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Lebensform as Niche Construction: an Evolutionistic Reading of Wittgensteinian Hinges

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Abstract Wittgenstein's notion of "form of life" (*Lebensform*) has a controversial exegesis throughout its philosophical tradition. I aim to analyze this notion through the lens of niche-construction theory, a framework in the evolutionary sciences that considers how the way organisms actively modify their environment drives their evolutionary trajectory. I will argue that this framework can shed light on Wittgenstein's notion of *Lebensform* in a way that captures the source of its exegetical ambiguity. By especially analyzing how Wittgenstein treats "common sense" or "hinge" propositions, I will argue that the concept of *Lebensform* tries to capture a need for structure that characterizes the human animal as such, but is necessarily realized in multiple ways, due to the multiplicity of the environments where human beings live in.

Keywords: form of life, niche construction, Wittgenstein, language-games

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0. Introduction

The notion of *Lebensform*, normally translated as "Form of life", does not appear frequently in Ludwig Wittgenstein's later work. However, the term, partially because it is underexplained, and partially because it appears in apparently significant passages of his later writings, received quite a bit of attention in Wittgensteinian scholarship. In his *Philosophical Investigations* (PI), for instance, the notion of *Lebensform* appears importantly linked to that of language-game, a very prominent concept in Wittgenstein's late philosophy. In PI, Wittgenstein claims: «[T]he notion of language-game is meant to bring into prominence the fact that the speaking of a language is part of an activity, or a form of life» (PI: 23). At the same time, compared to the discussions of language-games and the normativity of language, this term is never explored properly. This tension between the apparent centrality of this term and the lack of a clear definition led to many different interpretations of the concept.

Boncompagni (2015, 2022) maps out the interpretations of *Lebensform* by identifying different pairs of conceptual coordinates in apparent odds with one another: (1) empirical vs transcendental: whether *Lebensform* is an empirical phenomenon, or a formal requirement for determined phenomena to occur; (2) pluralistic vs monistic: whether there are different *Lebensformen* across populations or one *Lebensform* shared by all language-speakers; (3) naturalistic vs cultural: whether *Lebensform* refers to a characteristic of cultural practices or of human beings as living creatures.

Setting these theoretical coordinates allows Boncompagni to identify a wide variety of positions within Wittgenstein's exegesis. The term may refer to the specific and observable linguistic practices of different groups (Black 1978, Malcolm 1982); a feature of the genus *Homo Sapiens* as a speaking animal (Garver 1994, Hunter 1968); formal conditions of possibility for experiencing the world (Gier 1980, Williams 1973); or universally shared (pre)linguistic lenses all human beings possess (Baker 1984, Lear 1999). I propose an interpretation of *Lebensform* that reconciles such conflicting perspectives – or rather, their underlying intuitions. To that end, I interpret some of Wittgenstein's remarks in *On Certainty* (OC) through the lens of the concept of *niche-construction*. In section 2, I introduce niche-construction theory and propose that language-games are cultural niches. In section 3, I review the role of commonsense beliefs in Wittgenstein as sources of certainty and as "hinges", as foundations of the sociocultural infrastructure that underlies everyday human life. In section 4, I will counter relativistic criticisms of Wittgenstein while further linking niche-construction and language-games. In section 5, I propose to explain the notion of *Lebensform* and that of niche construction, as representing Wittgenstein's effort to account for the conceptual ambiguity of language-games. In section 6, I clarify in what way my interpretation of the concept of *Lebensform* in Wittgenstein contrasts with others, while still being coherent with Wittgenstein's overall philosophy.

1. The niche-construction framework: language-games in an evolutionary perspective

In ecology, a niche is the relation between an organism and its ecosystem (Pocheville 2015). The term *niche-construction* denotes the process by which organisms actively modify their relation with the environment through metabolism, activities and choices (Odling-Smee *et al.* 2003, Odling-Smee 2024). This theory was meant to complement standard evolutionary theory, which sees evolution and natural selection as a process dictated by environmental changes organisms are mere patients of. Consider, as an example, a population of beavers developed a genetic immunity to a pathogen in the river where they live. They, build a dam, blocking the river and depleting the pathogen's presence. This niche enables their descendants to lack that immunity and live nonetheless. Here, the genetic changes typical of natural selection were a result of the beavers' practices: their evolutionary trajectory is determined by their niche construction, by their own action.

On this view, human beings are especially competent niche constructors. Cases of non-human cultural and technological niche-construction includes tool use and imitation-based learning across different non-human animals (Laland & O'Brien 2011, Boesch & Boesch-Acherman 2000, Haley 1978, Rolando & Zunino 1992, Hirata 2009, Whitehead & Rendell 2015). However, human niche construction is distinct due to its cumulative character (Mesoudi & Thornton 2018). The complex physical and cultural infrastructures created by human beings enable a particularly efficient form of material and cultural inheritance, the «storage and transmission of information by communication, imitation, teaching and learning» (Peedicayil 2001). Sterelny (2012) argues that niche construction processes enabled richer learning environments and more complex cultural inheritance, one of the most crucial factors in the human evolutionary trajectory.

Language is also a key aspect of human niche-construction. Pinker (2003) argues that language is an adaptation for niche construction, as it facilitates problem-solving, information processing, and cause-and-effect reasoning. In contrast, Clark (2006) argues that language is itself a niche. It is a shared and built socio-material structure, learned by individuals yet mastered and practiced in shared spaces, so important to us that human beings developed a neural-based predisposition to learn it and speak it. Through language,

human beings can engage more sophisticatedly with others and their environment, and also objectify, reflect upon and knowingly engage with their own capacities for reason and self-control.

