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Canguilhem's critique of Kant: bringing rationality back to life

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Abstract

Canguilhem's contemporary relevance lies in how he critiques the relation between knowledge and life that underlies Kantian rationality. The latter's Critique of Pure Reason and Critique of Judgment represent life in the form of an exception: life is simultaneously included and excluded from understanding. Canguilhem's critique can be grouped into three main strands of argument. First, his reference to concepts as preserved problems breaks with Kant's idea of concepts regarding the living as a 'unification of the manifold'. Second, Canguilhem's vital normativity represents life as the potential to resist normative orders that judge the living, relegating Kant's 'lawfulness of the contingent' to a 'mediocre regularity'. Third, Canguilhem's introduction of the environment as a 'category of contemporary thought' decenters the living/knowing subject and introduces contingency. His idea of the 'knowledge of life' leads to the conclusion that life is the condition of possibility of rationality, rather than rationality's 'blind spot'.

Keywords

Introduction

The entire oeuvre of Georges Canguilhem, French philosopher and historian of life sciences, is being published in six volumes (most recently the fourth volume appeared, Canguilhem, 2015). This makes his work, mostly contained in essays – with the exception of his theses in medicine (Canguilhem, 2006) and philosophy (Canguilhem, 1977) - more accessible. Outside of France, Canguilhem is often regarded as Foucault's mentor, although he described the

urge to identify a 'precursor' in the history of science as 'the most distinct symptom of an inaptitude for epistemological critique' (Canguilhem, 2002: 21).

But what was Canguilhem's *own* epistemological critique? It is only possible to understand any work and assess its contemporary relevance when one knows what that work engages with; what it seeks to question or challenge. Foucault hinted that the importance of Canguilhem's work lies in how he transforms our understanding of a relation between knowledge and life (Foucault, 1985: 6, 14) that, according to Foucault, is characteristic of 'modern rationality' (1998: 143; 2004: 255).

This article argues that Canguilhem's epistemological critique takes aim at the heart of Kant's representation of rationality: the simultaneous inclusion and exclusion of life from understanding, introduced in his first and third Critiques (Kant, 2003; Kant, 1987). This idea of life as an exception (Agamben, 2003: 43) to understanding arguably gave rise to the traditional idea of life as that which makes knowledge possible and at the same time eludes it (Foucault, 2004: 139, 173).

It is argued that three ideas form the cornerstones of Canguilhem's critique. First, his discussion of concepts as preserved problems, rather than as a unification or unity of a manifold (AA 5:373, 1987: 252, 373; AA 5:377, 1987: 256, 377), as Kant suggested regarding concepts of the living (AA 5:396, 1987, 278: 396; AA 5:385-386, 1987: 266, 385-386). Second, Canguilhem's idea of vital normativity as the potential to institute new, always provisional, normative orders, as opposed to Kant's idea of the normative as standard of evaluation or principle of judgment with regard to the living. Third, Canguilhem's introduction of the environment as a 'category of contemporary thought' (2003: 165) engages the 'problem of

individuality' in the life sciences (Canguilhem, 2003: 79) and introduces contingency, thereby challenging the centrality of Kant's knowing subject.

Finally, Canguilhem's critique is encapsulated in his idea of the knowledge of life, or life as knowledge, expressed in the supposedly circular notion that the 'thought of living derive[s] from living the idea of living' (2003: 16). This idea, which takes the point of view of the organism as observer, means that life is no longer exceptional to understanding or is rationality's 'blind spot', as Kant suggested. Rather, it is that which makes understanding and rationality possible.

Whereas Kant arguably sought to realise a Copernican revolution in metaphysics by establishing his system of pure reason, the Copernican revolution that Canguilhem seeks to effectuate is to put life at the heart of rationality; to bring rationality back to life. Canguilhem's epistemological critique and political project is this: to oppose any rationality that relies on principles that judge, limit, or extinguish life, and to propose an alternative rationality that relies on life's creative contingency, resistance, and resilience.

Life as an Exception to Understanding; Concepts as Preserved Problems

Canguilhem's work is mostly discussed with reference to other French philosophers (for example, Lecourt, 1975), while his engagement with - most notably - German scientists and philosophers remains largely unexplored (Schmidgen, 2008; Brilman, 2009: 26-29), with the exception of Nietzsche (Cherlonneix, 2008; Stiegler, 2001; Fichant, 1993: 41, 44, 45, 48 ; Foucault, 1985: 142; Lecourt, 2008: 6; 71, 79) and, more recently, Kant (Brilman, 2009; Wolfe, 2010; Schmidgen, 2014).

Before the second world war started, Canguilhem suggested to readers of his columns in *Libres propos* that they familiarise themselves with German philosophy, rather than demonise Germany and its people (Lecourt, 2008: 21, 25). He argued that French philosophers, probably to their detriment, had not engaged much with German philosophy (Canguilhem, 2002: 347), an exception being his friend Cavaillès – a philosopher of mathematics and militant member of the Resistance who was executed by the Nazis. Cavaillès studied in Germany, referenced Kant (Canguilhem, 2004: 12, 15, 33, 47) and allegedly told his Nazi interrogators how he appreciated the Germany of Kant and Beethoven (Ferrières, 1982: 202).

