Filter Bubble and Enframing: On the Self-Affirming Dynamics of Technologies

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ABSTRACT

This paper tries to relate the recent concerns about personalized filtering on the internet to Martin Heidegger's philosophy of technology. In "The Filter Bubble", Eli Pariser describes how personalized filtering of online contents may result in a "self loop", amplifying the user's interests and opinions. It will be argued that there are structural similarities between the concept of the filter bubble and Heidegger's concept of technology as enframing. Also the latter addresses a filtered perception of reality which reinforces itself. In both cases, the dynamics under consideration ultimately threaten human freedom. A comparison of filter bubble and enframing might not only produce a deeper understanding of both phenomena, but reveal the discussion of self-affirming dynamics as an essential task for media studies.

Keywords

enframing, filter bubble, Heidegger, technology

1. INTRODUCTION

As the vast amount of data on the Internet is growing faster than ever, filtering becomes a necessity. Internet giants like Facebook or Google have chosen a way that is different from the editorial selection typical of traditional broadcast media. They offer *personalized* filters instead of general ones.

While for a long time this break with the agenda setting of traditional broadcast media was considered an advantage of the Internet, in the new millennium a different a different perspective evolved. In a book released in 2011, Eli Pariser expresses his concerns about this tendency towards personalization on the web. As personalization becomes more and more usual, he argues, we will increasingly become embedded in a filter bubble, in "your own personal, unique universe of information that you live in online." ([10]) The pervasive tendency towards personalization is problematic, as it "moves us very quickly toward a world in which the Internet is showing us what it thinks we want to see, but not necessarily what we need to see." ([10])

The idea is not new: In 2001, Cass Sunstein conceived personalized news as "The Daily We" and wondered if the Internet really was a blessing for democracy (cf. [13]). Also, concerns have been raised for quite a while about a fragmentation of the public sphere, where communication only takes place between people with similar interests and attitudes.

My claim in this paper is that the filter bubble may serve as a model that illustrates a more general concept about the self-affirming dynamics of our technologies: Martin Heidegger's concept of the enframing. Relating these two ideas may result in mutual benefits: it might help to establish a better understanding

of Heidegger's notoriously difficult and notoriously misunderstood concerns, and in turn the kind of problem that Eli Pariser calls attention to may be grasped more precisely in Heidegger's terms. Ultimately the paper suggests developing the concept of a local enframing as a critical tool for media studies.

2. FILTER BUBBLE

Facebook and Google were the places where Pariser first became aware of the effects of personalization. "I noticed one day that the conservatives had disappeared from my Facebook feed", he tells us. "And what it turned out was going on was that Facebook was looking at which links I clicked on, and it was noticing that, actually, I was clicking more on my liberal friends' links that on my conservative friends' links. And without consulting me about it, it had edited them out." ([10])

The same kind of editing, Pariser found out, also happened on Google: He asked two friends to search for "Egypt" on Google. The results were drastically different: "Daniel didn't get anything about the protests in Egypt at al in his first page of Google results. Scott's results were full of them. And this was the big story of the day at that time. That's how different these results are becoming." ([10])

Personalization is used at a lot of other places too: On online dating platforms, obviously, but also more and more on news portals. Why is Pariser worried about this development? He sees a number of problematic effects that occur with the rise of filtering.

One serious consequence for democracy is the decline of the public sphere: "In the filter bubble, the public sphere – the realm in which common problems are identified and addressed – is just less relevant." ([11], p. 148) Another one is the "friendly world syndrome": "[S]ome important public problems will disappear. Few people seek out information about homelessness, or share it, for that matter. In general, dry, complex, slow moving problems – a lot of the truly significant issues – won't make the cut." ([11], p. 150f) This relates to another issue: "[I]nstead of a balanced information diet, you can end up surrounded by information junk food." ([10])

