of life”

- A mathematical ‘proposition’ functions as if it were an empirical proposition “hardened into a rule”

Number is a family resemblance concept

—And I shall say: 'games' form a family.

And for instance the kinds of number form a family in the same way. Why do we call something a "number"? Well, perhaps because it has a—direct—relationship with several things that have hitherto been called number; and this can be said to give it an indirect relationship to other things we call the same name. PI §67

- So, natural numbers, real numbers, transfinite numbers, and imaginary numbers don't necessarily have a common essence: they make up a family resemblance concept.

- Wittgenstein hated the idea that «number» had an essence: and mathemeticians hate him right back!

And So is Mathematics

- Mathematics can be viewed as a "family of activities for a family of purposes" (RFM V§15) or as ”ein buntes Gemisch” («motley»):

- I should like to say: mathematics is a MOTLEY of techniques of proof.—And upon this is based its manifold applicability and its importance. RFM III §46

- I want to give an account of the motley of mathematics. RFM III §48

- but new types of language, new language-games, as we may say, come into existence, and others become obsolete and get forgotten. (We can get a *rough picture* of this from the changes in mathematics.) PI §23

- The centrality of application in mathematics:

I want to say: It is essential to mathematics that its signs are also employed in *mufti* [*im Zivil*].

It is the use outside mathematics, and so the *meaning* [*Bedeutung*] of the signs, that makes the sign-game into mathematics. (*RFM* V, §2, 1942) (cf. *LFM* 140–141, 169–70)

In a certain sense it is not possible to appeal to the meaning of the signs in mathematics, just because it is only mathematics that gives them their meaning. (*RFM* V, §16)

Continuity in Later Wittgenstein's Philosophy of Mathematics

- mathematical propositions" are *not real propositions*
- "mathematical truth" is essentially *non-referential*
- we *invent* mathematical calculi and we expand mathematics by calculation and proof
- though we learn from a proof that a theorem *can* be derived from axioms by means of certain rules in a particular way, it is *not* the case that this proof-path must pre-exist our construction of it (there to be *discovered*)

Problems with Rules in TLP -

- The account of number is *finitistic*. It can't account for transfinite numbers.
- He came to be suspicious of the «and so on» in a way that it doesn't even work in his own mind for finite numbers.

Problems with Rules in the Middle Period –

Are formal rules really as pervasive in our life with language to make it plausible that all of our various uses consist of self-contained calculi, or grammars, governed by rules at every step?

Challenges in the Remarks on Rule-Following – PI §§ 138-242

Keep the family resemblance critique of essentialism that precedes these remarks.

Show that ***even with arithemtic***, meaning is connected to use and practice.

The aim is **not** to show that grammar is «governed» by rules, or that uses/practices are «governed» by rules (they're not: cf. PI §68), but that even rule-following in arithmetic is part of a practice.

This would put a nail in the **Platonist** coffin once and for all (If Platonism doesn't work here, it won't work anywhere.)

«Platonism»

”I believe that mathematical reality lies outside us, that our function is to discover or observe it, and that the theorems which we prove, and which we describe grandiloquently as our ’creations,’ are simply the notes of our observations.” G. H. Hardy, *A Mathematician's Apology* (London 1941)

- There is a realm of necessary facts independent of human thought (the ”world of mathematical objects”)
- Mathematical propositions describe this realm
- These facts may ***outrun*** our ability to get access to them by proofs (the existence of ”undecidable propositions” in mathematics)

Exampels of modern day Platonists in philosophy of mathematics:

- Frege (but cf. article by Erick Reck)
- Cantor
- Hardy
- Gödel

W thinks Platonism is misleading or even dangerous

Why?

- It distorts our understanding of what mathematics and mathematical activity is
- It gives mathematics a false inexorability and refuses to see it as a human activity and as dependent on what human beings actually do.

Goldbach's conjecture: "Every even integer greater than 2 can be expressed as the sum of two primes."

