International Journal of the Commons

RESEARCH ARTICLE

The Catharsis of the Commons

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Using Aristotle's definition of the tragedy as a metaphor, the essay interprets the tragedy of the commons to highlight the critical role and socio-political importance of the emotions of fear and pity for its resolution and for furthering personal and collective *eudaimonia* (good life) *of* and *in* the commons. Synthesizing the Aristotelian scholarship with pertinent contemporary literature, it presents Aristotle's engagement with the commons, emotions and virtues, discusses the key notions of the tragedy and offers an Aristotelian rendering of the tragedy of the commons applying a dramaturgical-interpretivist approach. The emotions-driven learning process of catharsis clarifies the causality of the tragedy, motivates action, forms virtuous citizens, 'cleans'/relieves/purifies the commons of their ills, thus, engendering their catharsis. The comparison of the Aristotelian-inspired with the contemporary institutionalist, moral and phronetic approaches reveals their commonalities and differences. The analysis suggests that emotions should be integrated into current approaches or they might be synthesized into an *emotions-centered institutionalist-phronetic approach* to the study and governance of the commons. Education of and in the emotions to influence the perception of commons dilemmas, values and morals, coupled with institutional arrangements grounded on phronesis and sufficiency, emerge as contemporary policy priorities. Future interdisciplinary research directions conclude the essay.

Keywords: Aristotle; Common Pool Resources; tragedy of the commons; emotions; phronesis; governance; dramaturgical perspective

1. Introduction

Hardin (1968) did not fortuitously coin the term 'tragedy of the commons' for the multifarious ills associated with the misuse and over-exploitation of the commons, or Common Pool Resources (CPR), in the Anthropocene: natural and cultural resource pollution, depletion and loss, climate change and myriads other of all sorts at all levels. 'Tragedy' and 'tragic', literally and metaphorically, denote situations that engender clashes, intense conflicts and deadlock, produce serious, often irreversible, impacts with grave personal, societal and environmental consequences. These problems are often incompletely solved or they remain unresolved posing great practical and moral dilemmas (Ostrom 1990, 1999; Ostrom et al. 2002; Thompson 2000; van Vugt 2009). A voluminous literature in the Environmental and the Social Sciences and the Humanities covers the analysis of CPR dilemmas while proposals for their governance broadly follow one of three mainstream approaches: institutionalist, moral and phronetic (Ostrom 1990, 1999; Flyvbjerg 2004; Marquez 2010).

Tragedy, a kind of drama the attendance of which was a common civic activity, and the governance of the commons in city-states (*poleis*) were central subjects of classical Greek[1] literary, historical, philosophical and political discourse[2] following the emergence and establishment of democracy (Ober 2009). Among ancient writers, Aristotle, the 4th BC century Greek philosopher, had elaborated on both the governance of the commons, the cornerstone and central theme of his political thought and works (*Politics, Rhetoric, Nicomachean Ethics*), and tragedy (*Poetics*). However, besides passing reference to a brief statement, originally

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[1] Circa the 6th to 4th BC century period.
[2] Eminent figures include Solon, Thucydides, Herodotus, Demosthenes and Plato.

cited by Hardin and Ostrom,[3] Aristotle's thorough, situated and integrated analysis and proposals for the governance of the commons are seldom acknowledged to this author's knowledge. Moreover, Aristotle, in his famous definition of the tragedy,[4] addresses the resolution of the tragedy through the emotions of pity and fear that beget catharsis and, thus, help realize the telos of the tragedy, eudaimonia. Thus, Aristotle, most probably unwittingly, suggested a way to resolve the tragedy of the commons resounding with the affective turn in the Social Sciences and the Humanities that, since the mid-1990s, has revived the long-suppressed emotional (affective) dimension in pertinent discourses and stressed the role of emotions in decision making (Schwarz 2000; Sanfey et al. 2003; Camerer et al. 2005; Clough and Halley 2007; Bleiker and Hutchison 2008; Pfister and Böhm 2008; Rick and Loewenstein 2008; Hoggett and Thompson 2012; Nesbitt-Larking et al. 2014; D' Aoust 2014).

This paper uses Aristotle's definition of the tragedy as a metaphor,[5] first, conceptually, to get a deeper understanding of the meaning of the 'tragic' and the structure of a tragic event; second, theoretically, to show how the incidence of a tragic event contributes to the development of values, virtues and, eventually, eudaimonia, the common good; and, third, methodologically, to elaborate a methodology for the analysis of tragic events (individual and collective).[6] Arguing that Aristotle's definition encapsulates the key factors of the genesis and resolution of a tragedy, and combining it with Aristotle's political works, this essay offers an interpretation of the tragedy of the commons through an Aristotelian lens that introduces and suggests the inclusion of emotions in its study.

Synthesizing the pertinent Aristotelian with the CPR and other relevant literature within a dramaturgical-interpretivist approach, it first briefly outlines Aristotle's engagement with the commons, emotions and virtues. It then presents the key notions of the tragedy to provide the template for the ensuing Aristotelian rendering of the tragedy of the commons. A comparison of the Aristotelian with contemporary approaches to CPR governance follows that reveals their commonalities and differences. A rationale for their synthesis into a compleat, emotions-centered institutionalist-phronetic approach and essential policy interventions for its realization are outlined. In closing, the essay summarizes the key points of the analysis and proposes future interdisciplinary and transdisciplinary research directions.

2. Within Aristotle's Mind: Commons, Emotions, Virtues

In classical Greek democratic city-states, material and immaterial resources and goods were distinguished into private and public (non-private) (Habermas 1991). Private resources and goods were possessed and exclusively managed by individual households. Public resources and goods encompassed public land, space and money, agricultural yields, other material goods, religious, recreational, educational and other civic activities, values, political powers (rights and responsibilities) and public service (Wolff 1991; Ober 2008, 2009). They were non-zero sum goods (Smith 1999), the common (collective) possession of the *demos*,[7,8] shared and managed communally and transparently by means of collective, bottom up rules, public deliberation,[9] consultation, organization of knowledge and cooperation (Habermas 1991; Smith 1999; Ober 2009). In his famous funeral oration (*Epitaphios*), Pericles noted that "the Athenians enjoy an equal opportunity to learn from all those public sources that render the city an 'openly shared common possession' (2.39.1), as well as an equal opportunity to share the fruits of cooperation." (Ober 2009: 77).

For the needs of this study, it is underlined that, in the classical Greek city-states, attending the theater was a 'common', publicly funded civic activity, the right and obligation of every citizen (Wolff 1991; Nussbaum 2006; Sokolon 2006; McCoy 2013). The social-political mission of 'teaching' tragedies that importantly determined their structure and content, was to recreate, educate on issues of common interest, develop commons values, democratic civic identity and civic bonds that secured the social cohesion of the city-state and, more importantly, provide moral standards for the formation of virtuous citizens, worthy agents of the common good, the eudaimonia of the city (Ober, 2008, McCoy 2013).[10]

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3   "That which is common to the greatest number has the least care bestowed upon it … each thinks chiefly of his own, hardly at all of the common interest; and only when he is himself concerned as an individual" (Ostrom 1990).

4   To this author's knowledge, only Maclellan (2015) invoked the definition of the tragedy to re-interpret Hardin's essay.

5   The 'tragedy of the commons' is also a metaphor (Hess 2008).

6   See, metaphor as method (Yanow 2007; Musolff 2016).

7   Demos, in classical Greek democratic city-states, stands for the public: the socially diverse body of all citizens (Ober 2009).

8   Habermas (1991: 3) notes: "the sphere of the *polis*, which was common (*koine*) to the free citizens".

9   "The inherently costly process of publicly deliberating had the effect of reinforcing the Athenians sense of themselves as a public" (Ober 2009: 76).

10 As Ober (2008: 76) notes the "citizens at Athens were educated by 'working the machine' of democratic institutions and by attending to legal and political rhetoric".