I argue that Wittgenstein's concept of *Lebensform* is best understood through niche-construction theory, as an attempt to understand language as grounded in concrete, situated practices. Niche-construction theory and its application to linguistic practices support an interpretation of Wittgenstein's *Lebensform* that accounts for its ambiguous meaning. I argue that language-games can be seen as adaptations to the world, in line with Pinker; and as niches of their own, in line with Clark. I now turn to exemplary cases of language games crucial to human everyday life – "commonsense" beliefs, which Wittgenstein investigates in OC.

2. Commonsense belief systems as niches

OC is a collection of remarks dealing with the nature of knowledge and certainty, examining how language users experience them and the logical and practical conditions for people to claim knowledge and certainty. Much of these reflections encompass commonsense propositions, regarding facts that are largely taken for granted within a community – such as the existence of physical objects, that of other minds, or of the Earth.

Wittgenstein argues that certainty differs from knowledge (OC: 8, 84, 86). Claiming to know something requires being a part of a consolidated language game: such action must respect publicly available criteria consolidated within a social practice – i.e., reasons or evidence for that claim (OC: 21) – and to find out whether she possesses the knowledge in question - conforming to a consolidated agreement within the language game. To know how many pillars there are while building something, for instance, there must be an accepted way of identifying their number (OC: 564-565). For Wittgenstein, propositions such as "Here's a hand" and "The world existed for a very long time" do not meet the necessary criteria for knowledge. The difference between knowledge and certainty is that "to (not) know" is correctly used to delineate a relation between the speaker and a (set of) fact(s) (OC: 90), while certainty is subjective, "my own" (OC: 174, 245, 404). One should not conflate a psychological state (certainty) with a state whose meaningfulness also depends on available facts and an agreed-upon way to confirm them (Coliva 2010).

How do we regard propositions such as "here's my hand" or "the Earth has existed for a very long time"? And why, despite appearing as empirical propositions, they can be objects of certainty but not knowledge? Coliva argues that such propositions are "grammatical" (2010: 149-179), constitutive rules of ordinary language games: one cannot doubt them in ordinary circumstances, just as one cannot doubt about how chess pieces are supposed to move while playing the game (OC: 346). Ordinarily, it is senseless to doubt that "I have two hands" in the same way that it is senseless to doubt that some objects are called "slab" and others "pillar" while building a house - if one were to doubt them, playing the game, acting would be impossible. As Wittgenstein writes:

> 340. We know, with the same certainty with which we believe any mathematical proposition, how the letters A and B are pronounced, what the colour of human blood is called, that other human beings have blood and call it "blood".
> 341. That is to say, the questions that we raise and our doubts depend on the fact that some propositions are exempt from doubt, are as it were like hinges on which those turn.
> 342. That is to say, it belongs to the logic of our scientific investigations that certain things are indeed not doubted.

> 343. But it isn't that the situation is like this: We just can't investigate everything, and for that reason we are forced to rest content with assumption. If I want the door to turn, the hinges must stay put (43-44).

Commonsense propositions are like hinges: they "stand fast" (OC: 141-144, 247-248, 411) at the basis of our entire belief system (OC: 115, 411, 603), enabling an incommensurable number of otherwise unattainable activities. These propositions are "grammatical" as they explicate the underlying rules of everyday language-games, of the activities carried out thanks to them. Even doubting, as a language-game, needs grounding to be meaningful at all (OC: 150): one cannot doubt whether "this is my hand" without mutual agreement on what the word "hand" means. Their grammatical function derives from the linguistic practices that depend on them (OC: 141-142). They cannot be ordinarily doubted because they are necessary for ordinary language-games to be meaningful and be performed[1]. «I do not explicitly learn the propositions that stand fast for me. I can discover them subsequently like the axis around which a body rotates. This axis is not fixed in the sense that anything holds it fast, but the movement around it determines its immobility».

Language-games, I argue, are niches. A niche is the role an organism plays in its environment; niche construction is the active modification of the world where organisms live and that enable or facilitate their everyday life. Language is both an adaptation to the environment that enables a wide range of activities; and it is itself a niche, a structure built by (human) animals whose functionality depends on how they use it. Each specific language-game is a niche, an infrastructure built by human beings that enables everyday practices to take place - as those listed in PI (23) and that are, to some degree, stably present across human communities. This infrastructural role, clearest in commonsense propositions, results from and guides and scaffolds human activity (OC: 211). Their content cannot be considered independently from their grounding, normative function in their everyday context of use.

The overlap between the notions of niche and language-games is even clearer by noting how niches are *inherited*. The environmental modifications carried out by a population will likely stand for the generations to come: the beavers' dam remains when future generations are born. Cultural inheritance works as a kind of ecological inheritance, as the adaptation of organisms to their environment will also depend on their integration to the persisting practices of their predecessors (Odling-Smee & Laland 2011). Cultural and linguistic practices can be transmitted through training, imitation, and teaching from the older generations – but those practices are not different in function from physical modifications of the environment. In Wittgenstein's words. «But I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied of its correctness. No: it is the inherited background against which I distinguish between true and false» (OC: 94).

Language-games occur in the wider context of the practices inherited from previous generations of speakers. Commonsense propositions are infrastructural language-games: it is normally senseless to doubt them, as they are at the core of the belief system our everyday actions refer to. They ground the cultural niche that we live in, and without them our life would not be the same.