Is this a mathematical proposition?

Hardy: "Goldbach's conjecture is a proposition, and that is why I can believe it is true". (cf. BB, 14)

Wittgenstein:

When Hardy says he believes Goldbach's theorem, I would ask him what his belief in this theorem led him to. What does he do? It may have led him to attempts to prove it, which shows that *some* meaning attaches to the theorem inasmuch as these activities would not have been caused by another theorem.

- It is misleading to consider Goldbach's conjecture to be a mathematical proposition because we do not know how to decide it, i.e., we do not know how to make it either proved (true) or refuted (false)
- “What ‘mathematical questions’ share with genuine questions, is simply that they can be answered.”

- Wittgenstein wants to combat the Platonist picture that mathematics concerns "the natural history of mathematical objects" and that mathematics is a kind of natural science dealing with infinite extensions and other ”mysteries of the mathematical world”.

- His "anthropological perspective" on mathematics is a part of this.

- But how are we then to understand such unproved mathematical "propositions" as Goldbach's conjecture?
- For instance as "signposts for mathematical research, stimuli for mathematical constructions"

Dummett’s Wittgenstein

- Wittgenstein’s philosophy of mathematics represents an anti-realism and a ”*full-blooded conventionalism”*

- This means that for him the logical necessity of any necessary truth is "the direct expression of a linguistic convention”

- ”Necessity” is just an arbitrary decision or convention to treat certain propositions as necessary

Preliminary Thoughts on Rules

- Rules can be prescriptive, descriptive, and constitutive
- There is a difference between a rule and its expression (a rule is not necessarily tied to a particular formulation)
- Rules are general, often governing an unspecified multiplicity of occasions (cf. orders or commands)
- There is a difference between following a rule and believing one is following a rule
- There is a difference in following a rule and merely acting in accordance with a rule (a rule is not a cause, but a reason for acting – intentionality is involved)
- ”Rule” is perhaps a family-resemblance concept?

- The formulation of a rule always seems to leave room for doubt about whether a person actually follows it (rules always seem to have loop-holes).

- The interlocutor’s worry: does this not make meaning indeterminate?

- This worry seems to get even more fuel from the kind of paradox Wittgenstein introduces in PI §82-84, and develops in §185:

The Parable of the “Aberrant Child”

PI § 185:

[A]t the order "+ 2" [the pupil] writes down the series of natural numbers.—Let us suppose we have done exercises and given him tests up to 1000.

Now we get the pupil to continue a series (say + 2) beyond 1000—and he writes 1000, 1004, 1008, 1012.

We say to him: "Look what you've done!"—He doesn't understand. We say: "You were meant to add two: look how you began the series!"—He answers: "Yes, isn't it right? I thought that was how I was meant to do it."—Or suppose he pointed to the series and said: "But I went on in the same way."—It would now be no use to say: "But can't you see....?"—and repeat the old examples and explanations.—In such a case we might say, perhaps: It comes natural to this person to understand our order with our explanations as we should understand the order: "Add 2 up to 1000, 4 up to 2000, 6 up to 3000 and so on."

PI § 186:

> How is it decided what is the right step to take at any particular stage?—"The right step is the one that accords with the order—as it was *meant*."—So when you gave the order +2 you meant that he was to write 1002 after 1000—and did you also mean that he should write 1868 after 1866, and 100036 after 100034, and so on—an infinite number of such propositions?—"No: what I meant was, that he should write the next but one number after every number that he wrote; and from this all those propositions follow in turn."

—But that is just what is in question: what, at any stage, does follow from that proposition. Or, again, what, at any stage we are to call "being in accordance" with it (and with how you then *meant* it—whatever your meaning it might have consisted in). It would almost be more correct to say, not that an intuition was needed at every stage, but that a new decision was needed at every stage.