The composition and management regimes of public resources and goods suggest that these possessed the defining CPR[11] traits: nonexcludability[12] – they were indivisible and all citizens had equal access rights – and subtractability[13] – they were finite, confined within city-state borders, implying rivalry among users. For this latter reason, and under participatory democracy regimes mostly, these resources often experienced congestion, overuse (free-riding) and destruction[14] rendering the imposition and enforcement of rules of use, sanctions and rewards, collective action and cooperation necessary.[15] Moreover, "the formal constraints of constitutional law were increasingly recognized as instrumentally valuable in sustaining that essential collective capacity" (Ober 2008: 71).

Following the extensive contemporary CPR literature, other CPR features public resources and goods possessed, include the shared, moral responsibility for their management (cf. Ostrom 1990; Bromley 1991; Hess and Ostrom 2003, 2006; Hess 2008); the inherent value of customarily utilized public resources that are necessary for the community of users (cf. Foster and Iaione 2016) and, relatedly, their roles in producing and signifying community, community identity and common values (Holder and Flessas 2008);[16] the "moral and political commons, justified and enacted through a language of rights and justice" (Blomley 2008: 318).

It is, therefore, posited that public resources and goods in classical Greek democratic city-states were CPR. It is also noted that Aristotle and his contemporaries often use the term 'common' (*koinos*) instead of 'public' to refer to the public resources of the city (*polis*).[17] Educational and recreational activities correspond to what is currently referred to as civic, political, cultural, knowledge, educational, political and moral commons.

The commons are constitutive of and integral to Aristotle's definition of the citizen, the city and Politics. The citizen is a free person actively participating in the common affairs of the city; otherwise, he is an individual caring only for his private affairs. People, as political animals, exist, flourish, become complete personalities and achieve their *telos*,[18] which is not simply to be but to be good (Foster 2002) and attain the superior good, *eudaimonia* (the good life),[19] only within and through symbiosis in political communities. The city, the highest form of symbiotic community, consists of dissimilar equals bound together and united by friendship (an extension of one's self), a feeling of co-belonging, of 'we', and relationships of justice under some authority (Sherman 1987; Wolff 1991; Bina and Vaz 2011; Sokolon 2006; McCoy 2013). Citizens care for the commons because it is in their interest to do so (Foster 2002). Living in the city means engaging in Politics, a right and duty of all citizens, i.e. relating to and cooperating with others to manage the common affairs in the pursuit of the *common interest, the common good*, which is the eudaimonia of the city (Foster 2002; Wolff 1991; Bina and Vaz, 2011). The common interest is not the generalized individual interest; instead, the citizens are agents of the common interest. Good citizens are virtuous, invest resources to solve commons dilemmas and act beyond their self-interest and self-restraint (Foster 2002; Sokolon 2006; Marquez 2010; Treanor 2010; Bina and Vaz 2011). Politics secures social cohesion (successful symbiosis) at the collective level and has a two-way relationship with Ethics, which concerns the personal level. The *telos* of the citizen is identical to the *telos* of the city, eudaimonia, implying that the ethical is political. For Aristotle, eudaimonia is "'common to many' (NE 1099b18): for it is 'open to anyone who is not by nature maimed with respect to virtue, through some sort of effort and care' (18–20)" (Nussbaum 1996: 277).

The core issue of Aristotle's engagement with the governance of the commons was how to achieve the eudaimonia of the city; more specifically, how to secure sufficiency, a state that "makes life desirable and lacking in nothing" (Eldridge 1994: 289) and provides the common good to all. The answer was: by becoming virtuous through *praxis*, a core element of Aristotle's philosophy,[20] guided by the doctrine of

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[11] Hess and Ostrom (2003: 120) define a CPR as a resource system (stock or facility) that generates flow of resources units or benefits over time.

[12] For practical and/or moral reasons, nobody can be excluded because they are indivisible and their boundaries are difficult to define.

[13] Exploitation by one user reduces the amount available to others.

[14] As Herodotus and Thucydides, among others, have noted (Ober 2009). Pitkin (2004: 338) cites James Madison remarking: "The 'pure' democracy of ancient Greece … presupposed a small city-state, and it was marked by constant 'turbulence and contention', by hasty, passionate, and unwise decisions."

[15] Hence, Aristotle's well-known remark (footnote 2).

[16] Holder and Flessas (2008: 307) note: "Hardin, in 'The Tragedy of the Commons', acknowledges that the problems underpinning common usage are in fact problems of *values*…. A modern understanding of 'the commons' therefore has to take on the question of values, because commons are not just limited to common resources but reflect and raise the question of common values created by the commons and represented by them".

[17] Thus, accepting what the particular socio-political regime determined to be common.

[18] *Telos*, meaning aim, completion and end, explains why things exist, reasoned decisions are made and praxis occurs (Wolff 1991).

[19] An "activity of the soul in accordance with virtue" (Eldridge 1994: 289).

[20] Aristotle opined that only by doing one becomes something (Curzer 2012).

the mean that prescribes situated choices between extreme excess and extreme deficit (Urmson 1973, Curzer 2012). By habitually doing good acts people develop intellectual (e.g. wisdom, phronesis, open-mindedness) and moral (e.g. justice, love, courage, moderation, temperance, benevolence, magnificence, truthfulness) virtues. Aristotle upheld his particular version of the Unity of Virtues doctrine; a person possessing one virtue possesses all other (to different degrees) that must function harmoniously (Halper 1999, Curzer 2012). Certain virtues, phronesis in particular, are indispensable for the development and exercise of so-called public or political virtues; i.e. those concerning relationships with equals and ability to govern others for the common good (Treanor 2010; McCoy 2013), such as friendship and justice. Distributive and redistributive/corrective justice, expressed through obedience to state laws, is indispensable for the existence of a symbiotic community and, together with equity, constitute the two principal criteria of the good (right) political regime (Wolff 1991).

Aristotle has also extensively elaborated on the emotions which he considered essential constituents of personal and political behavior and life, inextricably linked to reason and virtue. In the Rhetoric, the Nicomachean Ethics and other works[21] he laid down his conception of emotions and analyzed 14 political emotions[22] such as anger, fear, gentleness, love, hate, shame, pity, indignation (Sokolon 2006). Emotions (*pathe*) are states of mind, "intelligent and discriminating parts of the personality" (Nussbaum 1996: 303). They comprise various components; physiological, concerning a person's capacities,[23] psychological, concerning innate character traits (desire/appetite/*orexis*[24] and dispositions/*hexis*[25]), and cognitive involving deliberation, reasoning and judgments about an object, as *perceived*, and based on *beliefs* about its value. Beliefs are necessary and sufficient conditions and constituents of emotions (Nussbaum 1992); several emotions are individuated by reference to characteristic beliefs (Deigh 1994; Sokolon 2006). Finally, emotions are accompanied by *feelings of pleasure or pain* and *motivation to act* (intentionality).

Because emotions encompass rational deliberation (reasoning), they are subject to cognitive modification. When modified, by, e.g. modifying perceptions and beliefs, emotions can modify judgments and choices in their turn (Nussbaum 1996; Sokolon 2006). Aristotle stressed that emotions are neither exclusively cognitive nor exclusively physiological states. Unlike dispositions that are enduring character traits, emotions (and emotional repertoires or responses) are transient/temporary states varying according to physiological traits, character, experience, the family, as well as environmental, material and sociopolitical conditions (Nussbaum 1996; Sokolon 2006). He specifically stressed the crucial role of the (socio)political regime in shaping emotions and, in particular, of appropriate moral education (Nussbaum 1996).