[1] To further clarify: the function of commonsense propositions is not foundational in a metaphysical sense, but because they are practical assumptions for a practice to be carried out. The proposition "The bishop moves diagonally" is a necessary practical assumption to play chess, but it may be considered "foundational" only insofar as the practice of playing chess is concerned.

3. Cultural variance and human specificity in language-games

While commonsense propositions cannot be sensefully doubted from within their language-game, this does not mean that their truthfulness cannot be judged at all. Wittgenstein mentions the proposition «nobody has ever been to the moon» (OC: 106, 111, 117) as an expression of certainty; this proposition is now false. I.e., it is only within "ordinary" language games that commonsense propositions are exempt from doubt. Furthermore, if "here's a hand" plays the same function as "this is called a slab", then many commonsense propositions are arguably arbitrary, relying on the mere agreement between speakers.

This led many to read Wittgenstein's philosophy as relativistic. Wittgenstein may be accused of conceptual relativism: if the meaning of propositions derives from language-games, and language-games themselves vary across contexts, then the meaning of propositions can only be understandable from within that context. Wittgenstein may also be accused of epistemic relativism: if the role and eventual truth value of propositions can only be understood "from within" language-games, then we are not justified to judge them. I now defend Wittgenstein from relativistic accusations, drawing from Hinman (1983), Saari (2005) and Kusch (2016). Addressing these accusations will, in turn, reinforce my argument that language-games can be considered niches.

One key aspect of Wittgenstein's thought is the situatedness of language-games, their being grounded in specific contexts of interaction. The notion of family resemblance (PI: 65-67) that Wittgenstein uses to describe language-games highlights that linguistic practices have differences and similarities across contexts. There are no hard borders between language-games: thanks to their similarities and differences, we can compare and consider language games as such. These traits are not clear-cut, but a matter of degree: no language-game is an island, and propositions within it can be judged "from outside in" insofar as the language-game is aptly recognized.

Furthermore, not all commonsense propositions are of the same kind: hinge propositions can be assessed and doubted depending on their content and the context of use. That water boils at 100° degrees is an object of certainty across cultures for whom this proposition is a hinge, but so can "God exists". Not only these propositions can work as hinges within the same community: because of their different content they are not equally targets of skepticism. That water boils at 100° degrees is a scientific description of a natural phenomenon independent from our practices, and disagreements regarding its truthfulness can affect their way of measuring at best; the same cannot be said for the proposition "God exists". However, it is not the truthfulness of these propositions, but their use within a practice that makes them meaningful.

Finally, not only language-games can be compared thanks to family resemblances: so can their extra-linguistic context and the human communities that "play" them. Some cultures might be more epistemically accessible due to a higher degree of similarity between them. Studying language-games then involves a nuanced understanding of specific linguistic practices within their wider socio-cultural context, and comparing their functions across communities without bending them to our own epistemic standards – a predominant theme in Wittgenstein's Remarks on Frazer's The Golden Bough (2018).

Despite commonsense propositions possessing a grammatical function, they are not entirely exempt from doubt: both language-games and the situated human communities exist on a continuity spectrum, thanks to family resemblances. What makes propositions hinges is their role within the language game and the community where they are objects of certainty. While at the center of a community's practices and belief systems, they "conceal themselves" as empirical propositions (OC: 96-98) and can be proven wrong or lose their function depending on the communities where they stand fast.

This normative yet unfixed character of commonsense beliefs may betray relativistic sentiments from Wittgenstein. In my view, it also strengthens the identification of language games as niches while avoiding a relativistic interpretation of the concept. Niches are generated by organisms in their environment and their (inter)actions within it. However, environments vary and populations need to adapt to such diversity, and the specific features of individual niches lead to even more diverse adaptations. Niches are both a generalized phenomenon and realizable only in specific instances.
As culture and language as such are uncontroversially considered niches, I believe it uncontroversial to identify language-games as niches. They are adaptations that enable or outright constitute certain human activities shared (to some extent) across different cultures. As language-games are enacted by organisms within different environments, there will be differences between them, and which propositions will work as hinges will vary. These differences are not incommensurable, as they can be understood by keeping in mind their infrastructural role for everyday life.

4. Language games as niches, *Lebensform* as niche construction

Language-games are niches, grounding everyday practices of human communities: commonsense propositions showcase this function the clearest. Although these propositions can change over time and space, they are also characterized by family resemblances. One can understand and participate in different language-games not only because of their similarities: their participants can refer, when needed, to the extralinguistic context of these games, their functions and circumstances within the linguistic community.
How does such an identification help interpreting the notion of *Lebensform*? When Wittgenstein uses this notion, he always seems to try describing an important feature of language-games: their entanglement with non-linguistic practices, and how they are not understandable when considered in abstraction from them (Glock 1996). He claims that «speaking a language is part of an activity, or a form of life (PI: 23)»; agreement among players of language-games is «not an agreement in opinions but in forms of life» (PI: 241); and behavioral patterns found across different populations are «modes of this complicated form of life» (PI i). In *Cause and Effect* (CE) he also acknowledges the connection and development between more "primitive" forms of life into others (420). At times his use of the term seems unsure, as in PI Wittgenstein writes that «what has to be accepted, the given, is – so one could say – forms of life» (226e) and in OC, while tempted to regard certainty as a form of life, he notes «that is very badly expressed and probably badly thought as well» (358), adding that he means to «[c]onceive [certainty] as something that lies beyond being justified or unjustified; as it were, as something animal» (359).
The notion of *Lebensform* is in tension between naturalism and culture, and between unity and plurality. *Lebensform* denotes something animal and yet intelligible from linguistic practices and as something that is shared by all these practices and yet varies across their different instantiations. Identifying language-games as niches can further clarify the ambiguity of this notion. In fact, Rouse (2024) proposes an understanding of normativity in Wittgenstein as an expression of niche construction. He argues that the normativity of language games is a result of niche construction processes, which, in turn (as I have explored in section (2) are a sort of continuation of biological processes. He argues that, if organisms are assessable through biological normativity – the functional assessment of how well they maintain their biological processes – then the normativity of social practices is a sort of continuation of biological normativity. Because human beings especially rely on language games, which are niches whose persistence depends on jointly recognized

