

Whistleblowing and Information Ethics: Facilitation, entropy, and ecopoiesis.

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ABSTRACT: This paper analyses whistleblowing from the perspective of Floridi's information ethics (IE). Although there is a vast literature on whistleblowing using micro-ethical (egopoietic) or meso-ethical (sociopoietic) frameworks, whistleblowing has previously not been researched using a macro-ethical or ecopoietic framework. This paper is the first to explicitly do so.

Empirical research suggests whistleblowing is a process rather than a single decision and action. I argue this process evolves depending on how whistleblowing is facilitated (positively or negatively) throughout that process, i.e. responding to whistleblowers and providing information about whistleblowing activity. The paper develops a typology of whistleblowing facilitation to complement Floridi's IE.

The findings suggest that for whistleblowing to be beneficial to the informational environment, facilitation must filter out untrue whistleblowing, and achieve closure with the whistleblower, especially when whistleblowing is mistaken or deliberately false. I also find that publishing information about whistleblowing activity can be beneficial for the informational environment, but only if all organizations or all regulators do so.

KEY WORDS: ecopoiesis, Floridi, information ethics, whistleblowing

1. Introduction

Whistleblowing is ‘the disclosure by organization members of illegal, immoral or illegitimate practices under the control of their employers, to persons or organizations that may be able to effect action’ (Miceli & Near, 1984: 689). Whistleblowing always involves a disclosure of information. Two recent examples have raised questions around the ethical status of the information disclosed by whistleblowers.

Wikileaks is a contested whistleblowing channel. Some have welcomed it as a harbinger of democracy and transparency, while others demonize it as too disruptive to international diplomacy. Edward Snowden’s whistleblowing on the NSA Prism and other intelligence gathering programs has sparked debates about whether the public knowing that a government agency has access to most (if not all) of the meta-data about our conversations and whereabouts, informs us of a threat to democracy (NSA programs are undemocratic and a human rights violation, the argument goes) and hence is justified, or constitutes a threat to democracy because revealing the scope of NSA programs undermines their effectiveness in protecting democracy.

Resolving these debates is not the aim of this paper. The analysis in this paper provides a novel prescriptive approach for evaluating the ethical status of the information disclosed through whistleblowing. Whistleblowing has so far been researched and analyzed at a micro-ethical and meso-ethical level. There is a vast literature focusing on the whistleblower: their motives, their psychological ‘big 5’ characteristics, the wrongdoings people are more or less likely to blow the whistle on, the retaliation they experience, etc. Good overviews of that literature can be found in Near, Miceli and Dworkin (2008) and Mesmer-Magnus and Viswes-

varan (2005). Brown (2008) offers the most comprehensive study of organizational factors influencing whistleblowing to date, and there is also a stream focusing on rationales and legal aspects of whistleblowing policies (Lewis, 2010; Vandekerckhove, 2006, 2010; Vaughn, 2013). A recent *status quaestionis* of the field of whistleblowing research can be found in Brown, Lewis, Moberly and Vandekerckhove (2014). Whistleblowing has never been studied from a macro-ethical point of view, i.e. from the perspective of an ethics of environment. Luciano Floridi's information ethics (IE) is such a macro-ethical approach because it regards information as intrinsically valuable and it provides a framework to evaluate a practice in terms of the extent to which whistleblowing causes or prevents harm to informational objects and regards information as intrinsically valuable. That is a first contribution of this paper to the literature on whistleblowing. It is the first paper to explore whistleblowing from an ecopoietic perspective. My aim, in line with Floridi's IE, is not to provide an ethical evaluation that is superior or overrides egopoietic or sociopoietic evaluations but rather offer complementary insights that can be useful for practitioners and policy makers when designing and implementing whistleblowing policies, and when debating the value of public whistleblowing.

A second contribution of this paper stems from the argument in this paper that whistleblowing cannot be evaluated separately from its facilitation. Floridi (2011a) described journalists and leaks sites as facilitators of whistleblowing. It is however important to note that not all whistleblowing constitutes a disclosure to the public via the media. Empirical research shows only a tiny minority of whistleblowers try to raise a concern through the media (Brown, 2008; PCaW, 2013). Other whistleblowing might be to a regulatory agency, a professional body, or might even remain internal to the organisation. Research further suggests whistleblowing is not a one-off or a single act. Rather it is a process of escalating a concern though

repeatedly raising the concern in different ways to different recipients depending on how the whistleblower is responded to (Brown, 2008; Miceli & Near, 1992, PCaW, 2013, Rothschild & Miethe, 1999). Thus the whistleblowing literature distinguishes between internal and external whistleblowing but nevertheless regards both as one whistleblowing process in which external whistleblowing is preceded by internal whistleblowing (Near et al, 2008). Organisational whistleblowing policies and procedures are regarded as potentially facilitating safe and effective internal whistleblowing (Berry, 2004; Brown & Latimer, 2011; Brown, Meyer, Wheeler & Zuckerman, 2014; Vandekerckhove, Brown & Tsahuridu, 2014). Organisational whistleblowing policies and procedures facilitate internal whistleblowing successfully if the whistleblower does not experience retaliation (safe) and the alleged wrongdoing is stopped (effective). However, organisational whistleblowing policies and procedures come in different shapes and forms. Some entail multiple channels and interfaces with independent case-handlers (ACCA, 2016), while others merely consist of a poster on the office wall encouraging employees to speak up, or entail nothing more than mentioning in the code of conduct that raising a concern is desirable (Hassink et al, 2007; Moberly & Wylie, 2011). Needless to say that not all internal facilitation of whistleblowing is successful. Internal whistleblowers are often retaliated against, and even more often find their concern ignored (PCaW, 2013). This paper also contributes to the literature by developing a typology of whistleblowing facilitation which I apply to an analysis of whistleblowing as *ecopoiesis*.