This seems to lead to a skeptical paradox:

This was our paradox: no course of action could be determined by a rule, because every course of action can be made out to accord with the rule. (PI § 201)

Formal logic and mathematics are paradigms of rule-following activity, indeed they seem to be constituted by rules. They are often also given as examples of human practices where our knowledge can be certain. But how can we be sure that we follow a rule correctly? If the skeptic's worry gets a foothold here, then general skepticism may seem to follow.

Are rules themselves just ink-marks, sounds or bodily movements? What is it, so to speak, behind the rule that gives the signs life?

Wittgenstein considers different answers to the rule-skeptic:

- Mentalism (psychologism)
- Mechanism (dispositionalism) -
- Interpretationalism
- Platonism

Mentalism

Claim: the understanding or grasping of a rule is (essentially) a mental state or process (see e.g. PI§§ 139, 146, 152-154, 205, 210)

- §145 :...let us suppose that after some efforts on the teacher's part he continues the series correctly, that is, as we do it. So now we can say he has mastered the system.—But how far need he continue the series for us to have the right to say that? Clearly you cannot state a limit here.

- § 146: Suppose I now ask: "Has he understood the system when he continues the series to the hundredth place?" Or—if I should not speak of 'understanding' in connection with our primitive language-game: Has he got the system, if he continues the series correctly up to *this* point?—Perhaps you will say here: to have got the system (or, again, to understand it) can't consist in continuing the series up to *this* or *that* number: *that* is only applying one's understanding. The understanding itself is a state which is the *source* of the correct use.

The temptation is to say that understanding ***cannot*** consist in the *application* of, say, a formula, but is actually a mental state or process ”behind” the rule-following behaviour. Understanding must consist in some superlative fact about me. And a mental state seems to be a good candidate for that fact. But it really solves nothing.

Just for once, don't think of understanding as a 'mental process' at all!—For *that* is the expression which confuses you. Instead, ask yourself: in what sort of case, in what kind of circumstances, do we say, "Now I know how to go on"? I mean, if the formula has occurred to me?—

In the sense in which there are processes (including mental processes) which are characteristic of understanding, understanding is not a mental process.

(A pain's increasing or decreasing, listening to a tune or a sentence — mental processes.)

PI § 154

Moral of the grammatical investigation of ”understanding” in §§143-184:

- Understanding need not be neither a mental state, nor a process. We can instead think of it as an ability
  - the utterance “Now I know how to go on!” is not a report on the occurrence of a mental process (or on the obtaining of a mental state) of understanding
  - it is instead akin to a signal of understanding (a manifestation, *Äusserung*) indicating the dawning of an ability
  - NOTHING **has to** ”go on in the mind” for someone to be justified in uttering this sentence - the criterion is that he can actually go on (PI §150, §§179f.).

However, questions remain:

- How does a rule determine what does (and what does not) accord with it?
- How am I able to obey a rule that covers an indefinite amount of cases?

Mechanism/Dispotionalism

148. But what does this knowledge [of the rule of a series] consist in? Let me ask: *When* do you know that application? Always? day and night? or only when you are actually thinking of the rule? do you know it, that is, in the same way as you know the alphabet and the multiplication table? Or is what you call "knowledge" a state of consciousness or a process—say a thought of something, or the like?

Claim: rule-following means that a rule is encoded in the neural system, and manifested as a disposition to act in a certain way:

149. If one says that knowing the ABC is a state of the mind, one is thinking of a state of an apparatus of the mind (perhaps a state of the brain) by means of which we explain the *manifestations* of that knowledge. Such a state is called a disposition.

This would mean that rule-following functions in a machine-like manner:

> If we know the machine, everything else—that is the movements it makes—seem to be already completely determined. (PI §193)

However, the mechanistic view turns reasons into causes, understands the relation between a rule and the action it guides as ***external***.

- The interlocutor's objection (PI §195):

  "But I don't mean that what I do now (in grasping a sense) determines the future use *causally* and as a matter of experience, but that in a *strange* way, the use itself is in some sense present."