and enacted norms, our "biological normativity" relies on interdependence and alignment among social actors in participating to the language games that make up their life. In a sense, what Rouse calls biological normativity, I see as *Lebensform*, in a more descriptive and less normatively loaded sense (which, I believe, is what Wittgenstein assumed with the term). More so than making normative assumptions about what our nature as human animals is, I argue that human beings have a need for structure that is distinct when compared to other animals, and that the concept of *Lebensform* means such a need for structure and can be interpreted as niche construction.

Niches are the practices organisms enact in their environment. As the environments where human beings live can vary, different populations develop different niches. The name used to analyze the characteristics and function of niches in general is niche-construction. Niche-construction is a process that requires consideration of its general functions for organisms and its necessarily diverse instantiations. It is understood both in its plural manifestations and in its general role, both as an extra-organismic mechanism – as an environmental modification – and as originating from organisms themselves. If language-games are as instantiations of niches, then *Lebensform* is a synonym to the concept of niche-construction.

This idea appears to be supported by a set of experiments showing children's predisposition to rule following. Horner and Whiten (2005) and Lyons *et al.* (2007) found that children, in contrast to adults and primates, were prone to over-imitation. Rakoczy *et al.* (2008) showed 2- and 3-year-olds how to play a new game and then correcting a puppet that would come in and contravene its rules. Overall, children demonstrate an early tendency to follow social norms and conventions (Carpenter 2010).

These findings are close to many of Wittgenstein's reflections: how the understanding of a language is primarily determined by following a rule (PI: 201, 202) and by means of conformity within a community (PI: 242). They also resonate with the idea that learning a language is a matter of training (PI: 5), observation and instruction (OC: 279), and that its practice cannot be meaningfully doubted while a language game is learned (CE: 415-416, OC: 115). Children are prone to rule following, and yet the rules vary depending on the context where they live and grow. Pinker (2003) surveys a series of cases where the same kind of phenomenon, whereby children are neurologically predisposed to learn a language composed of morphology, syntax and grammar. While these elements characteristic of every language vary significantly when specific languages are compared, the disposition as such seems to characterize children in general. These (at least partially genetic) predispositions can be only studied through the multiplicity of their instantiations.

It is in this context that the reading of *Lebensform* as a niche construction proves convincing. The concept of niche construction aims to account for the multiplicity of ways organisms alter their environment. At a certain level of abstraction, their function can be said to be general: life and survival. However, depending on the population and the environment where they live, the niche will develop in more specific ways, and it will almost inevitably vary. Seeing social and cultural practices as instantiations of this adaptive process further links two traditionally distinct domains - nature and culture. The notion of niche construction does not aim to reduce these processes into one explanatory kind, but to account for their similarities and complexities.

As language-games are instances of niches, I believe the notion of *Lebensform* is also, ultimately, a however useful abstraction. It aims to capture the intrinsically complex nature of language games, as both situated in specific contexts and grounded in biological needs (one could almost say *a priori*); as both multiply realized and uniformly common to our species; and as bridging the gap between nature and culture, for the latter originates from intrinsic needs of our species. If spoken, practiced language - that is, language-games - is

a niche; and if the human animal has as its most salient feature the capacity to adapt to the different environments it populates through sophisticated and flexible niche construction: then the term *Lebensform* aims to capture a need for structure that drives human survival and everyday action. Many of the activities constituted or facilitated by language are comparable among different populations, depending on the kind of needs of the people performing them and the possibilities for action offered by the environment. What remains a constant across all language-games is the presence of a structure with normative influence over the agents involved in the practice. Language-games, as niches, can be externalized and shared across a population, becoming available to others while entailing a reification of the language game. As I discussed in section 2, language itself is both part of the adaptive process of niche construction and a niche itself. The realization of the human *Lebensform* through language-games is grounded in the general need to live of human beings, consisting in a context-dependent re-structuring of their environment. Viewing language-games as niches, as intrinsically multiple realizations of a species-specific need, supports an understanding of Wittgenstein's *Lebensform* as expressing the intrinsic tension of language-games as inherently human and necessarily diverse.

If so, the notion of *Lebensform* aims to capture both pluralistic and monistic features of human beings. I believe that Wittgenstein's use of this notion is meant to grasp the lived dimension of linguistic practices, whose significance can be grasped only when fully taking those practices into account[2]. Otherwise, one might commit what Wittgenstein considers a mistake, that is the analysis of certain features of language in abstraction from their context. Such a mistake can happen because language is a niche, whose components (words, propositions and their specific meaning) can be analyzed in abstraction from their practical instantiations. However, their decontextualization can lead to obfuscating their actual role. It would be like trying to understand the practice carried out by chimpanzees to "fish" termites from their nests with herb stems (Sanz *et al.* 2009) by looking at the stems and ignoring their context of use. Wittgenstein's remarks on the relation between *Lebensform* and language-games highlights the contextual nature of linguistic practices that, while grounded in the needs of living beings, are necessarily as different as the environments of their enactment.