Emotions are essential constituents, not just influences on or instruments, of virtue which is an emotional mean-disposition (Goldie 2004), a "mean disposition (disposition to pursue the appropriate) 'with regard to both passions and actions' (NE 1105b25–26, 1 IO6b16–17) "... even were the apparently correct action to be chosen without the appropriate motivating and reactive emotions, it would not count for Aristotle *as a virtuous action*: an action is virtuous only if it is done *in the way that* a virtuous person would do it." (Nussbaum 1996: 316). Quoting Aristotle, Goldie (2004: 260) adds: "The virtuous person will feel – that is, have emotions – and act 'at the right times, about the right things, towards the right people, and in the right way; ... this is the intermediate and best condition, and this is proper to virtue' (*Nichomachean Ethics* 1106b20)". Certain emotion types correspond to particular virtues, sharing the same name[26] (Roberts 1989, 2013; Sokolon 2006). Because emotions are not always correct, Aristotle calls for educating and cultivating many emotions as valuable and necessary parts of (the cultivation of) virtuous agency and action (Roberts 1989; Nussbaum 1996; Marquez 2010). Moreover, Nussbaum (1996: 316) adds "... so educated, they are not just essential as forces motivating to virtuous action, they are also ... recognitions of truth and value. ...All of this is a part of the equipment of the person of practical wisdom, part of what practical rationality is ... the recognition of some ethical truths is impossible without emotion; indeed, certain emotions centrally involve such recognitions".

Summarizing, Aristotle demonstrated the two-way relationships between emotions, cognition, reason and virtues because, as Sokolon (2006, on p. 31) argues, his understanding of emotions challenges three

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[21] E.g. On the Soul.

[22] Political emotions are relevant to the political community and fulfill one or all of three conditions: they can be habituated into ethical dispositions, are connected to justice and can alter judgments (Sokolon 2006).

[23] "Faculties by which human beings are able to experience the different emotions" (Sokolon 2006: 16).

[24] *Orexis* (appetite): a "reaching out for" an object ... is responsive to reasoning and instruction (*NE* 1002b28-tto3at) (Nussbaum 1996: 304).

[25] *Hexis*: a state of character formed by habitual action and education (Nussbaum 1992, 1996; Sokolon 2006)

[26] E.g. gratitude, compassion, hope.

dualisms: (a) the mind-body dualism – emotions have both physiological and psychological aspects, (b) the nature-nurture dualism – emotions result from interactions between innate and contextual factors and (c) the reason-versus-emotion dualism. Deliberate virtuous action requires that emotions (*pathos*) and reason (*logos*) function in concert[27] and habituated in individual and political moral decision making and choice.

Contemporary research in Psychology, Philosophy, the Social Sciences and the Neurosciences exhibits various theoretical directions[28] which suggest that emotions comprise several interwoven components – an object, perception of the object, intentionality (directed at the object), beliefs, cognition (information processing), assessment, deliberation, reasoning, judgment, feelings and motivation to act – and they are influenced by physiological, psychological and various contextual factors (Lawler and Thye 1999; Schwarz 2000; Goldie 2004; Camerer et al. 2005; Prinz 2006; Damasio 2011; Hoggett and Thompson 2012; Horne and Powell 2016). Various studies demonstrate the political relevance of emotions (Nussbaum 2006; Sokolon 2006; McCoy 2013; Brader 2011) and their role in socio-economic and environmental decision making (Schwarz 2000; Myers et al. 2012; Smith and Leiserowitz 2014; Bicskei et al. 2016), the commons (Ramírez-Sánchez 2006; Nightingale 2011) and international relations (Bleiker and Hutchison 2008; Michel 2013), among others. This scholarship generally upholds Aristotle's integrated approach to emotions, their constituents, relationship to reason and virtues and role in decision making.

3. "A Tragedy, then, is..."

The definition and key notions of the tragedy are briefly presented to provide the template for interpreting the tragedy of the commons through an Aristotelian lens. In Poetics, Aristotle defined tragedy as follows:

> "A tragedy, then, is the imitation of an action that is serious and also, as having magnitude, complete in itself; in language with pleasurable accessories, each kind brought in separately in the parts of the work; in a dramatic, not in a narrative form; with incidents arousing pity and fear, wherewith to accomplish the catharsis of such emotions" (6.1449b23–28) (Eldridge 1994: 287).

A voluminous, two-millennia-old literature elucidates the meaning of each and every word of the definition by combining Aristotle's major works (Poetics, Rhetoric, Politics and Nicomachean Ethics) and reveals that all elements of a tragedy are consistently defined, designed and stitched together to rationalize the final outcome, to offer pleasure, eudaimonia. The key notions of the tragedy are praxis, mimesis, tragic hero, tragic error, tragic outcome, pity, fear and catharsis.

Praxis is central in the tragedy which is an imitation (*mimesis*) of a primary act of universal common interest that destroys or threatens to destroy a valuable friendship/relationship. Praxis brings about changes that produce the tragic outcomes. Mimesis, the technical/performative part,[29] aims to coherently and effectively reproduce the actors, their aims, the causal, logical sequence of unexpected events,[30] the tragic moments of the story, the hero's sufferings and the historical circumstances and contingencies to facilitate the didactic mission of the tragedy (Reeves 1952; McCoy 2013).

The tragic hero is a good person, neither perfect nor reprobate, similar to the members of the audience, possessing virtues and defending moral values rather than material interests. He experiences a terrible *reversal* in fortune which he does not deserve, clashes with superior forces (the Fate, gods, people, own self), falls from well-being/happiness to misfortune and endures pitiable and fearful sufferings (Reeves 1952; Golden 1973; Nussbaum 1992; Alford 1993; McCoy 2013).

The tragic error, *hamartia*, literally meaning "to miss the mark", "to err" (Merriam-Webster), points to the cause of the tragic outcome: an error of judgment that defeats the hero. The virtues the hero possesses lead to pitiable and fearful sufferings because they are exercised "in alliance with powers and structures that embody conflict" (Eldridge 1994: 289). Hamartia owes, on the one hand, to the limited capability of humans to realize and completely comprehend *a priori* their current situation and, on the other, to the character/ethos of the heroes, their innate or acquired tendency towards virtue or vice that marks their particular vulnerability (Eldridge 1994; Nussbaum 1992, McCoy 2013). Hamartia signifies that "virtues can sometimes be self-defeating when exercised one-sidedly" (Eldridge 1994: 289) and in the wrong context (Tonner 2008). Tragedy is the undoing of "eudaimonia by the very qualities needed to achieve it" (Eldridge 1994: 289).

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[27] Book 2 of the Rhetoric explicates the relationships of the "ethos-pathos-logos" triad that remains topical up to date.
[28] Sokolon (2006) presents four approaches: the feeling theory, evolutionary, cognitive and the social construct approaches.
[29] Narrative, screenplay, cast, performance, scenery, costumes, songs, and visual effects.
[30] "… when things happen contrary to expectation, but on account of one another" (52a2–4)" (Nussbaum 1992: 276).

Pity and fear, two closely related, interdependent emotions, are aroused in the souls of the spectators, through a process of identification with the good and virtuous hero, when watching his fearful and pitiable ills.[31] Their strength depends on beliefs about the importance and value of the hero's ills (Sherman 1987; Nussbaum 1992, 1996; Eldridge 1994). The spectators feel fear, a self-regarding emotion, because they envisage the same ills likely happening to them for similar reasons. The greater and the closer the dangers presented the greater the fear felt (Eldridge 1994; Sokolon 2006). Simultaneously, they feel pity, an other-regarding emotion, for the tragic hero because, they reason, his motive is not unscrupulous and he is undeservingly suffering significantly and unexpectedly. Aristotle cautioned that not all events are tragic, i.e. arouse pity and fear. Tragic are those that are very strong to cause disaster, serious damage, and, thus, dread and extreme sorrow, fury or hate of people who can do harm, injustice backed by power, suffering caused by a friend, unwitting commitment of disgraceful acts and repentance after learning the truth, and competition for a common good that cannot be enjoyed individually. Those involving flawless persons who have bad ending, rotten persons who have good ending and rotten persons who have bad ending are not tragic (Nussbaum 1992; Eldridge 1994; Carr 1999; Sokolon 2006).