Canguilhem suggested that his own project resembled Hegel's more than Bergson's or Kant's (2002: 348), although his references to Hegel are few (2002: 345-347) and do not seem to form part of a sustained engagement with the latter's philosophy (Gayon, 1998: 323, n. 79). Rather, some of Canguilhem's more specific references are to Kant's Critique of Pure Reason (to clarify the character of concepts) and the Critique of Judgment (to explore the limitations of Kant's ideas on knowledge and life) (2002: 343-345; 351-352).

Before turning to Canguilhem's critique of Kant, it should be remembered that Kant justified the necessity of his Critique by presenting it as the release of man from his 'self-incurred tutelage': man did not lack reason, but merely lacked the 'resolution and courage to use it without direction from another' (Kant, 1963: 3). He hinted at the revolutionary character of his ideas by referring to Copernicus:

> We should then be proceeding precisely on the lines of Copernicus' primary hypothesis. Failing of satisfactory progress in explaining the movements of the heavenly bodies on the supposition that they all revolve around the spectator, he tried whether he might not have better success if he made the spectator to revolve and the stars to remain at rest. A similar experiment can be tried in metaphysics, as regards the

intuition of objects. If intuition must conform to the constitution of the objects, I do not see how we could know anything of the latter a priori; but if the object (as object of the sense) must conform to the constitution of our faculty of intuition, I have no difficulty in conceiving such a possibility (AA 3:12).

Kant called his project a critique, rather than a doctrine, because the objective was not the enlargement of knowledge, but its correction (AA 3:43-44; 2003: 16). By critique he did not mean 'a criticism of books and systems, but a critical inquiry into the faculty of reason' (AA 3:44; 2003: ix). He explained his idea of pure reason as follows: '[o]ur ability to cognize from a priori principles may be called *pure reason*, and the general inquiry into the possibility and bounds of such cognition may be called critique of pure reason' (AA 5:167; 1987: 3).

What role, if any, did Kant attribute to the living in his Critique of Pure Reason? In 'Of the Deduction of the Pure Conceptions of the Understanding', arguably the most important part which, by his own admission, 'cost [him] by far the greatest labor' (AA 4:11; 2003: xi), Kant sought to explain how reason can exist prior to experience and nevertheless correspond to it. He proposed three scenarios - explained through biological metaphors of *generatio aequivoca,* epigenesis and preformation - to account for the emergence of categories of understanding that are prior to experience and through which we 'cognise' the world (AA 3:128; 2003: 95. He regarded 'as it were ... the *Epigenesis* of pure reason' (Kant, AA 3:128; 2003: 95) as the most plausible explanation for the emergence of the categories, probably because it allows reason to include its own origin (Müller-Sievers, 1993: 56). However, the difficulty with epigenesis is that it can be understood as an unbridled self-generative force that potentially threatens Kant's carefully constructed architecture of reason (Zammito, 2003: 96-97; Sloan, 2002: 238, 241). Therefore, perhaps, he downplays the importance of his use of biological metaphors, saying that examples and clarifications are 'necessary only from a popular point of view' (AA 4:12; 2003:

xii-xiii). Nevertheless, his use of the epigenesis metaphor reveals a problem that lies at the heart of his idea of pure reason. This problem is revealed when that reason seeks to understand living processes. How can the boundary between understanding and experience or knowledge and life be maintained?

In his Critique of Judgment, Kant runs up against the particularity of understanding life (Canguilhem, 2002: 148) and introduces an instrument to maintain that boundary. He explains that organisms cannot be cognised through the categories of understanding, but only be judged through regulative principles that 'restrain the understanding's arrogant claims' and guide it 'in its contemplation of nature' (AA 5:167-168; 1987: 4 (168)). It is here that Kant introduces the 'lawfulness of the contingent', 'lawfulness that [something] contingent [may] have [insofar] as [it] is contingent', 'lawfulness that is contingent objectively but necessary subjectively', 'lawfulness of an intrinsically contingent connection of the manifold in the object', or 'a law-governed unity… at the same time … in itself contingent'(AA V:404; AA V:184, 1987: 287 (404), 405 (217´), 432 (243´), 417 (228´), 23 (184), 287 (404)). Although Kant uses the metaphor of a tribunal for the 'Critical Investigation of Pure Reason' that 'pronounces against all baseless assumptions and pretensions…according to its own eternal and unchangeable laws' (AA 4:9; 2003 ix), what he calls 'laws' are regularities that make cognition possible or signal a potential ordering of that which is empirically diverse or contingent.

However, Kant does not imply that we should impose law on life (AA 5:186; 1987: 25 (186)), as teleology arguably does by ascribing it a purpose. In fact, he represents the principle of judgment as 'purposiveness without a purpose', revealing a measure of contingency that was previously obscured by the abstract character of the categories (Zuckert, 2007: 6-7, 11, 15). The 'lawfulness of the contingent' allows us to judge or reflect on the living almost as though it were

not living at all, but any other object in the world that we can rationally understand but never know.

Kant needs to account for the understanding of life in order to ensure the completeness of his system of pure reason and does so, paradoxically, by excluding living processes from understanding. Nevertheless, the principle of judgment makes it possible to unify life's diversity in order to make it intelligible. This unification of the manifold is achieved through regulative principles and concepts, which are not necessarily 'rational concepts' (AA 5:385-386; 1987: 266 (385-386)). However, it is the concept of the organism that makes it possible for an organism to be grasped as such (Ginsborg, 2001: 235). A concept unifies the diverse as diverse and differs, therefore, from subsuming diversity under a category of understanding (Zuckert, 2007: 13-14).