Reading *Lebensform* as niche construction is also compatible with existing interpretations of the concept of language-games and to philosophical theories regarding the evolution of human intelligence and sociality. The idea that human beings construct language-games, which acquire an independent ontological status, driving the behavior of people – is close to theories of "mindshaping", which argue human attunement to normative influence and the attitudes of others played a key role in the human evolutionary development (Mameli 2001, Zawidzki 2013). Such approaches refer to niche construction theory in seeing these practices as externalizations with a normative influence on the agents partaking in them, which end up forming what Wittgenstein calls «the inherited background» where language-games can take place (OC: 94). Claims close to my proposal for such an interpretation of *Lebensform* can be found in Moyal-Sharrock's (2015) and Andronico's (2018) arguments that language games constitute a "second nature". Andronico argues that human beings tend to integrate rules through habituation and the reiterated practice of language-games, coming to view the normativity of these practices as real and concrete as natural facts. Moyal-Sharrock argues instead that Wittgenstein saw nature, culture and language as entwined, and that the plural and monistic sense of the

[2] One could say that the underlying idea of *Lebensform* is one of the primary hinges that enables the philosophical inquiry that Wittgenstein engaged with throughout his later writings, the grounding that enabled his analysis of language games.

term (as forms and form of life) are inseparable. Wittgenstein's *Lebensform* should then be understood as a plurality within a unity, accounting for cultural practices to be understood within a human biological framework.

I took a step further in this direction, by explaining this plurality within unity as more than a "second nature". I fear that describing the creation and practice of language-games in this way risks undermining the fact that human linguistic practices, while in a sense much more complex and sophisticated, are not something entirely different from the way other animals engage with and modify their environment. Niche-construction is not exclusive to human beings; and the construction and practice of a niche, while depending on many factors such as the material aspects of the environment and traces left by the previous organisms (the "inherited background") is ultimately dependent on present niche constructors. The same goes for language-games. The multiplicity of practiced language-games should be understood as an essential feature of human beings that can only be manifested in a plurality of practices and adaptations to the world.

5. Legitimizing *Lebensfom* as Niche Construction in Wittgenstein's Philosophy

I have so far argued for the explanatory identity of the notion of *Lebensform* in Wittgenstein and that of niche construction. I.e., I interpreted the concept of *Lebensform* to mean a general need for structure human beings have that is realized in a variety of language games. However, two questions remain. On the one hand, I ought to explain how exactly my proposal is positioned within the wider debate on the meaning of *Lebensform* in Wittgenstein's philosophy. On the other hand, I ought to explain why the kind of evolutionary theory-inspired conception of *Lebensform* I propose here would be coherent with the of Wittgenstein's thought.

The first task is by far the easiest to address. As I mentioned in the introductory section of this paper, my proposal aims to be, first and foremost, conciliatory. Boncompagni (2015, 2022) discussed the diverse and sometimes opposite ways in which the concept of *Lebensform* has been interpreted within Wittgenstein scholarship. I have laid out the different theoretical coordinates within which those interpretations place themselves in the introduction, those coordinates being: transcendental vs empirical interpretations of *Lebensform*; monistic vs pluralistic interpretations of *Lebensform*; and naturalistic vs cultural interpretations of the concept. My proposal solves the apparent tension between these theoretical coordinates, and the various interpretations identifiable through those coordinates, in the following manner:

(1) Transcendental vs empirical: the notion of *Lebensform*, as niche construction, is first and foremost a way to capture an empirical phenomenon, as it occurs in the world where human beings live. However, the notion does not just describe singular instantiations of language-games, but also tries to capture the biological preconditions that enable niches to be constructed. These preconditions, whereas necessary for language-games to be practiced, might be called transcendental, insofar as they are considered needs characteristics of situated organisms in their environments, as features of human beings' engagements with the world and not as formal prerequisites;

(2) Pluralism vs monism: by identifying *Lebensform* with niche construction, there is a sense in which Wittgenstein's notion can be considered as both pluralistic and monistic: language games take on very different forms, but they share family resemblances as the product of the genus *Homo Sapiens*. Different level of abstraction can identify the particularities and unifying features of language games: for instance, a ritual might be characteristic of one specific culture, but communication is an activity shared by human beings as a whole;

(3) Naturalism vs culturalism: here the reflections on niche construction theory prove the most useful. Niche construction theory aims to bridge the gap between nature and culture and delineate a continuity between these two traditionally separate domains. I believe that Wittgenstein's tortuous reflections regarding language-games, marked by the sparse and seemingly key mentions of the notion of *Lebensform*, mirror his philosophical struggle in connecting the cultural diversity of language-games within the nature of human beings as expert environmental engineers, and linguistic animals.

With my conception of *Lebensform* as niche construction, the various interpretations of this concept can find a common ground. This does not mean that the various interpretations of *Lebensform* are all correct. However conciliatory my view might be, it also implies that each of those interpretations is lacking to some extent. The reason being, the especially (but not exclusively) human need for structure that, in my view, the concept *Lebensform* signifies is not captured by any of them, but they do, however implicitly, presuppose it. Rather, my conception of *Lebensform* as niche construction defines and recontextualizes the driving intuitions of these various interpretations.