Pity and fear lead to astonishment (*aporia*), recognition and understanding of the causal chain that led to the tragic error and the ills of the hero, the conflict between aims and outcomes, the magnitude of change to the worse, the range of human possibilities and human vulnerability (Nussbaum 1992, 1996; Sokolon 2006; McCoy 2013). Aristotle insists that only the sharp experience of pity and fear *combined*[32] provokes learning that clarifies the causes and consequences of the tragedy, produces "a clearing-up concerning experiences of the fearful and pitiable kind" (Nussbaum 1992: 281), i.e. catharsis[33]. This is the dominant view of this much debated term[34] in the definition of the tragedy. Clarification and clearing up also refers to "… forgetfulness, ignorance, self-preoccupation, military passion – all these things are obstacles (fully compatible with general goodness of character)" (Nussbaum 1992: 279). The imaginative and discursive processing of these emotions (McCoy 2013), the move from ignorance to knowledge, offers the spectators gradual relief from tension that importantly promotes their psychic and social health (Golden 1973; Belfiore 1985; Alford 1993; Eldridge 1994; Carr 1999; Kearney 2007). The ensuing learning, like all learning according to Aristotle, offers pleasure (Moreall 1968; Golden 1973; Nussbaum 1992; Eldridge 1994), changes the ethical disposition, sensitizes the spectators to the sufferings of the hero and appeals to their sense of injustice (Nussbaum 1992). They are, thus, motivated to act, to engage in virtuous praxis[35] through which they develop virtues and flourish, i.e. achieve eudaimonia (Golden 1973; Belfiore 1985; Treanor 2010). This sequence, starting with emotional arousal and ending with relief and freeing of the undesirable effects of these emotions, has been paralleled to a sort of homeopathetic cure. Pity and fear do not remain reactions; they also function as therapeutic media leading to pleasure (Moreall 1968). Catharsis, then, is an emotions-driven learning process that leads to, helps achieve and is the telos of the tragedy, i.e. the restoration of eudaimonia and of the relationships of friendship that the tragic events have undone.

Figure 1 summarizes Aristotle's line of reasoning. The essence of tragedy is the commitment of the tragic error that owes to a reversal of the hero's fortune, which leads to fearful and pitiable ills, the breakdown of relationships of friendship and the loss of eudaimonia of the hero. The perception of tragedy, through an intricate identification process, arouses the emotions of pity and fear in the spectators, who recognize, learn and clarify the causality of the tragic error and its consequences. This process of catharsis eventually relieves them, motivates them to engage in virtuous actions, praxis, through which they develop virtues, restore the broken relationships and achieve the telos of the tragedy, i.e. eudaimonia.

Because of the sociopolitical character of attending dramas, several Aristotelian scholars underline that the benefits of the tragedy extend beyond the citizen to encompass the community as a whole. The discursive processing of fear and pity augments knowledge, enlarges the field of vision with new experiences, includes excluded or marginalized issues,[36] changes the ethical dispositions and compels citizens to develop greater concern and care for issues of common interest and their fellow citizens (Nussbaum 1992, 1996; Sokolon 2006; McCoy 2013). This process strengthens the bonds among citizens, improves their responses to

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[31] In attending dramas, people view imitations, not the actual events. Thus, they can contemplate, reason, comprehend and interpret the events and judge from a safe distance (Schaper 1968, McCoy 2013).

[32] Although other emotions cannot be excluded (Nussbaum 1992, Sokolon 2006).

[33] I.e. the emotions of pity and fear are not removed, as some scholars suggest. Tragedy modifies/'corrects' their problematic aspects (Nussbaum 1992; Sokolon 2006; McCoy 2013).

[34] The debate draws from the different uses of the Greek word 'clean': clarification, understanding, learning, right judgment, purgation, relief.

[35] I.e., improve their reactions to similar events by, e.g., eliminating arrogant behavior and avoiding damaging activities.

[36] Such as suffering, conflicting obligations, marginalization, powerlessness, vulnerability, etc. (McCoy 2013).
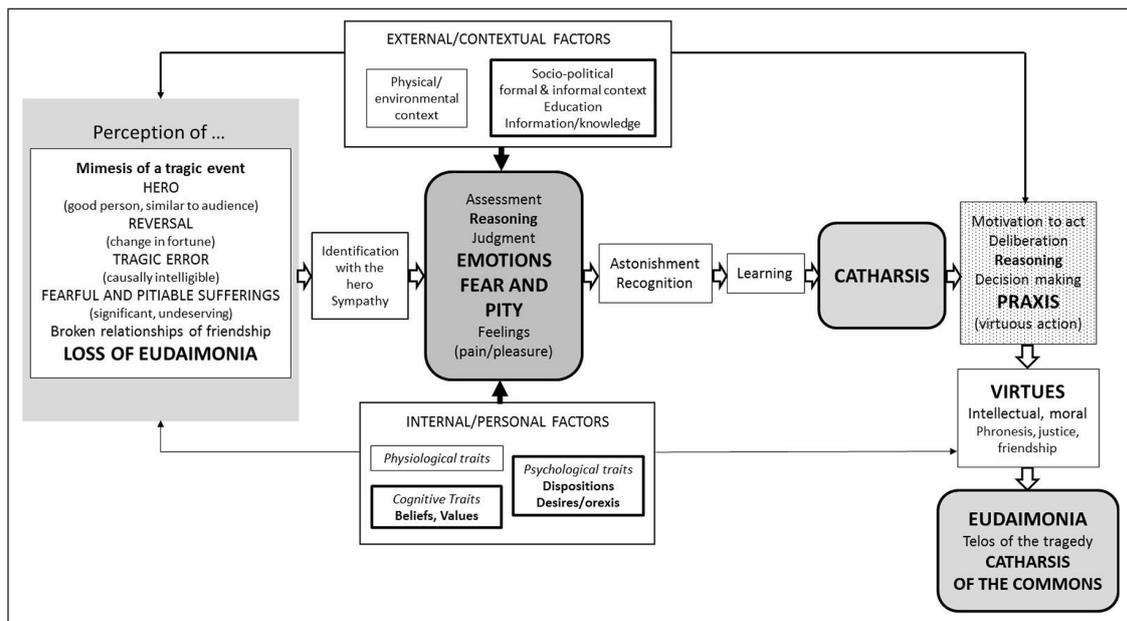
Figure 1: Simplified representation of the catharsis of the commons.

present and future ills and, consequently, generates a more balanced community that attains eudaimonia. Contemporary research in Psychology and the Political Sciences, among others, confirms the socio-political functions of pity and fear and their critical role in moral judgment and decision making (Nussbaum 2006; Clough and Halley 2007; Brader 2011; Hoggett and Thompson 2012).

4. An Aristotelian-Inspired Rendering of the Tragedy of the Commons

An Aristotelian-inspired rendering of the tragedy of the commons offers an alternative view of its deeper causes, consequences and necessary conditions for attaining its resolution and telos, eudaimonia *of* and *in* the commons. The methodological approach followed combines the dramaturgical perspective with interpretivism. The dramaturgical perspective, rooted in literary theorist's Burke (1945) study of motives, has been widely employed in Sociology, Anthropology, Psychology, Organization and Communications Studies, the Political and the Policy Sciences for the study of social interaction, emphasizing its discursive and nondiscursive communicative dimensions (Schreyägg and Häpfl 2004; Hajer 2005; Yanow 2007; Anderson 2014, Brissett and Edgley 2017; Szatkowski 2017). As Burke's (1945) pentad – Act, Scene, Agent, Agency, Purpose – denotes, the analysis focuses on actors (agency, roles, emotions, power relations), acts (performance) and setting (context); i.e. on praxis, action.[37] Hence, its affinity with performance and performativity studies (Smith 2013)[38] as well as its correspondence to the "who, what, when, where, why and how" focus of and suitability for political and policy analysis.[39]

The most noteworthy feature of the dramaturgical perspective[40] is its use as metaphor. As Stebbins (2017: xi) notes "Scientific metaphors are means to an end, namely, new knowledge … Metaphors are not intended to represent the phenomenon under study … but rather … to suggest some fruitful paths to follow in exploring the nature of that phenomenon leading eventually to new data, concepts, and propositions." This is the case with the concepts implicated in dramaturgy which may explain its multi-disciplinary appeal.