The paper is structured as follows. In the next section I sketch Floridi's IE and discuss how its *ecopoietic* characteristics differ from other ethical frameworks, in particular virtue ethics and previous approaches in information ethics. The section after that brings together previous empirical research on whistleblowing to argue that whistleblowing is usually facilitated in more than one way. I then proceed to bring the two together in a section that contains the con-

tributions of this paper. Namely I develop a typology of whistleblowing facilitation and provide a systematic analysis of whistleblowing from the perspective of ecopoietic IE. One of the distinctions the analysis makes use of is that between true and false whistleblowing. I discuss the difficulty of managing false whistleblowing in a separate section. I conclude the paper with implications for practitioners and policy makers.

2. Information Ethics (IE) as ecopoiesis

Floridi started to develop his approach to *Information Ethics* (IE) at the end of the 1990s in a context of an increased interest in computer ethics and privacy issues. Although Floridi writes that ICT brought about a new Copernican revolution, the resulting IE paradigm is not restricted to issues affecting any form of ICT (Floridi, 2008, 2010a).

Floridi (2008) argues the science triggered by the Turing machine and current ICTs re-ontologize us. They displace humanity from its central position in both our understanding of the world and of ourselves, even more so than Copernicus, Darwin, and Freud did. ICTs are not just enhancing or augmenting devices with an interface panel through which robots like dishwashers 'enter' our human world. ICTs 'engineer environments that the user is enabled to enter through (possibly friendly) gateways' (Floridi, 2010a: 13). This engineered environment does not enter our human world. Rather, we use (digital) interfaces to enter or be present in the infosphere. For Floridi (2010a: 13), humanity migrates 'from its *Umwelt* to the infosphere itself'. Hence the infosphere is reality seen from an informational level of abstraction.

The new understanding of the world and of ourselves - re-ontologization - is not consistent with an understanding of responsibilities and duties that sees humans as merely users or producers of information. Rather - this is a characteristic of Floridi's IE - we need an ethical ap-

proach that understands humans as part of the infosphere. The implication is that we are informational objects amongst and interacting with other informational objects. These interactions constitute the environment in which every informational object has intrinsic value. This means that IE is ontocentric, not anthropocentric. The flourishing of what *is* - informational entities - is good. The responsibilities and duties are ecopoietic, meaning they are duties and responsibilities of making or constructing the environment (the infosphere). IE is a consequentialist ethics. What matters are the effects of certain actions or arrangements on the status of informational entities - their well-being as informational entities. Floridi (2010a) posits 4 fundamental principles of IE as an ecopoietic approach:

- (0) entropy ought not to be caused in the infosphere (null law)
- (1) entropy ought to be prevented in the infosphere
- (2) entropy ought to be removed from the infosphere
- (3) the flourishing of informational entities as well as of the whole infosphere ought to be promoted by preserving, cultivating and enriching their properties.

It is clear from this that in IE, entropy is evil. In IE, entropy is defined as any form of destruction or corruption of informational entities, or ‘any form of impoverishment of Being’ (Floridi 2010b: 84). Thus confusing, meaningless or misleading information causes entropy in the infosphere if it harms informational entities. Any kind of destruction, corruption, pollution, or depletion of information entities is entropy. We ought to act so that informational entities flourish, i.e. so they can be what they are in terms of information: meaningful, truthful, and with minimum entropy. Floridi (2011b) and Turilli and Floridi (2009) insist information implies truth; false semantic data is not information. Thus misinformation or disinformation per se generate entropy, and hence constitute unethical acts in IE because these deplete Being in the infosphere. However, while the truthfulness of semantic data is a necessary condition for

an ethical informational act (such as whistleblowing), it is not a sufficient condition. As IE is consequentialist, it is necessary to assess the impact that the informational act has on the infosphere and on all the informational entities existing in it.

Egopoietic - who should I be - or sociopoietic - how should I relate to others - approaches to how humans act and interact through information do not suffice to capture the re-ontologizing implications of the information age. Users and producers do not merely interact with the infosphere as input and output. Rather, they are part of the infosphere, and so are non-human information entities (an organization, a report, a machine, a product, etc). Egopoiesis - who should I be - does not suffice for current issues around information in our society because the infosphere is too complex. I have responsibilities to an environment not just because I flourish in that environment but also because others who do not affect me in any way and never will, both shape and shape themselves through that environment in ways I cannot foresee. In that sense our interactions include those we are not aware of. These interactions are nevertheless real. A sociopoietic approach evaluates human interactions mediated by information, i.e. libel, privacy, hacking, information asymmetries, etc. The considerations here are with regard to other users and producers (now or in the future). In Floridi's IE however, we consider agents as part of the infosphere, not merely as users or producers of something that is distinct to them. Interactions between agents or of an agent's self-action are assessed on the basis of their impact on the infosphere; a good impact means an increased flourishing of informational entities. Hence a macro and ecopoietic IE that enables us to conceive of our responsibilities towards the infosphere and as part of the infosphere, is an additional and useful ethical perspective. That is how Floridi presents his macro-IE. Not as an ethical perspective that makes other perspectives outdated or inferior, but as an ethical perspective we did not have yet whilst our world had already changed.