Wittgenstein's answer:

—But of course it is, 'in *some* sense'! Really the only thing wrong with what you say is the expression "in an odd way". The rest is all right; and the sentence only seems odd when one imagines a different language-game for it from the one in which we actually use it. …

196. In our failure to understand the use of a word we take it as the expression of an odd *process*. (As we think of time as a strange medium, of the mind as an odd kind of being.)

Some Problems with Dispotionalism

- If dispositions are brain states, i.e., causal dispositions, it is hard to see how they can account for normative, intentional action.

- If they are described in intentional terms, then the recourse to dispositions does not explain anything (it says: I am (or my brain is) disposed to go on in this way rather than that, *because* I follow the rule!)

Interpretationalism

Claim: The expression of a rule in itself is nothing but sounds or ink-marks or bodily movements. So every action according to a rule must be an interpretation, and this settles the right or wrong way of acting.

- An interpretation is supposed to provide the missing content of the rule, but this leads to a regress: every interpretation can be further interpreted; e.g. every beginning of a series is viable to a reinterpretation.

> "But how can a rule teach me what I have to do at this point? After all, whatever I do can, on some interpretation [Deutung], be made compatible with the rule."—No, that's not what one should say. Rather, this: every interpretation hangs in the air together with what it interprets, and cannot give it any support. Interpretations by themselves do not determine meaning. (PI §198)

Platonism

A picture that naturally gives itself when we reflect upon the nature of (especially mathematical) rules: the rule is some kind of abstract entity that *already contains* all the possible applications or steps that can be taken

"Rules as rails": not a causal, but *logical* necessity

Problem: How are we to grasp the infinite?

218. Whence the idea that the beginning of a series is a visible section of rails invisibly laid to infinity? Well, we might imagine rails instead of a rule. And infinitely long rails correspond to the unlimited application of a rule.

219. “All steps are really already taken” means I no longer have any choice. The rule, once stamped with a particular meaning, traces the lines along which it is to be followed through the whole of space.

Incoherence of the Platonist View

Even if rules had some kind of "Platonic" existence, this would not guard us from error in applying them (PI §213-214)

- Because this application is dependent on some kind of intuition or decision which is in itself in principle open to interpretation.

Platonism is only a "mythological description", a picture that can give no further content to the idea of logical compulsion (PI §§220, 221)

Platonism is, at bottom, a kind of "super-interpretationalism" that tries to block the regress of interpretations by applying to the actual "meaning" of the rule.

What one wishes to say is 'Every sign is capable of interpretation; but the meaning mustn't be capable of interpretation. It is the last interpretation.' (BB, 34)

A Skeptical Solution?

Saul Kripke: *Wittgenstein on Rules and Private Language* (1982)

- The rule following paradox in PI is "the most radical and original sceptical problem that philosophy has seen to date" (p. 60)
- Wittgenstein presents "a sceptical solution to a sceptical problem“

- Normativity emerges if we consider the individual in relation to a larger community of language-users.

  - The background of agreement in a community is the criterion by which we judge if someone has followed a rule correctly or not. The same applies to concepts generally.

- Truth-conditions are replaced by *assertability conditions* (i.e. the meaning of a sentence is given by the conditions under which it can be asserted).

The Skeptical Solution

- Normativity emerges if we consider the individual in relation to a larger community of language-users.
- The background of agreement in a community is the criterion by which we judge if someone has followed a rule or not.
- Truth-conditions are replaced by *assertability conditions* (i.e. the meaning of a sentence is given by the conditions under which it can be asserted).
- The solution is skeptical since it is the contingent fact of widespread agreement that decides whether something is to be accepted as following a rule or not following a rule.
- In truth, there is no fact of the matter.