The dramaturgical perspective is relational, processual, situational and inclusive aiming to extract meaning, which is emergent, contextual and contingent, and, consequently, to understand problems and generate knowledge (Hajer 2005; Yanow 2007; Brissett and Edgley 2017).[41] Its emphasis on expression elevates the significance of emotions and the emotional content of social practices in any action setting (Anderson 2014;

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[37] As Brisset and Edgley (2017: 3) put it: "Not what people do nor what they intend to do, nor even why they do it, but how they do it".

[38] For an interesting discussion, see: http://performancephilosophy.ning.com/profiles/blogs/judith-butler-performativity-and-dramaturgy (accessed on June 4, 2019).

[39] Hajer (2005: 630) underlines: "the very variability of the setting and staging of politics calls for more explicit attention to the dramaturgical side of political processes".

[40] Or, dramaturgic social science (Stebbins 2017).

[41] Hajer (2005: 624) notes: "Portraying political processes as sequences of staged performances of conflict and conflict resolution … gives a new perspective on joint policy learning and opens a perspective on how to enhance the democratic quality of policy deliberation".

Stebbins 2017). Pertinent applications combine a variety of research methodologies including laboratory and field experimentation, survey research, historical-cultural research, ethnographic analysis, speculative philosophical analysis, critical analysis, among many others (Anderson 2014; Brissett and Edgley 2017).

The present analysis adopts a variant of the dramaturgical perspective; namely, vitalist non-representational dramaturgy (Vannini 2013), that combines dramaturgy with post-structuralism, in particular with non-representational theory (Anderson and Harrison 2016), drawing on their affinities and relaxing dramaturgy's exclusive focus on human agency. This more-than-human perspective challenges the primacy (but not the value) of human agency, assigns agency to nonhuman entities (things), underlines the capacity of human and nonhuman agents to act and be acted upon, embraces the vitality of matter (Bennett 2010; Ingold 2011), and the animated nature of all living things (Vannini 2013).

The particular dramaturgical-interpretivist approach adopted provides for a more germane, meaningful analysis of the tragedy of the commons for two main reasons. First, the tragedy of the commons involves acts between human and nonhuman entities. The latter are not simple inert props or neutral background but active agents crucially determining the unique composition, dynamics and two-way human-nonhuman interactions of concrete commons. Human use modifies the (nonhuman) commons but these commons (modified or not) also limit, facilitate or redirect human activity, engendering tangible and intangible benefits or costs to individuals and communities; i.e. the commons possess agency, although not of the same kind like human agency (Ingold 2011; Vannini 2013). Second, tragedy *is* a kind of drama which is used here as a metaphor to analyze and interpret the tragedy of the commons by employing its key notions – praxis, mimesis, tragic hero, tragic error, tragic outcome, pity, fear and catharsis.

The tragic hero is posited to be the commons, broadly conceived to include traditional and new, material/tangible and immaterial/intangible commons (Hess 2008). The 'spectators' are those attending the 'tragedy of the commons'. Certain, not mutually exclusive, classes of 'spectators' include users who directly harm them,[42] those directly impacted, those indirectly responsible for the harm, those responsible for managing the tragedy of the commons, and those unwittingly impacted and experiencing the variegated consequences of the destruction of the commons (e.g. the earth population in the case of the global commons). An important difference between the play and the real world is that, in the latter, the distance between the tragic hero, the commons, and the 'spectators' is variable depending on the nature and spatio-temporal reach of the commons.

Praxis encompasses both the material/physical and non-material human actions, associated with the drivers and the direct causes of CPR dilemmas, which biophysically, socio-economically, culturally and politically modify the commons and the (re)actions of the commons that modify human activities (e.g. dys/malfunctions) and behavior (e.g. adaptation, self-regulation, policy action). These universal actions (they can occur anywhere, to anyone/anything) implicate numerous human and nonhuman entities from different spatial levels. Harmful actions, with undesirable, and often socio-spatially unjust, consequences, are usually beyond the power of the commons to ward off. Real world tragic events, however, are not always 'unexpected' as in the play; several commons are systematically mismanaged but failure often occurs unexpectedly.

Mimesis concerns the numerous, diverse, material and immaterial communication means/media and actions through which CPR dilemmas reach the 'spectators'. Their discussion is beyond the scope of this paper. Obviously, the frequency, strength, quality, vividness, importance of the information and the ways by which it is 'transmitted' and received shape and critically determine the knowledge and perception of the problem and people's reactions (learning, emotional arousal, participation, cooperation) (Thompson 2000; Ramírez-Sánchez 2006; Czap et al. 2013; McCoy 2013; Büchs et al. 2015).

The tragic error, the Aristotelian hamartia, which the tragic hero commits, has a dual interpretation. The first is that the commons involuntarily 'commit' the tragic error. They universally offer valuable ecosystem services and diverse economic, socio-cultural and psychological benefits, but the 'superior forces', human mismanagement and misuse (the wrong context), cause terrible 'reversals' which they do not deserve. Because they are environmentally and socio-culturally sensitive and vulnerable (e.g. sensitive ecosystems, socio-politically contested spaces), they fall from 'well-being' to 'misfortune' and endure pitiable and fearful sufferings,[43] ceasing to offer their valuable services to people. Reversals essentially occur when the genuine "I-Thou", the "we" relationships of friendship *sensu* Aristotle, between people and the commons are breached, when the CPR exchange values are prioritized over use, option and existence values (Cafaro 2001; Stout

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[42] In Ostrom's (1990) typology: owners, appropriators, consumers.

[43] The tragic hero must be an object of fear and pity so that the spectators experience fear and pity to the spectators (Nussbaum 1992).

2010; Bina and Vaz 2011). Their magnitude, scale and coherence, the constellation of actors and actions, the sensitivity of the CPRs and the particular historical circumstances and contingencies determine the kind and magnitude of the sufferings of the commons.

The second interpretation is that hamartia concerns the users of the commons who misjudge and engage in inappropriate use and management because they fail to fully appreciate *a priori* the sensitivity and value of the commons. Both interpretations point to the critical role of the context (the superior forces) within which the tragic hero, the commons, exercise their 'virtues'. The CPR and other pertinent literature[44] underline the significant role of contextual factors in generating CPR dilemmas and conditioning their resolution (Ostrom 1990, 2010; Steins and Edwards 1999; McCay 2002). Ostrom's (1990, 1999; also Agrawal 2001) design principles include features of the context that constitute conditions determining the chance of CPR dilemmas, or else, the situated chance of the tragic error.

The ills of the commons and the broken relationships of friendship following the tragic error generate the tragic outcome: the achievement of the telos of the tragedy, the attainment of collective eudaimonia from using CPRs, is blocked by harming their very qualities needed to achieve it. The litany of valuable CPRs destroyed for the very reason that they are valuable, and hence vulnerable, is infinite. Technological optimism (Cornucopianism) is often blamed for ignoring critical resource limits and destroying precious, nonrenewable CPRs.