Canguilhem's engagement with Kant is particularly productive since both refer to rationality with reference to living processes. However, Canguilhem uses concepts – presented by Kant as the instruments of reason - to challenge that reason. He leaves it up to the reader to decide whether he is a 'conceptual fossil', but says that his conceptual inquiry is in any case an incurable affliction (Canguilhem, 2000:9). At a time when 'everything "natural" is fashionable', Canguilhem believes that fashionable philosophizing is *not* what is required (Canguilhem, 1976: 71). Rather, he takes Kant's 'relentless rigor' as example (Canguilhem, 1976: 71), as reflected in his own style of writing (Lecourt, 1975: 163).

Canguilhem's concepts differ radically from Kant's. They are not instruments of judgment or tools of cognition that are prior to the world they seek to make intelligible. Rather, their 'stratification' (Schmidgen, 2014: 246, 245) make concepts potentially 'theoretically polyvalent' (Canguilhem, 1977, 6) and - coupled with the use of instruments and experiments - concepts are necessarily creative (Schmidgen, 2014, 247). Moreover, since it is always a

particular problem that gives rise to a concept and that this concept - in turn - formulates, all concepts are necessarily normative (Duroux, 1993: 49).

For Canguilhem, a concept is not productive because it 'economize[s] thought' (2002: 344) but because it 'preserve[s] a problem' that should be maintained 'in the same state of freshness as its ever-changing factual data'. Philosophy's task as the 'science of solved problems' is, then, to 'reopen rather than close problems' (Canguilhem, 1978: xxv, referring to Brunschvicg; Osborne, 2003; Schmidgen, 2014: 249, 234; Rheinberger, 2005: 193). Similarly, Heidegger noted that:

> [B]y the retrieval of a basic problem, we understand the opening-up of its original, long-concealed possibilities, through the working-out of which it is transformed. In this way it first comes to be preserved in its capacity as a problem. To preserve a problem, however, means to free and keep watch over those inner forces which make it possible … as a problem (1997: 143).

However, a preserved problem does not remain identical through time. Rather, concepts and problems continuously emerge, transform, and demise (Deleuze, G. and Guattari, F., 1994: 11). As Canguilhem says:

> [T]o work a concept means to vary its applicability and meaning, to generalise it by incorporating its exceptions, to export it outside of its original context, to take it as a model or - conversely - to seek a model for it, in short: to progressively attribute through certain transformations the function of a form to that concept (2002: 206).

Therefore, Canguilhem focuses on the flipside of Kant's idea that a concept regarding the living requires a unification of a manifold, gathering empirical diversity within itself to make it intelligible. Rather, concepts 'propose problems' and 'do not have explanatory significance per se because they maintain diversity instead of eliminating it' (Canguilhem, G. and Planet, C., 1939: 94-95). That which was presented by Kant as a solution to the problem that the contingency of life poses for understanding, is identified by Canguilhem as a problem. However, for Canguilhem the realisation that a concept preserves a problem or envelops a diversity of values is precisely what makes it productive. He traces concepts through history to explore, rather than unify, the diversity of values that illustrate life's contingency.

Vital Normativity; the 'Lawfulness of the Contingent' as Mediocre Regularity

Canguilhem's notion of biological or vital normativity (1978:70, 76) has been regarded as obsolete, allegedly representing the 'ontological normativity' of living processes (Rose, 1998: 164), while the 'binary distinction' between the normal and pathological (Rose, 2001: 7) that informs it is supposedly complicated by contemporary notions of risk and susceptibility, as well as technologies that mobilise and fragment the living (Rose, 2001: 13-14). Such criticisms often regard vital normativity as a self-contained concept, rather than as forming part of a sustained argument about the relation between knowledge and life. Even if it is understood as such a concept, vital normativity does not confer an ontological status on the living. Rather, such criticisms themselves seem to assume a certain facticity of vitality that relies on a traditional distinction between norm and fact in relation to the living. Such a distinction gives rise to a tacit

acceptance of existence in relation to the biological (Dagognet, 1997: 70) or a belief that living processes do not 'pose any special theoretical problem' (Canguilhem, 1947: 324).

Canguilhem submitted his thesis 'On the normal and pathological', in which he elaborated the idea of vital normativity, in 1943 (a second edition with a new foreword appeared in 1950 and was expanded in 1966) at a time when normative questions regarding the living were fraught with difficulty and judgment was being executed over people's lives and deaths. In this context, writing about life's normativity as a resistance to normative orders was a political act (Morange, 2005: 156). Canguilhem gave up pacifism and joined the Resistance after the Gestapo entered the University of Strasbourg where he taught, deporting two professors and a number of students (Sirinelli, 1994: 9, 314-343, 597-598). His decision resonates in a publication of 1939, co-authored with the colleague who allegedly persuaded Canguilhem to join the antifascist movement (Lecourt, 2008: 26): 'that which i[s] call[ed] peace remains a purely verbal negation of war'… [a choice is ultimately inevitable] 'between an attitude of submission to historical contingencies or necessities … and an attitude of resistance or rather organization' (Canguilhem G. and Planet, C., 1939: 297-299).