3. Whistleblowing and facilitation of whistleblowing

In the literature on whistleblowing, facilitation of whistleblowing has been described as comprising of governance controls that ‘expand opportunities for employee disclosure’ (Berry, 2004: 2), strategies of ‘institutionalizing improved disclosure channels and investigative responses’ (Brown et al., 2014: 458), and interventions transforming organizational cultures ‘from closed hierarchies (in which risks of mistakes or wrongdoing are not openly acknowledged) to more open environments (with more sophisticated systems of ensuring that individuals and organizations take responsibility for problems and can deal with them in an open, constructive and efficient manner)’ (Brown & Latimer, 2011: 147). The assumption in these descriptions is that ‘facilitation of whistleblowing’ is an intervention of which the aim is to make whistleblowing more successful, i.e. safe for the whistleblower and effective in stopping wrongdoing (Vandekerckhove et al., 2014). In this section I provide evidence that whistleblowing is a process rather than a one-off act, and argue that because of this facilitation of whistleblowing is likely to occur a number of times. The implication is that facilitation of whistleblowing can be either successful or unsuccessful, and determines how the whistleblowing process will unfold. This has important further implications for the evaluation of whistleblowing from an IE perspective.

Let me briefly set out the argument before fleshing out the empirical basis and specifying further implications for the analysis. From an IE perspective, a whistleblower is an information entity. It is a person who believes there is wrongdoing and who raises a concern about this. Raising the concern constitutes a communication of information (wrongdoing) to another information entity (recipient) about an information entity (wrongdoer - individuals within the

organization, systems within the organization, or the organization as whole). The recipient can be a journalist or a leaks site, but can also be a regulatory agency, an NGO, a trade union, a professional body, a compliance officer, an internal auditor, a HR manager, etc. If whistleblowing is a process, i.e. it occurs through a sequence of communications of information to different recipients, then the impact of the whistleblowing communication on the infosphere and all information entities that exist within it is partly determined by the characteristics of the recipient as information entity. Why? Each of these recipients can attempt to facilitate successful whistleblowing (safe and effective) but they differ as to who will have access to the whistleblower's information and the kind of interventions or sanctions they can take towards the wrongdoers. Hence because different recipients can impact the flourishing of information entities in different ways, for the ethical evaluation of whistleblowing it matters who the recipient is. I unpack this argument in the remainder of this section. I will first provide empirical evidence for the claim that whistleblowing is a process, and will then clarify different characteristics of recipients.

Research shows whistleblowing involves a process of escalating a concern, rather than one single decision to speak out or not. Brown (2008), Miceli and Near (1992), and PCaW (2013) provide empirical evidence that whistleblowing typically starts with workers raising a concern with their line manager, or in any case inside their organization (internal whistleblowing). Findings from PCaW (2013) suggest not all whistleblowers escalate their concern to an external recipient. Of a sample of 1,000 people who called Public Concern at Work in the UK for whistleblowing advice, 13.2% had not raised a concern with anyone, 38.5% made one attempt to raise their concern, 34.2% two attempts, 11.9% three times, and 2.2% four times. The findings also suggest the most likely response from management when whistleblowers raise a concern internally is a non-response; they are simply ignored. There were some differ-

ences across industry sectors with those in the financial sector indicating a higher likelihood that action to stop the wrongdoing was taken. Those in the health and care sector showed the highest expectations that wrongdoing would be stopped but were also most likely to describe their situation as worsening throughout the process (PCaW, 2013).

In Brown (2008) only 3% blew the whistle immediately to the media. In PCaW (2013) that was 0.5%. There is also ample evidence that whistleblowers are more likely to raise their concern with someone outside of the organization (external whistleblowing) if their internal whistleblowing is met with reprisal from management (Donkin, Smith & Brown, 2008; Miceli & Near 1992, 1994). PCaW (2013) traces the first 4 attempts whistleblowers make to raise their concern. Where whistleblowing remained internal, internal audit and hotlines were increasingly used as a recipient as whistleblowers made further attempts to raise their concern, showing a similar pattern to the use of regulators and professional bodies as external recipients (PCaW, 2013). This suggests that as the whistleblowing process unfolds the whistleblower tends to seek a recipient that shows independence, rather than merely shifting from internal to external whistleblowing.

The implication is that even if we use the word 'whistleblowing' to only denote external whistleblowing, we cannot deny the process leading up to external whistleblowing (Miceli & Near, 1992). Brown (2008, 2012) and Vandekerckhove (2012) suggest there are two main and probably equally important reasons why people do not raise concerns: fear of retaliation, and a belief that the wrongdoing will not be dealt with. Hence, whether or not someone makes a further attempt to raise a concern, and how they do that is influenced by expected and effective reactions - i.e. retaliation or support, and being ignored or investigated and corrected. Therefore we can say that whistleblowing is determined by how successful the facilitation is at each instance where the whistleblower raises his/her concern.