However, at the centre of all these tendencies there is one effect that Pariser calls "the you loop:" "The filter bubble tends to dramatically amplify confirmation bias – in a way, it's designed to. Consuming information that conforms to our ideas of the world is easy and pleasurable; consuming information that challenges us to think in new ways or question our assumptions is frustrating and difficult." ([11], p. 88) Personalized filtering directs us towards doing the former: „[T]he filter bubble isn't tuned for a diversity of ideas or of people. It's not designed to introduce us to new cultures. As a result, living inside it, we may

miss some of the mental flexibility and openness that contact with difference creates." ([11], p. 101) This is not only a danger for democracy, but also for freedom. For freedom, Pariser explains, cannot be reduced to being able to do what you want. First you need to know what is possible to do. (cf. [11], p. 112) "When you enter a filter bubble, you're letting the companies that construct it choose which options you're aware of. You may think you are the captain of your own destiny, but personalization can lead you down a road to a kind of informational determinism in which what you've clicked on in the past determines what you see next – a Web history you're doomed to repeat. You can get stuck in a static, ever-narrowing vision of yourself – an endless you-loop." ([11], p. 16)

Also Cass Sunstein perceived filtering as a threat to democracy and freedom.[1] An important difference, however, is that Sunstein was concerned with personalization that the user consciously chooses. This does not hold in the filter bubble: "When you turn on Fox News or read The Nation, you're making a decision about what kind of filter to use to make sense of the world. It's an active process, and like putting on a pair of tinted glasses, you can guess how the editor's leaning shapes your perception. You don't make the same kind of choice with personalized filters. They come to you – and because they drive up profits for the Web site that uses them, they'll become harder and harder to avoid." ([11], p. 10) So for Pariser maybe the most dangerous thing about filter bubbles is that they are not aware of them: "In fact, from within the bubble, it's nearly impossible to see how biased it is." ([11], p. 10) Accordingly, the mission of his book, and the first step towards solving the problem, is to render the filter bubble visible (cf. [11], p. 20). A second step would be to think about how serendipity happens and how it could be promoted by software design decisions (cf. [11], p. 235f).

My claim in what follows will be that the filter bubble can serve as a model to understand a more generic concept about the self-amplifying dynamics of technologies: Martin Heidegger's concept of technology as *enframing*.

3. ENFRAMING

Martin Heidegger's esoteric and idiosyncratic terminology has given rise to a lot of misunderstandings. As often, building bridges between different kinds of vocabularies might help to clarify things. I will try to do this by relating the dynamics Eli Pariser describes to the ones Heidegger describes.

If for Pariser it is the enormous amount of data online that requires filtering, Heidegger's concern is the inexhaustible richness of *Being* getting filtered. Being is no mythic or divine entity but simply refers to the meaning of the word "to be", to our understanding of what it means that something "is". So Being obviously is strongly intertwined with language.

The inexhaustible richness of Being is not a kind of mythological postulate, but a simple consequence of the historicity of Being. As Heidegger tries to show, every culture and epoch had its own understanding of Being. This understanding changes, as language changes. And as we have no idea about how

language might develop, there is no basis for determining a definite set of *possible* understandings of Being.

As a consequence, every historical culture has its own *clearing of Being*, which is at the same time *concealment* and *unconcealment*. While a vast majority of possible understandings of reality remain hidden for us, a certain understanding unfolds. Thus with every clearing of Being, only certain few aspects of reality become accessible for us.

This means that the respective clearing defines our possibilities in thinking and acting, and, more fundamentally, our possible horizons of meaning. Richard Rorty puts it this way: "For Heidegger – early and late – what one is is the practices one engages in, and especially the language, the final vocabulary, one uses. For that vocabulary determines what one can take as a project." ([12], p. 109)[2] The clearing of Being thus provides a refined concept for discussing a matter that also Pariser is concerned with: "Not knowing that it is possible to be an astronaut is just as much a prohibition against becoming one as knowing and being barred from doing so." ([11], p. 112f.) The matter at stake is freedom.

If the clearing of Being is historical, it can change. With Heidegger, we can grasp freedom precisely as the *mutability* of the conceptual framework that mediates our access to reality. Freedom relies on what I want to call *hermeneutic oscillation*: on a condition where various modes of unconcealment are suspending and balancing each other.[3]

We can consider the clearing of Being as a filtering of the inexhaustible richness of Being: "Beings can be as beings only if they stand within and stand out within what is cleared in this clearing." ([7], p. 178) Freedom thus requires that this filtering must not become static: It must not always be the same aspects of reality that get filtered out or that make it through the filter. Only then new aspects of reality may appear and provide us with new possibilities of thinking and action.