In the Aristotelian perspective, the modern 'spectators' assess the value and ills of the commons, judge that they are fearful and pitiable, confront dilemmas and conflicts and, through an identification process, experience fear and pity. Both internal/personal and external/contextual factors determine how people perceive, comprehend, experience, evaluate and emotionally respond to these ills. Fear, and the related sense of risk, depend on the scope, nature and intensity of damages, the 'distance' from, scale of, familiarity with and dependence on the CPRs, beliefs, values, moral dispositions, environmental conditions, the institutional and socio-political context, and available scientific and lay knowledge and information (Ostrom et al. 2002; Giordano 2003; Smith and Leiserowitz 2014; Büchs et al. 2015). Those directly impacted may fear because their livelihoods and welfare are threatened, either due to their decisions (e.g. unsuitable practices) or the decisions of others (e.g. institutions, technology). Distant users may fear that they risk suffering the same ills for similar reasons.

The experience of pity is also conditional. The spectators may feel pity if they believe and judge that the CPRs are valuable, are being undeservingly and significantly harmed or were unwittingly destroyed due to incomplete knowledge of their fragility and sensitivity, if they fathom the broken valuable relationships (friendship) within and with the CPRs and their users, or if the perpetrators repent after the fact. Obviously, 'spectators' who feel neither fear nor pity pose important challenges for CPR governance.

The experience of fear and pity *in combination* causes astonishment and leads to recognition and learning of the causal sequence that generated the tragic error, the magnitude of the ills and the advantages and pitfalls of various practices of managing/governing the commons. This emotions-driven passage from ignorance to knowledge by means of the didactic and cathartic role of fear and pity, i.e. catharsis, offers inner pleasure, relieves of excessive fear and pity and, more importantly, provokes praxis because people now know how to act to remedy the problems.

Following catharsis, people are motivated to engage in virtuous praxis. Through deliberation and reasoning, and depending on the circumstances, they may decide to undertake ameliorative/corrective actions and/or avoid destructive ones (e.g. adopt good practices, improve institutions) in order to minimize the risk of future tragedies and, unwittingly perhaps, the incidence of pity and fear. By habitually doing good acts, people develop personal and public virtues. Virtuous citizens make wise decisions, gradually restore the broken relationships and the bonds of friendship between them (e.g. cooperate, develop trust) and with the commons, thus, flourishing in the restored commons. In an Aristotelian perspective, the catharsis of the commons is an *emotions-driven learning process* begetting personal and collective eudaimonia of and in the commons, which is the telos (aim, completion, end) of the tragedy of the commons. The achievement of eudaimonia is contextual, contingent and dynamic critically depending on how the process evolves from start to end. More specifically, on how the factors controlling the perception, understanding, valuation and action on the commons (cf. **Figure 1**) combine in and over time (*kairos*)[45] to integrate reason (*logos*) and emotion (*pathos*) to form virtue (*ethos*), the prerequisite of eudaimonia.

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[44] E.g. Virtue Ethics (Treanor 2010) and Flyvbjerg's (2001) phronetic approach.
[45] I.e. doing the right thing at the right time (Kinneavy and Eskin 2000; Benedikt 2002).

5. The Catharsis of the Commons – The Aristotelian-Inspired and Contemporary Approaches Compared and Synthesized

The contemporary study of the commons follows three broad approaches: the institutionalist, the moral and the phronetic. These are briefly presented and compared to the Aristotelian-inspired approach, especially with respect to how they suggest to achieve the telos of the tragedy: eudaimonia of and in the commons. A synthesis of all four approaches is finally proposed.

The thrust of the CPR literature concerns the environmental commons and adopts an institutionalist approach to their management and governance. The mismanagement of CPRs and the associated appropriation and provision problems (Ostrom (1990, 1999) are attributed to free riding and lack of incentives to protect/restore them (Ostrom 1990; Bromley 1991). Rational actors in the commons free ride because the rational thing to do is to prioritize the individual over the common interest. The end result, destroyed commons, is a social dilemma, a Prisoner's Dilemma; the actors are locked-in tragic situations where "self-sacrifice … is self-defeating" (Treanor 2010: 16). MacLellan (2015) argues that the essence of Hardin's (1968) 'tragedy' is that environmental protection is infeasible under free market conditions. Essentially, the institutionalist approach attributes the consequences of the tragic error, collectively undesirable outcomes, to making 'good' rational decisions (prioritize self-interest) in the 'wrong' context (market or open access conditions). Ostrom, like Aristotle, has cautioned that not all CPR dilemmas are tragic. Under certain circumstances, some undesirable outcomes may be avoided or corrected at low cost.

The effects of CPR mismanagement (i.e. of the tragic outcome) are the environmental and socio-economic costs befalling on CPR users that, coupled with lack of incentives to protect them because they are 'common', deem collective corrective action necessary. Privatization and state control are frequently proposed to resolve CPR dilemmas. An extensive literature has persuasively and avidly argued that these do not produce desired results (Ostrom 1990; Ostrom et al. 1999; Thompson 2000; Ostrom et al. 2002; Marcus 2016). Drawing on Ostrom's (1990) seminal work, institutional arrangements and incentive structures (economic, institutional and other means) that promote social learning and cooperation/collaboration among CPR users on and across levels, the quintessence of self-organization and self-governance, have been elaborated such as polycentric (multi-level) governance, (adaptive) co-management, and adaptive governance (Ostrom 1990, 1999; Agrawal 2001; Folke et al. 2005; Plummer et al. 2010). Experimental and empirical research indicates that group dynamics, individual traits and contextual factors combine to influence the perceived costs and benefits of individuals towards cooperation, encourage the development of coordinated strategies for the appropriation and provision of the commons, and ensure the success of their governance.

Group dynamics concerns the multitudinous evolving relationships among social actors. Social capital, encompassing networks, socio-cultural, emotional and other bonds, trust, reciprocity and collective identity, consistently figures as the upmost determinant of cooperation and collaboration leading to social learning. Individual traits affect interpersonal relationships and significantly judge the outcome of cooperation efforts. They include education, knowledge, beliefs, character/morals, values/preferences, emotions, emotional attachment, problem and risk perception, motivations/motives (self-interest, conformism, empathy, inequity aversion, sense of belonging). Finally, contextual factors, such as socio-economic conditions, technology, culture and institutions, encourage or stifle cooperation at all levels (Ostrom 1990, 2010; Winston 1996; Steins and Edwards 1999; McCay 2002; Adams et al. 2003; Sick 2008; Johnson and Levin 2009; Van Vugt 2009; Plummer et al. 2012; Czap et al. 2013; Marcus 2016).

A less discussed, but no less important than the institutionalist, is the moral approach to which Hardin (1968) also alluded. Rooted in numerous thinkers through the ages, including Aristotle, Thoreau, Leopold and Carson (Cafaro 2001), it has reemerged in the 1990s with the rise of environmental ethics, positing that ethics is indispensable for the management of common affairs (Marquez 2010). Virtue ethics, founded in Aristotle, enquires the formation of individual values, virtues and the moral reasons of praxis, possessing, thus, the potential to improve the relationships among people and between them and the commons, to breed stewards of the commons and contribute to the essential resolution of CPR dilemmas (Foster 2002; SEP 2002; Jamal 2004; Bina and Vaz 2011; Hannis 2015). In the case of large-scale commons dilemmas, their size and complexity as well as epistemic constraints and the hard trade-offs humans face point to the limits of Virtue Ethics (Marquez 2010).

In a similar vein, the phronetic approach to research and governance of the commons, grounded on Aristotelian *phronesis*, is gaining ground (Kooiman 2005; Jentoft 2006; Linke and Jentoft 2014). First introduced by Flyvbjerg (2001), it emphasizes ethics, value rationality to balance instrumental rationality, interpretation, judgment, participation, power relations and praxis. It underlines the situatedness of knowledge, decisions and action and stipulates the possession and application of *phronesis* to ensure the

ethical employment of science (*episteme*) and technology (*techne*) in concrete decision situations. Phronesis, acquired through experience and education, functions on the basis of deliberation, judgment and practical rationality to choose the mean in a given situation, adapting action to context (Flyvbjerg 2004). Emotions are not explicit in the original formulation, despite their important relationship to phronesis, values, judgments and praxis as Thuesen (2011) convincingly argues[46] and the preceding discussion has demonstrated.