Canguilhem's idea of vital normativity was inspired by Goldstein (Schmidgen, 2014: 243-244; Wolfe, 2015: 207), whose exploration of the normal and pathological, as well as the reflex, informed Canguilhem's theses (Gayon, 1998: 309), although he referred to Goldstein's ideas merely as an 'encouragement and not an inspiration' (2006: 126; Debru, 2004: 63). Goldstein argued, based on the pathological data obtained while treating soldiers with brain damage incurred in the First World War (Goldstein, 1995: 15, 29-30; Canguilhem, 2006: 120), that there are two concepts of the norm, the 'idealistic' and the 'statistical', and that neither can be satisfactorily applied to the living. The former because it 'is not oriented on any reality but,

rather, would have to justify itself in reality'. The latter because it represents an average that cannot do justice to the individual. What was required was a normative concept that is: (i) generally valid, but (ii) able to account for the individual, while at the same time (iii) avoiding the subjective (Goldstein, 1995: 325).

It is argued that Canguilhem's vital normativity can be understood as an attempt to construe this almost logically impossible normative concept. It signifies that which (i) all living processes have in common, but (ii) is actualized in each individual, while (iii) the living cannot be judged as normal or pathological with regard to an ideal or average, but only objectively with regard to itself (Canguilhem, 2006: 87).

Another influence was Nietzsche, who shared Canguilhem's interest in Kant's references to the living. Nietzsche wrote an outline for a doctoral dissertation on 'The Concept of the Organic since Kant', only later describing Kant as 'that most deformed concept-cripple of all time' (Kevin Hill, 2003: 83, 24). According to Nietszche, Kant did not complete his Critique because he failed to formulate it in terms of values. The evaluation of empirical diversity suggested by Kant presupposes a value, while such value also derives from evaluation, leading Nietzsche to question the origin and creation of values (Deleuze, 1983: 1). The norm is no longer a pre-existing or *a priori* principle that represents a standard or ideal by reference to which empirical diversity is judged. Rather, it is itself generated by value and, in turn, gives rise to values. It concerns a shift from the norm as rule - with a focus on conformation, exception, and deviation - to the values that underlie norms, that make them emerge and proliferate.

Nietzsche believed that he more than anyone, because of his illness, was capable of a 'revaluation of values':

[T]o be able to look out from the optic of sickness towards *healthier* concepts and values, and again the other way around, to look down from the fullness and self-assurance of the *rich* life into the secret work of the instinct of decadence, that was my longest training, my genuine experience, if I became the master of anything, it was this. I have a hand for switching *perspectives*: the first reason why a 'revaluation of values' is even possible, perhaps for me alone (2005: 76).

This resonates with Canguilhem's statement that: "[b]eing ill for man truly means living a different life, even in the biological sense of the word" (2006, p. 49). Health and sickness, or the normal and pathological, are values of life that can only be re-evaluated by the particular life that leads it. No value can be attributed by reference to an existing norm, nor can value be derived from life itself. Vital normativity, therefore, regards nothing more or less than techniques of living; a potential for 'switching … perspectives' (Badiou, 1998: 232, referring to a 'shift of meaning').

Canguilhem began his inquiry into the normative by exploring why the concept around which medicine is organised and on which its therapeutic purpose relies - normality and its restoration – has gone unquestioned. The normal is as fundamental as it is undertheorised. Even if the normal and pathological are regarded as homogeneous, except for some quantitative variations such as excess and deficiency, these variations have an 'implicit qualitative and normative character' (Canguilhem, 1978: 23). The impossibility of separating the norm as standard from the norm as value, or fact from evaluation, signifies the inherent ambiguity of normativity and 'reveals that the problem itself persists at the heart of the solution presumably given to it' (Canguilhem, 1978: 36).

Canguilhem explains how the idea of homogeneity was preceded by the perception of the pathological as a qualitative situation, referring to the ancient Greek idea of illness as a

disequilibrium between different forces in the body (2006: 12-13) which leads him to understand vital normativity as 'polemical' or as a 'dynamic polarity' (1978: 70, 146). Therefore, vital normativity does not represent the judgment of the living in relation to a norm, since such judgment is 'essentially subordinate to that which establishes norms' (Canguilhem, 1978: 70). Only the living can judge its normativity, thereby ensuring its freedom (Lecourt, 2008: 37).

It has been argued that Canguilhem's position lies somewhere between 'substantival' and 'functional' vitalism, between ascribing a metaphysical character to life and merely explaining its functionality (Wolfe, 2011: 6; Morange, 2005: 264; Schmidgen, 2014: 240). Of course, any functional explanation to some extent presupposes a biological specificity that apparently requires such explanation. In any case, Canguilhem attributes no particular value to life, which is not to say that he believes life has no value. Rather, what matters is that 'life is not indifferent to the conditions in which it is possible' or, as he says, 'even for an amoeba, living means preference and exclusion' (1978: 70, 76). Similarly, Nietzsche stated that 'life is only a *means* to something' (1968: 375), so that value is attributed each time depending on the situation, by the living itself. Vital normativity represents techniques of living that are neither random nor predetermined, but driven by particular necessities and actualised each time. These techniques can perhaps be better understood through Foucault's idea of practices that do not per se involve any 'moral reflection or prescription' (Foucault, 1990: 3) or through Luhmann's idea of systemic operations (Luhmann, 1995: 114). Vital normativity regards a capacity (Canguilhem, 2006: 120, 129) or a potential to confront the particular problems that living implies (Osborne, 2003: 5-6).