Heidegger's history of Being could thus be rephrased as a history of filters on the possible meanings of Being. In the modern age, or, as Heidegger puts it, "the Age of the World Picture", "an essential decision takes place regarding what is, in its entirety." ([8], p. 130) Man is understood as the *subject* and all entities become *objects*: "Man becomes that being upon which all that is, is grounded as regards the manner of its Being and its truth. Man becomes the relational center of that which is as such." ([8], p. 128) As man is placed as the relational center of everything that is, the world becomes a picture, a representation for him.

"Here to represent [vor-stellen] means to bring what is present at hand [das Vorhandene] before oneself as something

[1] "Unanticipated encounters, involving unfamiliar and even irritating topics and points of view, are central to democracy and to freedom itself." ([13])

[2] As we will see in the course of the following considerations, the clearing of being is not only constituted by language, but also by technologies and technical artefacts. Both aspects have been addressed frequently in Heidegger's writings.

[3] For Heidegger's concept of freedom, cf. "On the Essence of Truth, p. 115-138 in [7]. Understood in this way, freedom is not something that man possesses as a property. "At best, the converse holds: freedom, ek-sistent, disclosive Da-sein possesses man – so originally, that only it secures for humanity that distictive relatedness to being as a whole which first founds all history." ([7], p. 127)

standing over against, to relate it to oneself, to the one representing it, and to force it back into this relationship to oneself as the normative realm." ([8], p. 131) This means that everything that is, *is*, insofar it can be related to man. With other words, everything that cannot be related to man is filtered from the clearing of Being: all aspects of reality that are not relevant to man cease to exist.[4]

My suggestion is that the age of the world picture, as a reconfiguration of the ontological sphere, structurally corresponds to the introduction of personalized filtering on the internet: Everything that cannot be related to oneself as relevant in some way is filtered out of existence.

For Heidegger, the modern reconfiguration of the clearing of Being has serious ethical consequences, as it implies that in everything man does, he is only concerned with aspects of reality that in some way relate to himself. However, this constellation is radicalized with the advent of modern technology.

Heidegger calls the *Wesen* of technology the enframing [*Gestell*]. While Wesen usually is translated as essence, I suggest that *ontological dynamics* is a more appropriate translation. For in Heidegger the notion does not refer to any supposed nature of things, but to the way they relate to changes in the clearing of Being.[5] Technology, according to Heidegger, is not merely a means. "Technology is a mode of revealing. The dynamics of technology are situated in the realm where revealing and unconcealment take place, where aletheia, truth, happens." ([7], p. 319[6])

What are those ontological effects of technology that Heidegger describes as Ge-stell? Everything is revealed only as *standing-reserve* [*Bestand*], things may only enter the clearing of Being to the extent that they can be conceptualized as an instrument or challenged as a resource. Observe that the Ge-stell mode of revealing is narrower than the world-picture mode:

"Whatever stands by in the sense of standing-reserve no longer stands against us as object." ([7], p. 322) Now what in some way relates to man may no more pass through the filter but only that which is useful for our purposes. This means that our possibilities of being in the world become more narrow too:[7] Heidegger contrasts the river Rhine, technologically perceived as an energy supplier or as a tourist attraction, with the Rhine as it appears in the poetry of Hölderlin (cf.[7], p. 321).