Cf. PI §202

And hence also 'obeying a rule' is a practice. And to think one is obeying a rule is not to obey a rule. Hence it is not possible to obey a rule 'privately': otherwise thinking one was obeying a rule would be the same thing as obeying it.

Communitarianism/constructivism

- Rules are constituted by what a community of rule-followers actually does: normativity is *constructed* from something non-normative
  - cf PI §206-207
- Rules are *grounded* in a communal/social practice (institution, etc.)
  - cf PI §197-199
- Meaning and rules are *essentially* social: we cannot make sense of private rule-following
  - Cf PI § 202

Support for the Communitarian View

199. Is what we call "obeying a rule" something that it would be possible for only one man to do, and to do only once in his life?—This is of course a note on the grammar of the expression "to obey a rule".

It is not possible that there should have been only one occasion on which someone obeyed a rule. It is not possible that there should have been only one occasion on which a report was made, an order given or understood; and so on.—To obey a rule, to make a report, to give an order, to play a game of chess, are customs (uses, institutions).

To understand a sentence means to understand a language. To understand a language means to be master of a technique.

Problems with Communitarianism

- How do we determine what a community actually accepts as correct?
- How do we delimit the community?
- In what sense does this agreement *explain* rule-following behaviour and the notion of a rule? What makes the community right?
- Can the community's practices be identified *independently* of reference to the actual following of specific rules? (i.e., reference to communal practices does not seem to indentify anything *distinct* from rule-following behaviour, and what's normative there?)
- Can the normative be constructed out of something non-normative?

"In fact, of course, we are not just trained to go '446, 448, 450', etc. and other similar things; we are brought into a life in which we rest on, depend on, people's following rules of many sorts, and in which people depend on us: rules, and agreement in following them, and reliance on agreement in following them, and criticizing or rounding on people who do not do it right – all this is woven into the texture of life; and it is in the context of its having a place in such a form of human life that a 'mistake' is recognizably that." (Diamond 1989, 27–8)

Conclusions

- There is a temptation to construe Wittgenstein’s remarks as a theory of rule-following or as an analysis of the concept of a rule.
- However, we could, as Wittgenstein himself does, characterize these remarks about rules as notes ”on the grammar of the expression ’to follow a rule’” (§ 199).
- The investigation is purely descriptive, and the aim is to dispel misunderstandings that are deeply rooted in our ways of speaking about human beings and actions. PI § 217:
  - "How am I able to obey a rule?"—If this is not a question about causes, then it is about the justification for my acting in *this* way in complying with the rule.
  - Once I have exhausted the justifications I have reached bedrock, and my spade is turned. Then I am inclined to say: "This is simply what I do."
  - (Remember that we sometimes demand definitions for the sake not of their content, but of their form. Our requirement is an architectural one; the definition a kind of ornamental coping that supports nothing.)

Moral

- We should resist the temptation of an «external» point of view
  - i.e. to presuppose that rules and rule following must be analyzable in terms of something more basic: a mental process, logical compulsion, community agreement…
- What ”makes it true” that I am following one rule instead of another is simply that I am following the rule

- Don’t say: Meaning is use. Say rather: Look at the use and you may see the meaning

- 241. "So you are saying that human agreement decides what is true and what is false?"—What is true and false is what human beings *say*; and it is in their *language* that human beings agree. That is agreement not in opinions, but rather in form of life.

Wittgenstein’s “account” is

- non-reductionist (does not attempt to explain rule-following in terms of something else)
- non-systematic (it is not a general account or systematic theory about rule-following)
- contextual (what a rule is and how it functions is determined by the context, the complex surroundings, in which it occurs)

"Wittgenstein’s quietism is not a refusal to engage in substantive philosophy in the face of what everyone has to accept as genuine problems. It is an activity of diagnosing, so as to explain away, some appearances that we are confronted with genuine problems. The supposed problems disappear, leaving no need for theory construction to make things 'less mysterious.'” (McDowell 2009, 371)