But how does Canguilhem's vital normativity engage with Kant's rationality? As hinted at by Foucault, Kant's idea of pure reason as autonomous contains within itself the conditions for its own dismantling (1985:14). This is because there are two kinds of norms regarding the living

at work in Kant's Critiques. On the one hand, living processes are their own cause and effect, suggesting a self-generative force. On the other hand, the living is subjected to a norm or principle that enables a subject's understanding. Kant's 'lawfulness of the contingent' is only not a paradox because lawfulness refers to the level of the subject, whereas contingency refers to the level of the object.

It may have been Kant – apart from Goldstein and Nietzsche – who inspired Canguilhem's vital normativity through his idea of life as a self-generative force, which suggests an 'immanent normativity' (Zammito, 2006: 753). In fact, it could be argued that the 'lawfulness of the contingent' sounds like a rather accurate description of vital normativity. However, the difference between Kant and Canguilhem is that the latter draws the idea of life as a creative force to its logical conclusion, so that its subjection to normative standards becomes unsustainable. It is no longer necessary or even possible to unify the manifold in order to make it intelligible. Rather, the manifold represents its own normativity and to be intelligible, it is its contingency that must be understood.

Contemporary biology seems to embrace life's contingency, at least epistemologically (Rheinberger, 1997: S247; Jacob, 1976: 323). It has also been said that 'the biological ... has, in a sense, become a wholly contingent condition' (Franklin, 2003: 100), implying that living processes have recently become contingent - not only been understood as such - supposedly because of technological developments. However, at least since Kant has life's diversity been characterised as contingent. In this sense, Luhmann noted that, although contingency may seem a modern notion, it 'is a part of any search for necessity, for validity *a priori*, for inviolate values' (1998: 44), while Foucault said that what characterises 'modernity' is only a certain 'attitude' towards contingency (1984: 39), not the idea of contingency itself.

Canguilhem suggests that the representation of life as contingent serves a specific strategy. He refers to the supposed 'chaos' of a 'denied regularity' that may be contrasted with the 'golden age' of an 'untamed [*sauvage*] regularity' and notes that '[t]he instability of things has as its correlative the impotence of man' (Canguilhem, 1978: 148). In other words, chaos without regularity - or the empirical and contingent diversity of life without unification - anticipates continuous regulation. Since such chaos never ceases to proliferate and life's diversity continues to multiply, the traditional notion of the normative as rule continues to hold sway. However, Canguilhem believes that this unconstrained regularity is ultimately doomed for 'mediocrity': '[w]here a rule is obeyed without awareness of a possible transcendence, all enjoyment is simple' (1978:148). He adds that: '[i]n order to truly enjoy the value of the rule, the value of regulation, the value of valorization, the rule must be subjected to the test of dispute' (Canguilhem, 1978: 148).

Although both Kant and Canguilhem take life's contingency as their point of departure, Canguilhem believes that such contingency cannot be theorised through concepts. He criticises Kant's 'brilliant text' that introduced the image of a 'logical horizon' in which 'a concept can only be analysed through concepts' (Canguilhem, 2002: 343-34). Canguilhem's vital normativity breaks this conceptual circularity, because - like Nietzsche's revaluation of values - it explores the 'conception of concepts' or the creation of values (Talcott, 263, Wolfe, 2015, 206), which itself 'cannot be a concept among concepts' (Canguilhem, 2002: 343-34).

Whereas Luhmann referred to an almost Kantian '*concept* of contingency' and wondered whether a '*theory*' exists in which such a concept might be useful (1998: 46), Canguilhem recognises that contingency cannot be understood through concepts, only through living. A consideration of life's contingency is only productive when it is divorced from a theory that

generalises or rationalises it. Vital normativity is, therefore, not a concept of contingency; it is itself contingent. Not because, following Kant, a norm is always applied to the living by a particular subject, but because all norms represent the possibility of their own replacement.

> [T]he norm, by devaluing everything that the reference to it prohibits from being considered normal, creates on its own the possibility of an inversion of terms. A norm offers itself as a possible mode of unifying diversity, resolving a difference ('*résorption d'une différence*'), settling a disagreement ('*règlement d'un différend*'). But to offer oneself is not to impose oneself. Unlike a law of nature, a norm does not necessitate its effect. That is to say, a norm has no significance as norm pure and simple. Because we are dealing with possibility only, that possibility of reference and regulation which the norm offers leaves room for another possibility, which can only be its opposite (Canguilhem, 1978: 146-147).

In illness, an organism does not seek to restore a previous state of health or normality; it does not regard a correction of the living by reference to a norm. Rather, there is a 'reappearance of order' (Goldstein, 1995: 333). Canguilhem describes normativity as 'the possibility of transcending the norm, which defines the momentary normal, the possibility of tolerating infractions of the habitual norm and instituting new norms in new situations' (1978: 115). Since such normativity implies continuous transformation, he speaks of 'infractions', rather than exceptions (Canguilhem, 1978: 123; Norris, 2007: 33). This explains why vital normativity represents resistance and resilience, similar to Nietzsche's normativity with its 'fringe of insubordination' (Dagognet, 1997: 175). It regards the potential to challenge existing normative regimes and institute new ones.