Technology filters reality in a way so that we perceive only the aspects of reality where it is successful.[8] And the more we perceive technology as successful, the more it will reinforce not only its own take on reality, but also the corresponding horizons of meaning that drive our activities. "Man clings to what is readily available and controllable […], concealing as a fundamental occurrence has sunk into forgottenness." ([7], p. 132f) In a similar way, Pariser states that the filter bubble transforms "known unknowns into unknown unknowns". ([11], p. 106) We can explore this structural resemblance further: "Left to their own devices, personalization filters serve as a kind of invisible autopropaganda, indoctrinating us with our own ideas, amplifying our desire for things that are familiar and leaving us oblivious to the dangers lurking in the dark territory of the unknown." ([11], p. 15) As everything is filtered that is mysterious or does not fit into the established conceptualizations, those conceptualizations become static. "By disavowing itself in and for forgottenness, the mystery leaves historical man in the sphere of what is readily available to him […]," states Heidegger. And Pariser stresses that "[i]f personalization is too accute, it could prevent us from coming into contact with the mind-blowing, perception-shattering, experiences and ideas that change how we think about the world and ourselves." ([11], p. 15)

Both in the filter bubble and in enframing, man is stuck in a certain conceptualization of reality. When Heidegger says that thus the essence [Wesen] of man is threatened by technology (cf. [7], p. 333), this does not involve any essentialist claims about the nature of man. On the contrary, it means that the ontological dynamics of man have come to stagnate; that the indefinite possibilities of what man might be have been narrowed down to one single understanding of man that is amplified and reinforced by the relational system of our technologies. In the same way, "the economics of personalization," according to Pariser, "push toward a static conception of personhood." ([11], p. 216)

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[4] As the man of the modern age, according to Heidegger, is metaphysically conceived as *animal rationale*, there are first and foremost two modes of that relation: either things serve as an *experience* [*Erlebnis*] for man as an animal, or things can be *measured* scientifically by rational man.

[5] Although Heidegger dedicates several pages to explaining his reinterpretation of the term (cf. e.g. [7], p. 334ff), many interpreters still hold on to the traditional notion of Wesen.

[6] Translation modified. German original: „Die Technik west in dem Bereich, wo Entbergen und Unverborgenheit, wo aletheia, wo Wahrheit geschieht." ([6], p. 17) This statement has to be read carefully: The realm, where the dynamics of technology, understood in the Heideggerian sense as enframing, are situated, is the clearing of Being. In many of his writings, Heidegger indicates that this clearing is not only constituted by language, but also by artifacts, tools and machines (cf. e.g. the *tool analysis* in "Being and Time"). So there is always a technological aspect in the clearing of Being. This aspect, however, is to be distinguished from enframing as a certain tendency in the dynamics of the clearing of Being in the age of technology. For any attempt to estimate Heidegger's relevance for media studies, it is essential to clarify the exact relation between technological artifacts and the tendency of enframing: *What kinds* of artifacts and infrastructures do promote enframing, and *why*?

[7] "The only thing that is ever questionable is how we can measure and fathom and exploit the world as quickly as possible, as securely as possible, as completely as possible […]." ([2], p. 41f.)

[8] Quantification is an essential feature in the filtering that renders technological access to reality successful: "Calculation refuses to let anything appear except what is countable. Everything is only whatever it counts. […] Only because number can be infinitely multiplied, irrespective of whether this occurs in the direction of the large or small, can the consuming dynamics of calculation hide behind its products and lend to calculative thinking the semblance of productivity - whereas already in its anticipatory grasping, and not primarily in its subsequent results, such thinking lets all beings count only in the form of what can be set at our disposal and consumed.." ([3], p 235, translation modified)

This section tried to make transparent that Heidegger's philosophy of technology does not address any supposed opposition of nature and technology, but a self-amplifying dynamics that structurally resembles the one described by Eli Pariser's filter bubble. One thing we can learn from these similarities is that there are actually multiple ways of drawing on Heidegger for a critical enquiry into today's media environments. The more traditional way would be analyze if and how media and technological infrastructures contribute to enframing by making everything available as a standing reserve. However, for those who do not accept Heidegger's narrative about the totality of technological access to the world in our age, there exists another way of making use of Heidegger's considerations. Since enframing, like the filter bubble, is about self-amplifying dynamics, the concept can also be employed without any claims of totality, to identify *local enframings*:[9] conceptual frameworks that reinforce themselves, horizons of meaning that we have become stuck in without being aware of it. In this approach, *concrete* media or technological infrastructures could be analyzed with respect to their ontological dynamics: Do they promote hermeneutic oscillation or do they establish local enframings? Do they allow for a mutability of concepts, or do they reinforce established understandings? The first crucial step in destabilizing local enframings, however, might be to *realize* that we always are exposed to a clearing of Being that is constituted by our language and our technologies and that is in danger of becoming static.