Summarizing, the Aristotelian-inspired rendering of the tragedy and the catharsis of the commons exhibits commonalities and differences with the institutionalist, moral and phronetic approaches. **Table 1** offers a preliminary, rough comparison of all four approaches along criteria pertinent to the analysis and the management and governance of the commons. Certain criteria do not appear to occupy a central position in some approaches, hence their limited discussion and lack of information. Cells marked with an asterisk indicate that further research is needed for valid assessment and comparison.

Strong commonalities among the approaches[47] are mostly found, to a greater or lesser extent, along the following criteria: model of human behavior and decision making; understanding of the CPR dilemma; role of individual traits, ethics/values, social capital and context. Although all four approaches generally assume rational individuals aiming at personal and the common good, the Aristotelian-inspired and the phronetic approaches stress both value and instrumental rationality while the institutionalist and the moral approaches prioritize instrumental and value rationality, respectively. As a consequence, they share the Aristotelian-inspired understanding of the universal structure of the tragic problem (CPR dilemma) – rationality/virtues exercised in the 'wrong' context underlie the tragic error and produce tragic outcomes. However, the institutionalist approach focuses on the lack of incentives that leads to free riding, while the moral and the phronetic approaches stress the lack of morals/virtues and the lack of phronesis in making resource use decisions, respectively.

Of the individual traits, the Aristotelian-inspired and the phronetic approaches underline virtues (phronesis in particular), experience and education although the Aristotelian-inspired does not downplay all other traits. The institutionalist approach concentrates on more instrumental traits and the moral approach on morals and virtues. Consequently, the role of ethics/values is explicit and strong in three out of the four approaches while it remains implicit in the institutionalist approach.

The strong role of social capital as the indispensable prerequisite for cooperation among equals to govern their common affairs, is recognized by all four approaches with the Aristotelian-inspired approach adopting the more nuanced version of friendship (*philia*). Similarly, with respect to context, all four approaches underline the situatedness of CPR dilemmas and their resolution, the particular sequence and intertwining of events (the story/plot) that determine the tragic outcome and the intricate process of learning that underlies the resolution of the 'tragedy'.

Weaker commonalities are found along the 'goal of CPR management and governance' criterion. Although all four approaches agree that sustainable development (or eudaimonia per Aristotle) is the goal of CPR management and governance, they interpret, define and operationalize this goal differently. The Aristotelian-inspired approach, following Aristotle, considers eudaimonia as a balance between material (external) and immaterial (internal) resources (Smith 1999), the institutionalist approach concentrates on the instrumental/operational aspects of sustainable development, the moral approach stresses stewardship and an expansive version of 'citizenship' (Marquez 2010) and the phronetic approach understands sustainable governance as the application of phronesis in concrete cases to ensure ethically chosen scientific and technical solutions.

The differences among the four approaches are located along the following criteria: focal spatial scale, time frame, focus and priorities, role of emotions, role of power, model of CPR management, and means of CPR management. The Aristotelian-inspired approach starts from the individual, focuses on the cathartic role of pity and fear *combined* in coping with the consequences of the tragedy of the commons and incites people to develop personal and public virtues to eventually attain personal and collective eudaimonia in and of the commons. Similarly, the phronetic approach looks at both the individual and the community level. The institutionalist approach starts from the collective (community), assumes rational (not necessarily virtuous) individuals and concentrates mostly on institutions and the resolution of the appropriation and provision problems. The moral approach focuses on the individual only being concerned with the moral basis of individual actions(s). The time frame implicit in the Aristotelian-inspired and the phronetic approaches is the whole short-to-long term range, the short-to-medium term in the institutionalist approach and the long-term in the moral approach.

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[46] Also, cf. Michel (2013).

[47] More than two approaches having 'strong commonalities' along the respective criterion.

Table 1: Comparison of the Aristotelian-inspired, institutionalist, moral and phronetic approaches to the tragedy of the commons.

Criteria	Approaches			
	Aristotelian-inspired	**Institutionalist**	**Moral**	**Phronetic**
	Analysis – Description, Explanation			
Focal spatial scale	Individual (citizen) and community	Community	Individual	Individual and community
Time frame	(*) Long-term	Short-medium	(*) Long-term	Short-long
Model of human behavior and decision making	Value and instrumental rationality *Rational individuals aiming at personal and the common good (eudaimonia)*	Instrumental rationality *Rational individuals (utility maximizers) aiming at personal and the common good*	(*) Value rationality *Rational individuals aiming at personal and the common good*	Value and practical rationality *Rational individuals aiming at the personal and common good*
Focus and priorities	Praxis Learning Rationality & Emotions Virtues Political regime, state legislation	Institutions Appropriation and provision problems Direct impacts	Personal and political virtues	Values; Virtues; phronesis Praxis Deliberation Judgment
Understanding of the CPR dilemma	Rationality/virtues exercised in the wrong context lead to tragic outcomes	Individual rationality exercised in the 'wrong' context (lack of incentives) leads to tragic outcomes due to free riding	Lack of morals/ virtues in resource use decisions produces tragic outcomes	Lack of phronesis in resource use decisions produces tragic outcomes
Role of individual traits	Strong (values, virtues, experience, character and other personal traits)	Strong (age, education, values, etc.)	Strong (values, virtues) Moral reasons of praxis	Strong (education, experience, phronesis)
Role of ethics/ values	Strong	Implicit	Strong	Strong
Role of social capital	Strong The central role of friendship (*philia*)	Strong The central role of social capital (Cooperation, trust, social bonds, learning)	(*) Strong Cooperation, trust, social bonds	Strong Cooperation, trust, social bonds
Role of context	Strong (Legal, institutional geographic, socio-economic, cultural)	Strong (Institutional, geographic, socio-economic, cultural)	Strong Contextual nature of virtuous action	Strong Situatedness of knowledge, decisions and praxis
Role of emotions	Explicit	Implicit	(*) Explicit	Implicit
Role of power	(*) Implicit	Not discussed	(*) Not discussed	Power relations central for praxis

(Contd.)

Criteria	Approaches			
	Aristotelian-inspired	**Institutionalist**	**Moral**	**Phronetic**
	Management, Governance			
Goals of CPR management and governance	Individual and collective eudaimonia	Sustainable CPR management and governance	Stewardship 'Citizenship' Improve relationships among people Political engagement	(*) Sustainable governance; Apply *phronesis* to ensure the ethical use of science (*episteme*) and technology (*techne*) in concrete decision situations
Model of CPR management	(*) Democratic, open, participatory Guided by the doctrine of the mean, and the sufficiency principle	Polycentric, multi-level governance Adaptive co-management Adaptive governance	(*) Moral basis of CPR management (whatever CPR management happens to be)	Phronetic planning Value-rational, interactive, reflexive, deliberative, participatory governance Sufficiency, moderation
Means of CPR management	Education in virtue Situated, detailed management schemes Political institutions (democratic laws)	Situated management schemes Institutional arrangements, incentive schemes, innovation Rights (all kinds)	(*) Priority on education to complement incentive schemes and technical solutions	Situated 'mean' solutions; management schemes combining a variety of means

(*) Needs further elaboration for valid assessment and comparison.

- ▨ Strong commonalities.
- ▨ Weak commonalities (variations).

The particular focal spatial scale and time frame explains the different focus and priorities of each approach. The Aristotelian-inspired approach focuses on praxis at both the individual and the collective level (state) and learning that help people develop virtues and make decisions that balance rationality with emotions. The institutionalist approach focuses on institutions and prioritizes the analysis of direct impacts of the appropriation and provision problems. The moral approach focuses on personal and political virtues while the phronetic approach prioritizes values, virtues, praxis, phronesis, deliberation and judgment.