When vital normativity is regarded as a description of life's ontology, it is regarded as somehow immanent in living processes; there seems to be no 'escape' from the norm (Huneman,

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2006: 657-658). However, this is only true in the sense that norms continuously emerge and demise; any normative order is only temporary. The misunderstanding of vital normativity's 'immanence' (Deleuze, 2001) as something that is *in* living processes, can be seized upon from the outside, and - in turn - applied to it, is similar to the misinterpretation of Foucault's biopower as power wielded over or applied to the living. Such understanding regresses biopower back into sovereign power, rather than appreciating Foucault's efforts to describe the transformation of power itself (1998: 139-140).

Foucault referred his students to Canguilhem's work on normativity, noting that the latter called the norm a 'polemical concept' while he suggested to call it a 'political concept' instead (2003: 50). Foucault's earlier accounts of normalisation, before he introduced the notion of biopower (Deleuze, 1999: 77; Pottage, 1998), show normativity as a political - rather than a polemical – concept. However, this can result in a normalisation of normativity. The focus then shifts to judgment and control of the living, rather than life's resistance and resilience. Such ideas correspond more with Kant's view of the norm as correction and standard of evaluation, rather than with Canguilhem's normativity as dynamic polarity. Such interpretations neutralise normativity's critical potential, turning it - in Nietzsche's words - into a reactive rather than an active force (1968: 347; Borck, Hess, Schmidgen, 2005: 35). Canguilhem seemingly anticipated such interpretations when he said that normalisation is a consequence of 'rationalisation' that relies on a traditional idea of the norm 'as imposing a requirement on an existence' (1978: 146).

Perhaps Canguilhem's focus on the 'existential priority' of the abnormal (1978: 149) and the centrality of error - following Bachelard and Nietzsche (Wolfe, 2010, 203; Talcott, 2014: 259-261) - invites the idea of the norm as correction. However, Canguilhem regarded normalisation as an inherently 'anthropological' or 'cultural' phenomenon, as opposed to

normativity which he associated with life rather than lived experience (Canguilhem, 1978: 147; but see Rabinow, 1994: 18). His idea of vital normativity refers to the confrontation of life's predicaments through a potential to re-evaluate values, institute new normative orders, and liberate the living from understanding, judgment, and mediocre regularity.

Canguilhem's Epistemological Critique; the Knowledge of Life

Canguilhem critiques Kant's ideas on rationality with regard to the living, but does he propose any alternative? After all, Canguilhem does not condemn rationality as such, but merely seeks to 'mobilise' or 'derigidify' it (Dagognet, 1985: 37). His project is not - as it was for Kant - the liberation of man from his 'self-incurred tutelage' (1963: 3), but the liberation of reason from itself (Foucault, 1985: 7).

Canguilhem recounted a conversation between him and Foucault, in which the latter argued that the rationality that threatens life is the same rationality of life itself, to which Canguilhem responded: '[b]ut let's say there is rationality and rationality' (2002: 340). He only accepted calling himself a rationalist 'if one understands by reason not so much the power to perceive essential aspects of the reality of things or of thought, as the power to determine normative aspects of life experience' (1947: 332).

It is argued here that Canguilhem proposes what he calls a 'reasonable rationality', expressed in his idea of the knowledge of life, as an alternative to Kant's rationality. Bergson previously pointed out the necessity of inquiring into life when questioning knowledge or reason:

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[a] *theory of knowledge* and *theory of life* seem to us inseparable. A theory of life that is not accompanied by a criticism of knowledge is obliged to accept, as they stand, the concepts which the understanding puts at its disposal: it can but enclose the facts, willing or not, in pre-existing frames which it regards as ultimate … On the other hand, a theory of knowledge which does not replace the intellect in the general evolution of life will teach us neither how the frames of knowledge have been constructed nor how we can enlarge or go beyond them. It is necessary that these two inquiries, theory of knowledge and theory of life, should join each other, and, by a *circular process*, push each other on unceasingly (1975: xxiii-xxiv) (emphasis added)

Canguilhem's idea of the knowledge of life, or life as knowledge, is expressed in his saying that: 'a reasonable rationality must know how to recognize its limits and integrate its conditions of exercise …. The thought of living has to derive from living the idea of living' (2003: 16). Therefore, living can only be known through living, not through reason or judgment. The title of Canguilhem's book *la connaissance de la vie* (Canguilhem, 2003) plays on this difference between knowledge *about* life and knowledge as life.

The idea of the knowledge of life has been criticised as a 'theoretical short-circuit' (Lecourt, 1975: 185, Rose, 1998: 164) which does not solve the question about the relation between knowledge and life, but circumvents it altogether. Similarly, Schmidgen has said that biological concepts that become tied to a biology of conceptual thinking represents a 'seemingly circular structure' (2014: 232), while Wolfe has said that: '[a]ll of this is really quite "dialectical", in the sense of being slippery, and almost circular – but in a productive sense' (Wolfe, 2015: 204).