4. THE SELF-AFFIRMING DYNAMICS OF TECHNOLOGIES

According to Heidegger, the lock-in in one clearing of Being is particularly strong because man is not aware of the filtering that is at work in this clearing: "Man stands so decisively in subservience to on the challenging-forth of enframing that he does not grasp enframing as a claim, that he fails to see himself as the one spoken to, and hence also fails in every way to hear in what respect he ek-sists, in terms of his ontological dynamics [Wesen], in a realm where he is addressed […]." ([7], p. 332, translation modified)

After Heidegger had conceived the revealing in the mode of enframing as the *supreme danger*, his text takes an irritating turn. He refers to a verse of Hölderlin to declare that "where danger is, grows [t]he saving power also." ([7], p. 333)

This might seem arbitrary, but Heidegger explains: "The danger itself, if it is *as* the danger, is the saving power." ([8], p. 41) If the danger becomes perceived explicitly as the danger, this might free us from the lock-in in enframing: "[W]hen we once open ourselves expressly to the *ontological dynamics* [Wesen] of technology we find ourselves unexpectedly taken into a freeing

[9] The notion of a local enframing is choosen in order to discard two aspects of totality connected to Heidegger's original concept: 1. the *planetary* dimension of enframing which pervades all of the contemporary world and 2. the *totality* of the specific interpretation of reality that Heidegger links to the self-affirming dynamics of technology. As we can learn from Pariser, such dynamics may be *restricted* to small groups or even individuals, and they are not necessarily linked to *this specific* understanding of reality. The point here is not to qualify the scope of Heidegger's cultural diagnostics, but to enhance the applicability of the concept for analyzing self-affirming dynamics in a variety of concrete technological settings.

claim." ([7], p. 331, translation modified) Heidegger seems to hope that, as the ontological dynamics of technology become more intense, they might also become visible as such: as a selective filtering that amplifies established concepts and horizons of meaning.

Self-affirming dynamics are not exclusive to technology but denote a danger that *always* threatens man. Being exposed to the potential infinity of possible ways of conceptualizing the world, man tends to hold on to those kinds of conceptualizations that he already is familiar with: "As ek-sistent, Dasein is insistent." ([7], p. 132) Also for Pariser, the consumption of news that confirm one's own belief existed before the filter bubble. "And while this phenomenon has always been true, the filter bubble automates it. In the bubble, the proportion of content that validates what you know goes way up."([11], p. 89)

I want to suggest that the *automation* of the phenomenon might be a crucial point. As the self-affirming dynamics in questions have been objectified into software by several different internet platforms who offer personalization, and as Pariser has written a book about it, the problem has become explicit. In a way, the danger now is unconcealed *as* the danger. Pariser's aim was to render the filter bubble visible, just like Heidegger's concern was whether enframing would reveal itself as such.

The structural similarities of filter bubble and enframing indicate that a useful notion of a local enframing can be developed. However, one has to restrain from a premature identification of filter bubble and enframing. Instead, the differences of the two concepts have to be clarified. Here only a few of these differences are exposed in order to raise some productive questions.

I. One difference is that the filter bubble seems to be an *epistemological* problem, while the enframing is an *ontological* one. The filter bubble defines what we are able to find out about, while the clearing of Being ultimately defines what *is*. This is the case, because the filter bubble is not our only access to reality. We also find out about things when we are not online. But, in contrast, there is nothing outside of the clearing of Being.

This difference, however, might blur, as we spend more and more of our lives online and as the internet begins to colonize our offline world with the development of augmented reality. If ultimately, as Pariser describes (cf. [11], p. 207ff), our whole lives might be absorbed by the filter bubble, would those filters thus obtain the ontological totality that Heidegger envisioned? This might depend upon whether interactions with other individuals in the social sphere might allow us to break through the filters. We are thus lead to another important difference.