At the same time, my argument, while considering the wider context of Wittgenstein's thought, is primarily focused on this concept and its placement within Wittgenstein's philosophy. My conception of *Lebensform* is sufficiently flexible to allow me a reasonable degree of agnosticism regarding how other aspects of Wittgenstein's philosophy. More so than belief formation processes, or the function of philosophy, my conception of *Lebensform* focuses on the pragmatic basis for any language games. And insofar as, following Coliva (2015), one can consider the passages where Wittgenstein uses this concept as grammatical remarks, they are, much like hinge propositions, both cardinal and marginal aspects of his overall philosophy.

The second desideratum I must fulfil, however, is a taller order to ask for a variety of reasons. If Wittgenstein's use of the concept of *Lebensform* is sparse, ambiguous, and received much attention from his readers, his opinions on evolutionary theory – and especially Darwin – are even sparser, and much less clear. The only systematic inquiry on Wittgenstein and Darwin's evolutionary theory is provided by Marchesin (2024), who explores the scattered mentions of Darwin in Wittgenstein's writings. While I will additionally refer to his work on the matter, I must recognize that my reconstruction of Wittgenstein's view, as well as my response to it, is speculative, albeit necessary to legitimize my own position.

From scattered recollections by his colleagues and acquaintances, it appears that Wittgenstein did not have a high opinion of Darwin's evolutionary theory. On the one hand, Maurice O'Connor Drury attests that Wittgenstein always believed that «Darwin was wrong». The conversation, collected in Rush Rhees's (1981) edited collection "Ludwig Wittgenstein. Personal Recollections" is attested as follows:

> One day walking in the Zoological Gardens we admired the immense variety of flowers, shrubs, trees and the similar multitude of birds, reptiles, animal.
> WITTGENSTEIN: I have always thought that Darwin was wrong: his theory doesn't account for all this variety of species. It hasn't the necessary multiplicity. Nowadays some people are fond of saying that at last evolution has produced a species that is able to understand the whole process which gave it birth. Now that you can't say.
> DRURY: You could say that now has evolved a strange animal that collects other animals and puts them in gardens. But you can't bring the concepts of knowledge and understanding into this series. They are different categories entirely.
> WITTGENSTEIN: Yes, you could put it that way (*Ivi*: 174).

At the same time, a collection of notes from Rush Rees in conversation with Wittgenstein edited by Gabriel Citron reports the following exchange between Wittgenstein and his student Rush Rhees:

> In 1937, when Wittgenstein quoted "im Anfang war die Tat" ["In the beginning was the deed", from Goethe's Faust] in speaking of 'unser Ursache-Wirkung-Spiel' ["our cause-effect game" he wrote as though the only reasonable thing were to regard the simpler and more primitive as the earlier. I think he would have spoken differently ten years later. — I remember certain things he said in conversation about the Darwinian theory of the descent of these forms of organism from earlier forms. I said that although I could not go along with Darwin's explanation of changes in species through 'natural selection', I supposed there was evidence that species were not always the species to be found today, and that various species that once existed are extinct. "On the other hand", I said, "I don't see why we need think that the simplest organism, say the amoeba, was earlier than any of the others." Wittgenstein agreed emphatically. And he added: "Neither do we need to suppose, as Darwin did, that any big change from one species to another (which superseded it) must have been very gradual." (A sudden big change need not be harder to imagine than a very gradual one) (Wittgenstein, Rhees, & Citron 2015: 59).

Despite the scarcity of his remarks, it is apparent Wittgenstein was not satisfied with Darwin's evolutionary theory. However, there might be two different ways to interpret the source of this discontent. The conversation with Rhees and the start of the conversation with Drury seem to imply that Wittgenstein had a problem with the content of Darwin's evolutionary theory. Namely, its oversimplification of the natural world, and the way evolution takes place, which might not be necessarily gradual. While these remarks might have been fair criticism at the time, the development of evolutionary biology, genetics, and paleontology over the last century have done quite a bit of work to address them.

There is, on the other hand, another apparent criticism in Wittgenstein's remarks that I find potentially more interesting for the argument I am proposing. It is most evident when he says, in conversation with Drury, «nowadays some people are fond of saying that at last evolution has produced a species that is able to understand the whole process which gave it birth. Now that you can't say». My impression is that Wittgenstein's displease of Darwinian evolutionary theory was not exclusively about its content, but about the teleological interpretation some people had of it, whereby human beings would be the ultimate and greatest outcome of evolution (a view that, arguably, Darwin himself did not endorse). It would be a criticism not too dissimilar to the one Wittgenstein moves against Frazer in his Remarks on Frazer's Golden Bough, where he states:

> What narrowness of spiritual life we find in Frazer! Hence the impossibility of grasping a life different from the English one of his time! Frazer cannot imagine a priest who is not basically an English parson of our times, with all his stupidity and shallowness (RFGB: 12).

The problem being, the pretense of not just abstracting ourselves as inquirers from the practices we study (something Wittgenstein wrote of at length in PI), but to see themselves as the final or comparatively more perfected form of the practices we study. If in RFGB that pretense takes shapes in the dismissal of practices as primitive, evolutionary theory would have the same pretense insofar as our human form of life is the more developed or perfected version of more "primitive" ones. Rather than a result of empirical inquiry, such a claim would derive from a world-picture, considerations that

do not lend themselves to empirical inquiry but rather are presupposed by such inquiry – and that would be a mistake.