Bergson similarly referred to a 'circular process' in which theories of knowledge and life continuously propel each other, suggesting that the inseparability of such theories makes the circular nature of any inquiry into life unavoidable. Canguilhem embraces this 'circularity' of

'the recurrence of the object of knowledge on the constitution of knowledge regarding the nature of this object' (1992: 48), which he regards as specific to the life sciences. So is Canguilhem attributing biological specificity to all knowledge regarding life or is he proposing an easy way out of Kant's distinction between knowledge and life by simply conflating the two?

Kant also accepted the circular nature of knowledge in saying that: "[I] confine myself to the examination of reason alone and its pure thought; and I do not need to seek far for the sum-total of its cognition, because it has its seat in my own mind" (2003: x; 1880 AA 4:10). This statement resembles Canguilhem's idea that the living can only know living through living. However, whereas Kant excludes life from understanding in order to salvage the autonomy of reason, Canguilhem includes life in knowledge - or rather, knowledge in life - by representing knowledge as a technique of living and life as a condition of possibility of understanding. Therefore, he argues against the idea that knowledge is a 'negation' of life, or 'perhaps only an expression of its fatigue' (Cherlonneix, 2008: 48, referring to Nietzsche), by following Goldstein's idea that 'biological knowledge is a form of biological being' (Goldstein, 1995: 22). However, this does not make Canguilhem an empiricist who derives knowledge from life, rather than the other way around (Lecourt, 1975, p. 185). Whereas Kant introduced a distinction between life's diversity and understanding, Canguilhem does not assume any a priori distinction between life and knowledge at all.

But does such a lack of distinction limit the knowledge of life in any way? Canguilhem himself argued against totalities and imprecise notions such as 'reciprocal penetration' that, rather than explain any relation, make substantive inquiry impossible, thereby 'kill[ing] knowledge' (Canguilhem, 2003: 184, n. 1). So do we move from knowledge to life or the other way around, or - if knowledge is one of life's forms - how is knowledge of life possible

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(Nietzsche, 1983: 121; Goldstein, 1963: 2; Canguilhem, 2002: 335, 346)? Canguilhem argues that knowledge remains possible only if from the 'totality organism-environment emerges an unconventional center from which a range of relations can open up' (2003:184, nt. 1).

Canguilhem arguably uses the notion of environment to decenter the living individual and create such an 'unconventional center', without introducing an a priori distinction between the individual and environment (or the living and the world). In order to elucidate this, reference is made to Luhmann whose use of the environment was inspired by Canguilhem (Luhmann, 1996: 527).

Luhmann also engaged with Kant when he questioned the assumption that '*cognition* is in itself rational' (Luhmann, 1998: 29-30) and said:

> Kant started with the assumption that plurality (in the form of sense data) is given and that unity must be constituted (synthesized). Only separating these aspects, thus posing complexity as a problem, makes the subject into a subject - indeed, into a subject of the connection between plurality and unity (1996: 28).

Although Luhmann suggests a 'break' with Kant and argues that his systems theory 'has no need for a concept of the subject' (1996:28; Luhmann, 1995: 208), he relies on the notion of a '*unitas multiplex*' (Luhmann, 1996: 18; Kjaer, 2006) and represents autopoiesis as the only 'possibility of seeing unity in plurality, of synthesizing a multiplicity, of reducing complexity to unity' (1996: 483). However, Luhmann's unity is not a unification of diversity but a '*unity* of self-reference and external reference' (1998:10), focusing on the process of differentiation rather than unification.

Interestingly, Luhmann referred in a footnote to Canguilhem's essay *Le Vivant et son milieu* at a crucial point in his theory where he explains the importance of the environment:

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'[T]he ontology of substance and essences … has no concept of environment at all' (1996: 537-538); while 'since the sixteenth century, word compounds containing 'self' and '*Selbst'* have proliferated in Europe… a good two hundred years were needed before anyone noticed that this presupposes an environment' (Luhmann, 1996: 538).

In the essay Luhmann referred to, Canguilhem argued that the environment had almost become a 'category of contemporary thought' and analysed its significance for a philosophy of life traditionally centering on 'the problem of individuality' (2003: 7, 165). He argued that such philosophy tirelessly shifts from one side of the individual/environment relation to the other (Canguilhem, 2003: 182-184), leaving the significance of the latter unexplored as 'a physical fact, not as a biological fact, as an already constituted fact and not as a fact to be constituted' (Canguilhem, 1978: 177). Canguilhem sought to recover the productive ambiguity of the milieu - in French denoting middle or centre, medium, and surroundings (Deleuze G., and Guattari, F., 1999: xvii) - with reference to Newton's ideas on aether, Claude Bernard's *milieu interieur* (Bernard, 1865: 129; Canguilhem, 2002: 287) and von Uexküll's *Umwelt* (1957). Canguilhem concluded that the environment is a:

> position that is indefinitely negated by exteriority. The now refers back to the before, the here refers back to the there, and so it goes on without interruption. The *milieu* is truly and purely a system of *rapports sans supports* (2003: 172).

He was conscious of the potential risk that conceptualising the environment implies; it could turn the environment into an absolute notion, losing its characteristic relativity (Canguilhem, 2003: 167) of denoting external surroundings with reference to a center, as well as a relative medium that calls such centers into question (Canguilhem, 2003: 193).