II. While, according to Pariser, every individual human being is enclosed in its own filter bubble, Heidegger became less and less concerned with individuals in the course of his philosophical career. After the individualistic "Being and Time", he came to be more occupied with the fate of the Germans as a "historic people". After World War two, when his philosophy of technology took shape, he was interested in mankind as such, since he supposed that with technology, European thinking had pervaded the whole globe. Every individual is enclosed in its own filter bubble, but the whole mankind is enclosed in enframing. So while social interaction and communication might crash our individual bubbles, Heidegger is interested in the basic understandings that we all already take for granted and which thus cannot be shaken that easily by communication. In particular this is the case for understandings which are entailed by the communication

infrastructures themselves.[10] Moreover, it is the case for understandings that influenced the design of our communication technologies.

This raises also the question about the relation of individual filter bubbles and the ones that pervade the whole society. Filtering algorithms are developed and programmed on the basis of certain established understandigs and horizons of meaning. As Heidegger mentions, the "functionaries" for "making public civilized opinion" are "at once driver and driven" ([4], p. 212), they constitute understandings and are constituted by them. If one tries to follow Pariser's suggestion and looks for ways to design and implement serendipity (cf. [11], p. 235f), one has to be aware: Also programming decisions tend to be a result of a filtered perception of reality.

III. There is a certain ambivalence within Pariser's grasp of the problem. Although he generally seems to be concerned about a loop that reinforces ones attitudes and interests (as described in Section 2), there are also some passages where he seems to be worried that the *authentic self* of the user could become *manipulated* by the filters: "You become trapped in a you loop, and if your identity is misrepresented, strange patterns begin to emerge, like reverb from an amplifier." ([11], p. 125) If the problem was only that of a misrepresentation of an authentic self, then building Popperian falsification strategies into the filtering algorithms (cf. [11], p.132ff) might really help. This understanding of the problem, however, drops the insight, how deeply we are shaped by our language and our technologies. [11]

As he became aware of how fundamentally man was constituted by the clearing of Being, Heidegger stopped using his early notion of authenticity. "For there is no such thing as a man who is as a man singly and solely by his own virtue." ([7], p. 337, translation modified) It is worth noting that Heidegger's "Question Concerning Technology" contains an answer to Werner Heisenberg. Heisenberg had described the technological age as a condition where man always and everywhere only encounters himself (cf. "Das Naturbild der heutigen Physik", pp. 109-127 in [9]). Heidegger objects that man "ek-sists, in terms of his

ontological dynamics [Wesen], in a realm where he is addressed, so that he *can never* encounter only himself." ([7], p. 332, translation modified, emphasis in the original text) The realm where he is addressed is the historical clearing of Being which is constituted by language and technological artefacts. In this respect Heidegger agrees with many contemporary theorists of media and technology: There is no authentic pretechnological self. However, such a notion of authenticity is not needed as normative concept for critique, since the Heideggerian understanding of freedom as hermeneutic oscillation provides an alternative normative perspective. From this perspective, the identification of self-amplifying tendencies in our technologies – which is, though on different levels, the aim of both Heidegger and Pariser – assumes an essential role in any critical inquiry into our evolving online media environments.

5. ACKNOWLEDGMENTS

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[10] How communication technologies interfere with language became an essential question in several of Heidegger's late writings. E.g., in [1], Heidegger addresses the univocity (i.e. the suppression of hermeneutic oscillation) that language needs to assume in order to become suitable for automated data processing. This is an issue that continues to be relevant as the *semantic web* emerges. It might be instructive to discuss *ontology engineering* in the context of Heidegger's critique of metaphysics.

[11] Maybe Pariser's occasional worries about the manipulation of an authentic self express discomfort about the fact that this sphere, where man is addressed and constituted, is, to an increasing extent, organized according to the interests of private and profit-oriented corporations. Pariser calls this "the commercialization of everything – even of our sensory apparatus itself." ([11], p. 215) Doubtlessly, the static self produced by filter bubbles is useful for profit-oriented enterprises as it makes the behaviour of consumers computable. For Heidegger, however, the desire to calculate human behaviour is not just an effect of capitalism but rather of the cybernetic paradigm in the age of technology.