It might not be too far-fetched, in my view, to view Drury's response, in his conversation with Wittgenstein, as a consideration of this sort. The remark itself that «now has evolved a strange animal that collects other animals and puts them in gardens. But you can't bring the concepts of knowledge and understanding into this series», with which Wittgenstein agreed, could be interpreted, as far as I can see, in two ways. Namely, either the consideration that human beings are supposedly the latest and most perfected outcome would have a kind of ideological presumption, comparable to Frazer's study of "primitive" cultures. The presumption being, that the inquirer's state is the better and improved one compared to that of the object of study, a teleological remark disguised as an empirical proposition. Alternatively, as Marchesin (2024) proposes, what Wittgenstein and Drury are criticizing is the misguided consideration of an explanatory model or conceptual framework – comparable, in Marchesin's view, to a Kuhnian paradigm – as if it were an empirical proposition.

This reading would help explain Wittgenstein's gripe with Darwin's theory for lacking "the necessary multiplicity", not just due to the great variety of organisms in existence, but due to the apparent oversimplification the theory seems to endorse. In my view, this interpretation would link Wittgenstein's remark 4.1122 in the *Tractatus Logico-Philosophicus*, that «the Darwinian theory has no more to do with philosophy than has any other hypothesis in natural science». Marchesin argues that Wittgenstein's remark in the Tractatus should be contextualized in an ongoing discussion with Bertrand Russel's own criticisms of Darwinism (*Ivi*: 2). However, in the *Tractatus*, the note that Darwin's theory is closer to philosophy rather than science might imply that Wittgenstein viewed Darwinism as similar to philosophy insofar as it works as an explanatory, or clarificatory framework[3]. Importantly, the two readings of Wittgenstein's displeasure with Darwinism – as either an ideological presupposition or an explanatory framework disguised as empirical proposition – are not strictly incompatible. The oversimplification Wittgenstein accuses Darwinism of would be a reliance on adaptation or utility as explanatory principles (which would be an explanatory model disguised as empirical proposition) that is far from being value-free (which would make it an ideological claim disguised as a scientific one).

With all this being said, if Wittgenstein criticized Darwinian evolutionary theory for being an oversimplifying, ideologically charged explanatory framework disguised as a scientific claim, one might question whether my reading of *Lebensform*, would also fall into such a trap. This criticism could be applied to my own proposal, in the sense that Wittgenstein would have not intended to relate his concept of form of life in connection to evolutionary theory at all – at the very least, not Darwinism. To clarify once again, I do not claim that Wittgenstein himself saw *Lebensform* as niche construction (especially given that the concept did not exist at the time) my view of *Lebensform* as niche construction serves an explanatory function meaningfully interpreting this notion in Wittgenstein's body of work. But to what extent, given Wittgenstein's (expressed) views on Darwinism, is such an explanatory identification legitimate? I argue that, given niche construction theory's specific characteristics within evolutionary theory as a broader field, such concern is misplaced.

As I explored in section 2, niche construction theory was developed in part as a response to some strands in evolutionary theory that would see organisms as passive entities in the

[3] Given the relatively well-known differences between "earlier" and "later" Wittgenstein (e.g., Phillips 1977, Perera 2026), this claim might be a bit too speculative. Notably, some authors, such as Moyal-Scharrock (2016) do argue for some degree of continuity between Tractarian and post-Tractarian Wittgenstein. That being said, I do not clearly see how the eventual falsity would hinder my overall argument here.

face of environmental pressure. Traditional Darwinist evolutionary theory has seen evolution as a deterministic matter of genetic adaptation in response to environmental factors (Bateson 2017, Bendik Hellem & Grant 2022). Arguably, this appears to be something Wittgenstein had an issue with: the understanding of evolutionary theory as a simplifying explanatory framework reducing the complexity of nature over time to one kind of mechanism, that is genetic fittingness. This is also one of the primary criticisms niche construction theory moves towards post-Darwin evolutionary theory. Pinker (2010) and Bateson (2017) reconstruct the underlying motivations of niche-construction theory to Alfred Russell Wallace (1870), who criticized Darwin while embracing the (theologically grounded) argument by design. Wallace was unconvinced that mere genetic selection, a process where organisms are fundamentally passive in the face of environmental pressure, could explain the many faculties and practices that differentiate human beings from other species.

The criticism of conceiving organisms as passive entities throughout evolution is the main motivation driving niche-construction theory, as it has better explanatory potential regarding how human beings became increasingly skilled through environmental manipulation and their adaptive capacities. This framework considers evolution as a two-way process where both environmental pressures and the organism's own capacities contribute to evolution.

On the one hand, as niche construction theory sees evolution as a more complex matter than one-way pressure from the environment onto the organism, evolution is a much more multifaceted affair than evolutionary theory in Wittgenstein's time would have conceded. In that case, Wittgenstein's complaint that evolutionary theory lacks the "necessary multiplicity", as he puts it (Rhees 1981: 174), would be properly addressed. Considering niche construction, besides environmental pressure, as a crucial aspect of evolution implies that evolutionary processes cannot be overly simplified as a matter of species fitness. In other words, niche construction theory would adequately address Wittgenstein's explanatory criticism of Darwinism.