The role of emotions is central in the Aristotelian-inspired approach and is taken into account in the moral approach while it is implicit in the institutionalist and the phronetic approaches. The role of power plays a central role in the phronetic approach, it is implicit in the Aristotelian-inspired approach and it is not explicitly discussed in the institutionalist and the moral approaches.

Finally, the previous differences carry on the different model espoused and means of CPR management each approach proposes. The Aristotelian-inspired approach supports a democratic, open and participatory model guided by the doctrine of the mean and the moderation (sufficiency) principle. Prioritizing education and the political regime, it favors situated and detailed CPR management schemes. The institutionalist approach supports polycentric, multi-level governance, adaptive co-management and adaptive governance that materialize, under secure systems of rights, through situated and coordinated management schemes combining institutional arrangements (institutions), incentive schemes (economics) and innovation (technology). The moral approach stresses the moral basis of CPR management, irrespective of management model pursued, and prioritizes education (broadly conceived) to complement technical solutions and incentive schemes. Lastly, the phronetic approach advocates interactive, reflexive, deliberative and participatory value-rational governance guided by the moderation and sufficiency principles to generate context-specific management schemes combining a variety of technical and non-technical means.

The commonalities among all four approaches imply that a synthesis exploiting their complementarities may produce governance schemes that reconcile their differences and more effectively address the resolution of the tragedy of the commons. An obvious fundamental prerequisite is the provision of equal rights (access, information, decision making) for all in the commons. The core idea is that however well-developed a CPR governance scheme may be, if it lacks emotional foundations on pity and fear for the ills of these CPR, it may likely fail to lead to phronetic choices/decisions and produce eudaimonia. The rationale of the proposed *emotions-centered institutionalist-phronetic approach* for integrating emotions into the governance of the commons is as follows. The perception of actual or anticipated fearful and pitiable ills, the loss of valuable qualities and services of particular CPRs, should generate pity and fear to those implicated to set in motion the process of catharsis; i.e. recognition and learning about the tragic error. This process stimulates social learning, deliberation, reasoning, and prudent decision making to engage in praxis to restore the broken relationships; i.e. devise suitable institutional arrangements, management practices, economic incentives, education and communication (Hards 2011; Marcus 2016). By habitually repeating these actions, people develop virtues that strengthen trust, bonds and cooperation among them, i.e. social capital, further social cohesion, produce phronetic governance and achieve personal and collective eudaimonia, the telos of governing the commons. Obviously, the earlier pity and fear are experienced, the earlier people will be induced to act, contrary to the 'wait-and-see stance' where action ensues disaster (Johnson and Levin 2009).

Based on **Figure 1**, the targets of the proposed approach that may be amenable to policy interventions at both the individual and the collective level simultaneously, but are still inadequately addressed, are (a) the perception of CPR dilemmas, (b) underlying beliefs and value systems, (c) moral dispositions and (d) the socio-political context. At the individual level, education, awareness raising and communication (mimesis in the play) are the primary means through which changes may be effected on those factors importantly influencing the emotions of fear and pity. These changes may enhance appreciation of the sensitivity and value of the commons,[48] nurture negative dispositions for their ills and positive dispositions for their restitution and, eventually form virtuous individuals, stimulate changes in priorities from self- to common interest and encourage action to re-inhabit the commons (Alford 1993; Jamal 2004; van Vugt 2009; Marquez 2010; Bina and Vaz 2011; Hards 2011; Czap et al. 2013). More focused education *of* the emotions has been suggested (Nussbaum 2006; Sokolon 2006; McCoy 2013) that points to the use of documentaries, films and other media to 'teach' the present and future tragedies of the commons.

At the collective level, an enabling institutional environment, supporting phronetic decisions of virtuous individuals to avert the incidence of tragic errors, should prompt a teleological shift in governance from efficiency to, or combined with, sufficiency. The sufficiency principle, articulated within the sustainability discourse, asks for moderation and self-restraint in the use of resources (Princen 2003; Sorell 2010; Schäpke and Rauschmayer 2014; Kanschik 2016). It coincides with Aristotle's conception of sufficiency as the governing principle of the city-state and stipulates the formulation and implementation of moderation-driven policies. Integrating the moral and emotional dimension in all policies might provide the feedback mechanisms needed to maintain a sufficiency-enabling institutional environment. Incorporating sufficiency, moral and emotional criteria in governance schemes, such as adaptive co-management and governance, may yield more effective CPR case-specific outcomes and address related open challenges (Plummer et al. 2010).

6. Conclusions

The exploration of the tragedy of the commons by using the Aristotelian definition of the tragedy as a metaphor highlighted the critical role and wider socio-political importance of fear and pity for its resolution and for furthering personal and collective eudaimonia. Emotions, according to Aristotle and the contemporary literature, are important determinants, explanatory factors and indispensable accompaniments to reason in decision making as well as essential constituents of virtue, the foundation of eudaimonia. The emotions-driven learning process of catharsis, besides clarifying the causality of the tragedy, has the potential to motivate action that, under favorable socio-political circumstances and in concert with reason, may lead to 'cleaning'/purifying/relieving the commons of their ills, their catharsis. The present analysis thus, suggests that emotions should be integrated into current institutionalist, moral and phronetic approaches or, even better, they might be synthesized into an *emotions-centered institutionalist-phronetic approach* to offer a compleat framework for the study and governance of the commons. Within

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[48] Theobald (1997) has insisted that the cultivation of civic virtue should be turned into the most important educational goal and Bollier (2002) has urged for a 'narrative of the commons' (both cited in Hess 2008, p. 10).

this framework, education of and in the emotions coupled with an institutional environment grounded on phronesis and sufficiency emerge as contemporary policy priorities.

Despite the long-recognized role of emotions and the contemporary affective turn in the Social Sciences, the role of emotions remains a relatively under-researched topic in the CPR literature. Future interdisciplinary and transdisciplinary, theoretical and empirical research is called to address stimulating questions drawing on the present introductory, and inevitably general, analysis. **Figure 1** suggests several lines of research to be followed for a variety of CPRs and the respective users and policy makers; these include identifying (a) the two-way relationship of perception of CPR dilemmas and emotions under the influence of internal/personal and external/contextual factors, (b) which features of the CPR dilemmas are perceived as fearful and pitiable, thus, arousing pity, fear and other emotions, as influenced by distance from and scale of the problem, beliefs, values, socio-political conditions and other factors, (c) how emotional arousal influences the process of catharsis – recognition and learning, (d) the effects of catharsis – motivation to act and actions taken, (e) how taking action under the influence of emotions and reason contributes to the development of personal and public, intellectual and moral virtues, especially phronesis, friendship and justice, (f) how this emotions-driven sequence contributes to resolution of CPR dilemmas and the achievement of personal and collective eudaimonia.

A related line of research concerns the study of the currently underrated explanatory role of emotions and their integration in institutionalist, moral and phronetic approaches; for example, complementing Ostrom's (1999) design principles and incentive structures or the methodological guidelines of phronetic planning research (Flyvbjerg 2004). The synthesis of the four approaches into the proposed emotions-centered institutionalist-phronetic approach first requires their thorough and detailed comparison (along the criteria of **Table 1** at least). The proposed approach should be theoretically elaborated, operationalized, detailed and empirically evaluated (if possible) to assess its viability, worth and contribution to understanding and governing the commons.

Finally, a cross-cutting crucial research question concerns the degree to which the possession of rights on the commons influences their perception, emotional arousal, motivation to act and, eventually, the catharsis of CPR dilemmas. Case study and action research are particularly suitable methodological routes in the present context. They should encompass all types of CPRs in a variety of geographical contexts and spatial scales to reconnoiter if the tragedy and the catharsis of the commons, besides being major socio-economic, moral and political, are profoundly emotional problems.

Competing Interests
The author has no competing interests to declare.

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