Vandekerckhove (2010) posits a 3-tiered model of whistleblowing distinguishing one internal and two external tiers (to a regulator and public). The model is based on an analysis of legislative developments in the 1990s in Australia and the UK, and has recently been adopted in the Council of Europe Recommendation on Protecting Whistleblowers (Council of Europe, 2014). The 3-tiered model (figure 1) maintains a balance between on the one hand the public disclosure of information about organizational wrongdoing (i.e. the public's right to know) and on the other hand the organizational interests in keeping such information out of the public realm.

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In its first tier, which is internal, the information does not leave the organization. Workers raise their concerns with supervisors, top management, board members, or other designated persons (ethics officer, compliance manager, auditor, or internal hotline). In the second tier, the whistleblower raises his/her concern externally, to an agent acting on behalf of the wider society. This includes regulators and enforcement agencies. This second tier is only accessed when first tier whistleblowing is unsuccessful, or in other words, when the organization fails to correct the wrongdoing for which it carries responsibility, fails to deal adequately with the concern being raised and the person raising it, or when the whistleblower has grounds to believe raising concern internally will lead to reprisal or cover-up. Hence, the second tier is an external one, but the public would not know the whistle had been blown to that external recipient. Still, this second tier recipient is expected to investigate and take action towards the organization where the wrongdoing occurred. At this stage, the content of the concern the

whistleblower raises will not only include information about the wrongdoing, but also about the organization's failure to deal with the internal whistleblowing in a correct way.

The third tier is also external and involves recipients that will make the whistleblowing information known to the wide public. In addition to the content of the concern of the whistleblower raised at the second tier, third tier whistleblowing concerns will include information about various informational entities: the wrongdoing, about the organization's failure to deal with internal whistleblowing in a correct way, and about a regulator or other second tier recipient not taking the concern seriously. In this sense, third tier recipients function as watchdogs over second tier recipients' failure to take their deterring or rectifying duties seriously. In short, the principle of the 3-tiered model is not that organizations become directly accountable to the wider society for their practices, but that they are held accountable for dealing adequately with concerns being raised with them and the persons raising them (Vandekerckhove, 2010). The 3-tiered model (figure 1) shows different interactions between informational entities in the context of whistleblowing. The full arrows in figure 1 indicate the escalation of raising a concern in the whistleblowing process. The dashed arrows indicate information about whistleblowing activity. This is a new phenomenon that is likely to become more common in the future. Some companies (e.g. Siemens) include in their annual report data on number and type of concerns raised through their whistleblowing hotline. The Code of Practice 2013 that was published by the UK Whistleblowing Commission stipulates as standard eight: 'Where an organization publishes an annual report, that report should include information about the effectiveness of the whistleblowing' (Whistleblowing Commission, 2013). Also in the UK, the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA) do not demand such data to be made public, but require companies to have that data available for regulators (FCA, 2015). Some regulators (e.g. Securities and Exchange

Commission in the US, Financial Conduct Authority and Care Quality Commission in the UK) include data on number and types of concerns raised with them by whistleblowers in their annual reports. A recent guideline for the UK Department for Business, Innovation, and Skills (BIS, 2015) signals to regulators that the annual reporting of data on whistleblowing activity will become a requirement.

What the 3-tiered model shows is that the impact of whistleblowing on the infosphere is very different depending on which tier the facilitation occurs at. Recipients at different tiers have a different impact on the organization, the wrongdoer, the whistleblower, and other informational entities. This is so when the whistleblowing disclosure entails true semantic data - i.e. information. Organizational and professional reputations can be harmed. A further complication is that whistleblowers can be mistaken, in which case there is misinformation - unintentionally false semantic data. People can also use whistleblowing channels for disinformation - intentionally communicated false semantic data. Successful facilitation will expose such acts for what they are: misinformation or disinformation. The lower the tier whistleblowing occurs at, the easier this seems to accomplish. Yet it might be harder to get the whistleblower to accept it. I will return to this difficulty later in the paper. The point I want to make here is that because whistleblowing is a process of escalating a concern, the question of how whistleblowing can be evaluated from an IE perspective can be reformulated as the question of what the optimal facilitation of whistleblowing is. Following Floridi's IE principles and Vandekerckhove's 3-tiered model, the answer is that as the organization's flourishing as an informational entity should be promoted whilst negatively impacting the flourishing of as few information entities as possible. But what if the internal facilitation does not lead to successful whistleblowing? How is the infosphere impacted by further whistleblowing at the second or even third tier? I answer the questions in the next section.