On the other hand, niche construction theory can also address what I called Wittgenstein's "ideological" criticism of evolutionary theory. Namely, his criticism that evolutionary theory short-sighted pretense of «saying that at last evolution has produced a species that is able to understand the whole process which gave it birth» (Rhees 1981: 174), to view humanity as a superior or perfected species in contrast to other forms of life[4]. Niche construction theory can address this criticism as well. According to that framework, as I mentioned in section 2, there is no hard boundary between nature and culture, as the latter, alongside the capacity for language, results from niche construction processes. What differentiates human beings from other organisms is the extent of the constructed niche's complexity. However, that does not make niche construction as such a capacity or process exclusive to human beings. Rather, different organisms have the capacity or need construct diverse kinds of niches. Human beings have evolved to skillfully rely on niche construction to the extent that they are born, develop and live within it, and at all these stages they need the structure the niche provides to exist as they do. In other words, as I argued in the previous section: this need for structure that niche construction addresses is a part of the human form of life. However, the importance of niche construction for the human firm of life does not imply any kind of qualitative difference, let alone superiority, from the form of life of other organism, nor any kind of superiority.

[4] Arguably, Darwin himself may have not endorsed this interpretation of his own theory. As mentioned at the beginning of this section, it is hard to assess how (or how much) Wittgenstein understood Darwin's evolutionary theory precisely, and it is likely that, more than with Darwin himself, his issue was with how the theory was conceived and applied by his contemporaries.

In this sense, niche construction can avoid the ideological presumptions that classical Darwinism risks encountering and address the "ideological" interpretation of Wittgenstein's criticism. If anything, the extent by which human beings depend on niche construction as their form of life, and the extent by which their niches have become complex practices like many language games are, makes them, in O'Drury's words, «a strange animal» (*Ibidem*) compared to all others.

My defense of my own interpretation of *Lebensform* as niche construction does appear to be overall coherent, or at least not contradictory, with Wittgenstein's view of evolutionary theory. However, from his conversations with Michael O'Drury and Rush Rhees, it is also apparent that it is a mistake to conflate philosophical and empirical propositions. I may be accused to do so by exactly conflating concepts from Wittgenstein's philosophy and niche construction theory, which, as a scientific framework, is a different kind of language game than philosophical practice (according to Wittgenstein, at the very least).

While there may be legitimacy to this kind of criticism, I do not believe that Wittgenstein argued for a categorical distinction between scientific and philosophical propositions. In the Nachlass, Wittgenstein claims that the achievement of both Copernicus and Darwin «was not the discovery of a true theory but of a fertile new aspect» (2000: 23). As I mentioned previously, Marchesin (2024) interprets the term "fruitful new aspect" to not evaluate the empirical contribution of those theories, but the conceptual shift they brought forth. The novelty (and success) of those theories would then derive not strictly from their empirical claims, but from the assumptions that inform the method and content of those claims. While Marchesin compares this "fruitful new aspect" to Kuhnian paradigms, I would suggest that those kinds of presuppositions informing scientific research ought to be seen as hinges themselves[5]. In this sense, Darwinian evolutionary theory posits, more so than demonstrates, evolution as the main process driving the development of biological species given the available evidence. Natural selection as a result of survival of the fittest is the hinge, or explanatory assumption, that drives the formulation of more concrete hypotheses in the study of species development and evolution over time. To have such explanatory hinges is crucial for any scientific theories. However, as I have argued in this section, to mix up those assumptions with the verifiable hypotheses that can be (dis)proven by those scientific theories is a senseless move. Niche construction theory can be defended same way, insofar as one recognizes the concept of niche construction as a driving assumption for the formulation of scientific hypotheses about the evolution of organisms, rather than as an empirical statement. And, as I also have defended in this section, niche construction theory addresses the criticisms Wittgenstein had for Darwinism, legitimizing my proposal to explain *Lebensform* as niche construction.

6. Conclusion

In this paper, I suggested an understanding of Wittgenstein's notion of *Lebensform* as niche construction. My conception helps accounting for the fundamental ambiguity surrounding the legacy of this concept. I proposed a strong connection between the concept of *Lebensform* and the grounding of language-games and agency that is exemplified by hinge propositions. Through a closer analysis of many passages in OC, I drew up parallels between Wittgenstein's description of hinge propositions, intended as sources of certainty, and examples of niches. Further engagement with other works and notes from

[5] It might be interesting to compare more in depth Wittgensteinian hinges with Kuhnian paradigms, or Lakatos' concept of "cores" of scientific research programs, but that would go much further beyond the purposes of the current paper.

Wittgenstein and his circle allowed me to argue that the concept of *Lebensform* signifies a need for structure that, according to niche construction theory, characterizes many different species and happens to be more pronounced in human animals.
My proposal to interpret *Lebensform* as niche construction has two kinds of advantages. It has, firstly, an interpretive advantage, insofar as it captures the basic intuition about its meaning that drove its diverse, yet contrasting interpretations. Most importantly, however, if my proposal is correct, then Wittgenstein understood human pragmatics to be grounded at the boundary of what makes human beings distinctive from other species and, at the same time, distinctive as a species. Weirdly, despite the attention the concept of *Lebensform* has received over the decades, I am unsure about whether and how much Wittgenstein himself attributed importance to this concept within his own inquiry, especially compared to other issues in epistemology and pragmatics. If, like Lagerspetz (2020) suggest, his fragments dealing with the concept of *Lebensform* served as grammatical remarks, then his own attention must have been directed towards the other issues he wrote about that presupposed *Lebensform* to have a hinging function. To examine the concept of *Lebensform* in depth would have constituted a senseless move in the language game that was his philosophical inquiry. In this context, my argument investigated the underlying assumptions of Wittgensteinian pragmatics and attempted to look (yet not dig deeper than) where the shovel of his inquiry bent.

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