It is in fact the environment's particular relativity that addresses the vital predicament whether direction of action should be attributed to organism or environment (Goldstein, 1995: 84; Nietzsche, 1968: 344). Canguilhem does not attribute action to either, but to the continuous process of differentiation or becoming, which Goldstein referred to as '*Auseinandersetzung*' (Canguilhem, 2003: 187) and Simondon as 'individuation' (Simondon, 1964: 4, 281-282).

At the same time, Canguilhem's use of environment allows for a different point of view than that of Kant's knowing subject. Wolfe suggests that 'Kurt Goldstein and Canguilhem were, I think, on to something when they insisted that rather than say what is unique about the biological, we look to the observer: to be an organism is to have a point of view on organisms' (Wolfe, 2015, 201). Although Canguilhem seemingly adopts Kant's idea of concepts as 'point[s] of view' (Canguilhem, 2002: 343) that multiply when we seek to understand 'perceptual chaos' (Canguilhem and Planet, 1939: 94), such points of view do not refer back to a subject but to other concepts (Canguilhem, 1994: 76; Deleuze, G. and Guattari, F., 1994: 18).

But how does the point of view of the organism as observer differ from the point of view of the knowing subject? The latter can rationally understand life but never know it, so that its point of view and knowledge of life are necessarily limited. Life is, then, regarded as rationality's 'blind spot' (Maturana H.R. and Varela, F.J., 1987: 17). However, the idea of the blind spot suggests that the point of view of the organism as observer – or of the living knowing living through living - is also limited: '[t]he fascinating thing about the experiment with the blind spot is that we do not see that we do not see' (1987: 17). As Luhmann said, an observer can observe an object (first order observation), it can observe another observer observing (second order observation, which represents an alternative to the '"subjective' act" of knowing (Luhmann, 1998: 111), but an observer cannot observe himself observing (Luhmann, 1998: 27-

28, 79). The blind spot is inevitable, because every observation implies an 'unmarked space' (Luhmann, 1998: 79, 108) and the '[o]ne thing the observer must avoid is wanting to see himself and the world' (Luhmann, 1998: 111). Similarly, Maturana and Varela said that 'we live our field of vision':

> [[d]oubtless … we are experiencing a world. But when we examine more closely how we get to know this world, we invariably find that we cannot separate our history of actions - biological and social - from how this world appears to us (1987: 23).

Von Uexküll also said that his '"Umweltlehre" was a kind of externalized study of the soul performed from the point of view of the observer' (1936: 25). He described how he believed in an objective environment until, while on holiday in his Italian villa, he heard three entirely different descriptions of the Bay of Naples: one from a guidebook, one from a native to the area, and one from a 'bored American tourist' (1936: 18-20). However, for Canguilhem the circularity of life knowing life does not restrict either knowledge or life, but represents an advantage. Only the living knows what it means to live; how it lives and understands its world.

Bachelard said that no matter how much we try to become rationalists, 'life gets in the way' (cited in Dagognet, 1985: 38) and Canguilhem himself said that 'life disconcerts logic' (Wolfe, 2015, 197, Canguilhem, 1977, 1). However, Canguilhem does not seek to distinguish the rational from the empirical, as Kant did (AA 3:540; 2003: 468). He does not believe that reason is 'pure' and is, therefore, not perturbed by life getting in its way. Living one's field of vision does not impair rationality, but makes a 'reasonable' or a vital rationalism (Delaporte, 1994) possible. Such a rationality does not separate itself from life, but recognises that it only exists because of life. When life is constrained, reduced or extinguished, so is rationality.

Conclusion

It was argued that Canguilhem's epistemological critique takes issue with Kant's rationality that represents life as an exception to understanding, simultaneously included and excluded from it. Three ideas were identified as anchoring this critique and providing an alternative to Kant's views. Canguilhem regarded concepts as preserved problems rather than as tools through which life's diversity can be unified to make it intelligible. He uses concepts to trace the manifold values and problems that knowing life implies. Meanwhile, his notion of vital normativity reveals Kant's 'lawfulness of the contingent' as a mediocre regularity, by signifying contingency, resilience, and resistance to normative orders, rather than the submission of the living to principles of judgment. Furthermore, Canguilhem's use of environment decenters the living and allows for a shift in point of view from Kant's knowing subject to the organism as observer.

The idea of the knowledge of life, or the living knowing itself as living through living, means that life ceases to be an exception to understanding or rationality's blind spot. Rather, life lies at the heart of rationality and constitutes its condition of possibility. Canguilhem's alternative to Kant's rationality is a 'reasonable' or vital rationality that does not seek to introduce order to the world or impose norms on the living, but always takes the point of view of the living itself.

Canguilhem, like Kant, referred to Copernicus' revolution, but said that it changed the idea of man as the centre of the Cosmos to a universe where 'the centre is everywhere and the periphery nowhere' (Canguilhem, 2002: 33), turning man into an 'inconstant' *milieu*

(Canguilhem, 2003: 193) whose 'inconstancy is simply its becoming, its history' (Canguilhem, 1978: 116). This encapsulates Canguilhem's philosophy of life: life should be lived, irrespective of how it is judged or understood, left to its own creative contingency.

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