4. Whistleblowing and ecopoeisis

Organizations are information entities that seek to promote their flourishing by producing other information entities that communicate semantic data about them: they have websites, advertise their products or services, publish various reports, have mission statements, codes of conduct, etc. It is an implicit claim of that semantic data that it is information - i.e. true semantic data (apart from some exceptions such as ads that use hyperbole). Within IE, organisations that produce false semantic data would still be informational entities, but the production of false semantic data causes entropy in the infosphere as misinformation and disinformation can deplete or harm other informational entities such as consumers, investors, competitors, or other producers of information. There are specific informational entities however that make the implicit truth claims unproblematic. Institutions such as accounting, auditing, consumer groups, regulators, and a free press allow commercial and government organisations to flourish as information entities. More precisely, appropriate rules of informational transparency which these institutions impose and embody allow organisations to flourish through the production of regulated information entities. Turilli and Floridi (2009: 107) wrote that informational transparency can be ethically enabling ‘when it provides the information necessary for the endorsement of ethical principles’ or ‘when it provides details on how information is constrained’. The ethical principles here are producing trustworthy information (true semantic data that is perceived as such) and a neutral (no-harm) or beneficial working of organisations for their stakeholders. Reporting requirements such as financial statements, environmental impact audits, or reports in the areas of equality and diversity, or supply chain responsibilities all enable the second ethical principle. Third party verification of the reported

information can increase its validity and hence enable the first ethical principle. However, voluntary standards or regulation with regard to how that information was produced and is constrained - e.g. auditing standards, financial reporting rules, Global Reporting Initiative frameworks, etc - can be enhancing or even be necessary for these ethically enabling effects to occur. Some institutions provide validity of information not by producing additional information but by their ability to do so. For example, in a country with a free press, there is no need to actually print in the newspapers that elections were fair. The absence of news about unfair elections conveys the validity and fairness of the elections. Hence, a free press promotes the flourishing of elections as information entities by being able to report on any unfairness, rather than actually having to report on fairness.

How do the above considerations apply to whistleblowing ? Consider organizations A, B, C, and D who produce semantic data about themselves. Three of these produce semantic data p_A , p_B , p_C , where p is 'we are a safe organization to work for'. Organization D produces q_D where q is a report showing accidents decreased by 50% last year. There are many potential users of that information (at least these users believe the semantic data is true). Customers might be interested in buying products from organizations with safe workplaces. Hence they would choose among A, B, and C, but not D because they rely on communications that claim accidents happen in D but not in A, B, and C. Investors looking for a new investee might choose A, B, or C because there is little risk of costly accidents. On the other hand, they might prefer D because if the organization continues to decrease its accidents it will save costs and hence its shares are likely to rise meaning a win for the investor. Note that organizations A, B, C and D are not only producers of p and q but also users. The customers and investors they attract because of p and q will make a difference to them. So the questions IE

poses with regard to whistleblowing are: what does whistleblowing do to p and q , and to the infosphere in which p and q are produced and used?

Consider also a whistleblower who produces semantic data w_A that organization A had three fatal accidents last year but covered them up. If w_A is true, it exposes p_A as false semantic data, and thus A as untrustworthy. It might also cast doubt on p_B and p_C . B and C might indeed be safe organizations, but they too could be liars. Finally, the compound information p_A , q_D , and w_A gives us the knowledge that D is rigorous and honest about its safety monitoring. Hence, w_A has caused entropy (p_B and p_C) but it has also made q_D flourish. Investors will want to shy away from A, and will be wary of B and C. Organization D however has just become more attractive. Depending on how strongly customers feel about safe workplaces, their purchasing behavior might also be affected.

Now, assume that organization B has an internal whistleblowing procedure and publishes in its annual report the number of concerns raised internally as well as investigations and sanctions taken in response to those internal concerns - this is information p_{WB} . Organization C does not have such practices. In this situation, w_A does not affect the informational value of p_B but it still lowers that of p_C . Hence, p_{WB} (a dotted line in figure 1) is an instance of informational transparency by B, which is ethically enabling B to produce other information about itself.

Of course, what A's whistleblower discloses (w_A) might be false semantic data, and as such either misinformation or disinformation. This is important and I will come back to that possibility further on in this section. Here, I have argued that whistleblowing can be good in terms of IE because it can make information objects flourish for what they are by exposing false semantic data produced by organizations as false. A preliminary conclusion is then that whistleblowing can be good when it is information, i.e. when semantic data is true.

This preliminary conclusion needs to be qualified. I pointed out that even if whistleblowing exposes organizational semantic data as false, and thus enhances the infosphere, it also causes some entropy: it harms organizations exposed as liars, and might cast doubt on informational validity of other organizations, as people might become cynical towards any communication for organizations. Whether the benefits outweigh the harms depends, I argue, on how whistleblowing is facilitated. The remainder of this section offers an analysis to arrive at a qualification of good whistleblowing within IE.

For that analysis a couple of distinctions are needed. I have argued that whistleblowing is a process that involves raising a concern through three tiers depending on how the whistleblowing is responded to at each instance. I have also argued that organizations and regulators can produce information about concerns raised with them and how these were handled. I have further argued that how the whistleblowing process unfolds is determined by the way it is facilitated at each step of the process. Thus whether or not and with whom the concern will be raised next depends on how a recipient responds to the whistleblowing and whether or not there is communication from that recipient about whistleblowing activity (full and dotted lines in figure 1). For the analysis that follows I consider r to be an adequate response (concern was investigated and there is no harm to the whistleblower) whilst $\neg r$ is an inadequate response; s designates that there is information about whistleblowing activity whilst $\neg s$ means there is no such communication. I thus arrive at four facilitation modes from the possible combinations. I will first discuss the entropy effects of facilitation modes at organizational and regulatory level (tiers 1 and 2). I will then discuss the entropy effect with regard to public whistleblowing and argue that what constitutes r and s at this level is different. Table 1 presents an overview of how whistleblowing affects entropy in the infosphere across the three whistleblowing tiers and across different modes of facilitation.

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$r \wedge s$ There is an adequate response to a whistleblowing concern and there is also information about whistleblowing activity. Entropy is removed from the infosphere, both where whistleblowing is true as well as where whistleblowing is false (misinformation or desinformation). Wrongdoing has been stopped, the mistaken whistleblower does not suffer reprisal, and intentionally false whistleblowing is sanctioned. Moreover, the organization or the regulator reports about these activities. This functions as informational transparency supporting the validity of information from the organization or regulator. What this additional information (report on whistleblowing activity) communicates is precisely that this organization is willing and able to correct wrongdoing occurring under its own responsibility. For regulators this is that it is willing and able to correct wrongdoing in or by organizations and sectors that it regulates on the public's behalf. Thus $r \wedge s$ allows organizations and regulators to flourish as informational objects in the infosphere.

$r \wedge \neg s$ There is an adequate response but no communication about whistleblowing activity. The adequate response (r) prevents whistleblowing from escalating further to tier two or three. It thus prevents entropy in the infosphere for those situations where further whistleblowing would cause entropy. But because there is no communication about whistleblowing activity ($\neg s$) no entropy is caused or removed. There is no informational transparency that enhances the flourishing of organizations or regulators as informational objects. Note this would be different if we would take into regard that some organizations and regula-

tors report on whistleblowing activity but others do not (cf. pWB but no pWC). Preventing entropy through informational transparency might only occur if either all or none communicate about whistleblowing activity. I do not take this complexity into account in the analysis.

$\neg r \wedge s$ There is communication about whistleblowing activity but no adequate response to the whistleblowing. This situation arises when an organization or regulator includes data on number and types of concerns raised with them (s), yet fails to stop the wrongdoing or the whistleblower is retaliated against ($\neg r$). Pittroff (2014) uses legitimacy theory to explore this. Legitimacy theory posits it is not important to know how an organization is actually behaving, rather it is important what society perceives and knows about the behavior of the organization. In this sense, a communication about whistleblowing activity can be a merely symbolic instrument to create a legitimacy façade. This can be maintained as long as an organization can credibly signal that it meets the expectations of society. However, without adequate responses to whistleblowing concerns, communication about whistleblowing activity makes the organization – as informational object – prone to a legitimacy-gap. We can expect such a mode of facilitation will push whistleblowers to raise a concern about this gap to a regulator or – if the regulator incurs the legitimacy-gap – to the media. Hence the effect of $\neg r \wedge s$ is that it increases entropy in the infosphere unless whistleblowing is escalated to the next tier.

$\neg r \wedge \neg s$ There is no adequate response to a concern being raised and also no communication about whistleblowing activity. This causes more entropy. If the whistleblowing is true then not escalating the concern to the next tier fails to prevent entropy because the organization or regulator in question continues to produce false semantic data. If the whistleblowing is

false, an inadequate response (including ignoring) might lead the whistleblower to escalate their (false) concern to the next tier, thereby causing more entropy in the infosphere.

Entropy effects of whistleblowing are different when whistleblowing is facilitated by journalists or leaks sites to the public (tier three in figure 1 and table 1). This situation occurs when there is no adequate response ($\neg r$) at previous tiers. The whistleblower has raised the concern with the organization and the regulator, but the wrongdoing was not stopped or the whistleblower is experiencing retaliation. A situation of inadequate response ($\neg r$) also exists where the whistleblower knows what happened to previous whistleblowers who raised their concern with the organization or the regulator and were ignored or retaliated against. Edward Snowden's whistleblowing on NSA surveillance programs is a good example. He blew the whistle through the media because he knew what happened to William Binney and Thomas Drake who had previously tried internal whistleblowing routes (Radack & McClellan, 2011). Under UK legislation, whistleblowing to the media remains a protected disclosure if the whistleblower had good reasons to believe raising the concern with the organization or regulator would be ignored or lead to retaliation. Entropy effects of whistleblowing at the third tier (whistleblowing to the media) are different from previous tiers because it is unclear what r and s are. An adequate response (r) from media is to publish the whistleblowing information if it is true, and not to publish if it is false. An adequate response also entails that journalists shield their whistleblower sources. The example of Chelsea Manning shows that the possibility of harming the whistleblower through media publication is real. An inadequate response ($\neg r$) would be not to publish if the whistleblowing is true, and publish if the whistleblowing is false. Hence, in table 1 not publishing if the whistleblowing is true, and publishing false semantic data ($\neg r$) always results in more overall entropy. However, unlike recipients at pre-

vious tiers there is no other action the media as recipient can take to stop the wrongdoing except publishing whistleblowing information about wrongdoing or whistleblower retaliation. If the whistleblowing was intentionally false then the media has no means to sanction the disinforming whistleblower except not to publish. The implication is that whistleblowing through the media must trigger other actors to stop the wrongdoing, e.g. a parliamentary commission or reforming the regulator that failed to take appropriate action. For this to happen, informational transparency is an important factor.

In whistleblowing to the media, informational transparency is based on the reputation of the journalist or the media outlet that they work with high standards of investigate journalism. This functions as additional information about whistleblowing activity (s). Hence (s) - the reputation of the journalist - validates any whistleblowing information published. Tabloid journalists have a reputation of publishing semantic data that might or might not be true, and would thus constitute ($\neg s$). In table 1 ($r \wedge \neg s$) if the whistleblowing is true results in an overall increase of entropy. This is because journalists or media outlets that do not have a strong reputation of working with high standards of investigate journalism will not be able to trigger other actors in taking action to stop wrongdoing or sanction a disinforming whistleblower will not bring about the removal of entropy necessary to outweigh the entropy caused by any whistleblowing.

Table 1 also notes that ($r \wedge \neg s$) if the whistleblowing is false as well as ($r \wedge s$) if the whistleblowing is false have a neutral effect on entropy because nothing is published. From the analysis it follows that within IE whistleblowing to the media is only good if true semantic data from a whistleblower gets published by facilitators that have a strong reputation of working with high standards of investigative journalism.

5. True and false whistleblowing, and no whistleblowing at all

The above analysis urges us to emphasize the importance of ensuring adequate responses to whistleblower concerns at the level of the organization and the regulator. However, this can be very difficult to achieve, especially when the whistleblowing is false. Vandekerckhove and Rummyantseva (2014), reporting on research into the implementation of whistleblowing policies in the NHS England, give examples of efforts made to achieve closure with the whistleblower. One HR manager interviewee gave the following account of the efforts needed to convince a mistaken whistleblower that the organization took a concern seriously and is not trying to cover-up wrongdoing:

[...] But we had to sit down with him and explain it to him. [...] And the Medical Director ended up explaining it to him. [...] We were a bit nervous that he would take the issue and try to make something out of it. But you know, he asked questions and we talked about it and he was absolutely satisfied then. But we physically showed him the patient system and the two different systems. So I think it is about giving that feedback. I mean we have had nurses who've raised issues and you get some quite strong nurses who come and raise an issue but again the Director of Nursing's response was 'Well that's not actually what's happened'. But we will physically sit down and say 'Look, we're going to tell you ...' And I think I've had a couple of letters come via me and we've looked into them and again we've brought them in and said 'Look, we're going to explain to you why what you think is the case isn't the case' and they've been happy with that. [...] So it has to be that level of feedback. (interviewee cited in Vandekerckhove & Rummyantseva, 2014)

The above concerns whistleblowing that entails unintentionally false semantic data, i.e. the whistleblower is mistaken. However, false whistleblowing can also entail intentionally false semantic data. This is known as 'malicious whistleblowing' and nearly all whistleblower protection legislation features punishment for malicious whistleblowing (Council of Europe,

2014; Vandekerckhove, 2006). The ability to distinguish between mistaken and malicious whistleblowing is important for tier 1 recipients. They need to be able to evidence the maliciousness because there is always the possibility that the malicious whistleblower makes an attempt at tier 2 or 3. The current reality however seems to be that whistleblowers tend to suffer reprisals for true whistleblowing more than organizations are harmed by malicious whistleblowing.

Achieving closure with the whistleblower is an important part of what constitutes an adequate response (r), also where whistleblowing is false at tiers one or two. Thus a failure to achieve closure would constitute an inadequate response ($\neg r$), and by definition four cells of table 1 would be empty (tier three cells of columns $r \wedge s$, $r \wedge \neg s$). In practice however, it might be useful to consider situations where responses have been partially adequate at tiers one or two, i.e. adequate except for achieving closure. In such cases the wrongdoing has been stopped, a mistaken whistleblower has not suffered retaliation, and intentionally false whistleblowing has been sanctioned. If the whistleblowing then occurs at tier three, this causes more entropy in the infosphere because it raises doubt about the organization's and the regulator's abilities to respond to whistleblowers and stop wrongdoing. In those situations entropy in the infosphere increases, regardless whether the whistleblowing is true or not.

Where the responses at tiers one or two were inadequate in other respects the truthfulness of the whistleblowing does make a difference. If the whistleblowing is true, it removes entropy in the infosphere as the disclosure is additional information that enables to distinguish trustworthy from less trustworthy organizations (the same reasoning goes for regulators). Trustworthy organizations will be those about which there are no whistleblowing disclosures at tier 2 and 3. Whether this is because there is no wrongdoing in those organizations or because these organizations manage to respond adequately to whistleblowing is irrelevant. Of course,

there might be organizations that ‘buy silence’. We can think of organizations that threaten their potential whistleblowers, for example by murdering previous whistleblowers (e.g. some whistleblowers receive death threats, see for example Gibney, 2013), or by paying them for signing a ‘gagging clause’ (i.e. a stipulation in a contract whereby a person foregoes the right to communicate about the issue, see for example Guardian, 2013). It is possible such attempts to ‘buy silence’ are sometimes successful. But as the two examples evidence, we know people sometimes blow the whistle despite such attempts by organizations to ‘buy silence’. It has now become standard that whistleblower protection legislation both acknowledges death threats as a form of retaliation as well as that gagging clauses are legally void (cf. Council of Europe, 2014).

6. Conclusion

The analysis presented in this paper contributes to the literature by being the first to look at whistleblowing from an explicitly ecopoietic perspective, namely Floridi’s IE. Thus the analysis explored the value of whistleblowing as information, as well as for users and producers of information. I distinguished two types of whistleblowing information. One is the information the whistleblower might disclose. The other is information about whistleblowing activity organizations and regulators can produce and use.

Empirical findings about how whistleblowing happens were at the basis of the analysis and showed that whistleblowing is a process of successive escalations of concerns raised with recipients at different stages of an internal-external continuum. Whistleblowers disclose information depending on responses (including non-responses) to their earlier whistleblowing attempts. Further, organizations and regulators might or might not publish information about

whistleblowing activity. This model resulted in four modes of facilitation. For each of these I reasoned the effect on entropy in the infosphere according to disclosure tier and whether the whistleblowing was true or false.

The analysis finds that whistleblowing to the public is good if and only if whistleblowing is true, is facilitated by credible media, and there had not been a previous adequate response by the organization or regulator. At earlier stages of the whistleblowing process, whistleblowing is good if there is an adequate response. When there is no adequate response, whistleblowing is good if and only if whistleblowing is true and the concern is raised again at the next level (further whistleblowing).

The implication is that from an ecopoietic perspective we cannot evaluate whistleblowing without also taking into account how the whistleblowing was facilitated. The analysis in this paper suggest that for whistleblowing to be beneficial within IE, facilitation must:

1. filter out false whistleblowing,
2. achieve closure with the whistleblower, especially when whistleblowing is mistaken or intentionally false, and
3. include the publication of information about whistleblowing activity.

One implication for practitioners and policy makers is that whistleblowing policies need to operate on a duty to investigate basis so as to ensure untrue whistleblowing can be documented and explained. Another implication is that whistleblowing policies need to be implemented in a culture of engagement with the whistleblower so as to achieve closure and hence preempt the need to escalate the concern further. Currently, informing the whistleblower of the outcome of an investigation is a standard element of whistleblowing policies. From an IE perspective it might not be enough to send the whistleblower a simple notification. Rather,

the findings suggest a closer involvement of the whistleblower in resolving the wrongdoing or explaining how the whistleblower was mistaken would be needed.

Finally, the analysis in this paper also suggests that publishing information about whistleblowing activity can be beneficial for the infosphere. Further research can provide insights into useful parameters for this (how to aggregate the data under categories) as well as what first mover disadvantages might be. Improving responding to whistleblowing at early stages however remains a priority. This entails not only an ability to make a distinction between mistaken and intentionally false whistleblowing but also a managerial ability to achieve closure.

Overall, an ecopoietic analysis of whistleblowing from an IE perspective provides a normative justification for an emerging regulatory position with regard to whistleblowing in the USA (SEC) and the UK (FCA) showing a stronger attention for adequate responses to internal whistleblowing and publishing data on whistleblowing activity, because whistleblowing to the media is hardly ever an optimal facilitation of whistleblowing.

Research ethics compliance

This research did not involve human participants and/or animals.

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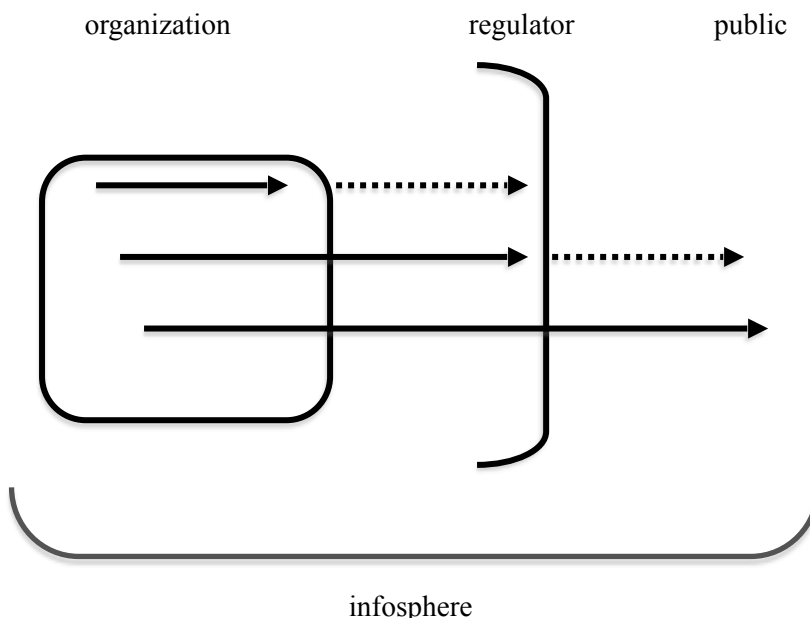


Figure 1. The 3-tiered whistleblowing model (adapted from Vandekerckhove, 2009)

Table 1. Modes of facilitating whistleblowing and entropy effects

Tier	True/False	$r \wedge s$	$r \wedge \neg s$	$\neg r \wedge s$	$\neg r \wedge \neg s$
1 organiza- tion	True	↓	=	↑ if not esc	↑ if not esc
	False	↓	=	↑ if esc	↑ if esc
2 regulator	True	↓	=	↑ if not esc	↑ if not esc
	False	↓	=	↑ if esc	↑ if esc
3 public	True	↓	↑	↑	↑
	False	=	=	↑	↑