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Sketching Envy

From philosophy to psychology

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Abstract:

What is envy and how can we define it so as to incorporate the emotion in economic models? Through referring on philosophical and psychological researches, this paper aims at deriving a stable and concise definition of the emotion of envy. Philosophy allows us to define the elements that form envy and to disentangle the latter from other emotions. Researches on psychology help us in understanding the affective and behavioural responses of the emotion. We conclude that envy arises from any unflattering social comparison that threatens individual self-evaluation and includes a depressive and a hostile dimension. We also discuss whether the behaviour induced by envy results in destructive or in emulative actions. We will disentangle the elements that might explain why envy does not always exert the subject to adopt a hostile attitude toward the envied.

Key words: Envy, Philosophy, Psychology, Emotion, Social comparison.

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1. Introduction

Theodore Roosevelt claims that "Probably the greatest harm done by vast wealth is the harm that we of moderate means do ourselves when we let the vices of envy and hatred enter deep into our own natures". By these lines, the former President of the United States underlines that envy is an obstacle to the good working of modern societies. In line with the latter many scholars emphasize on the danger of that emotion. Belshaw (1955) and Mui (1995) stress the economic ravages incurred by envy that can refrain economic activities. More precisely, they refer to the emotion of envy to explain why agents (e.g. persons, group of persons or firms) are reluctant to introduce innovation. According to them, agents renounce to innovate because they fear that by innovating they arise envy within non-innovating agents which can push the latter to attack them. Rawls (1971) is so afraid of envy that his theory of justice relies on the assumption that individuals are born without envy. More recently Zizzo and Oswald (2001) suggest that, motivated by envy, a great majority of subjects choose to destroy others' incomes even by incurring a personal cost. Beckman et al. (2002) point out the invasiveness of envy in decisions involving Pareto efficiency and convey that envy is a powerful micro-motivation. Why such a fear about envy?

The emotion both fascinates and frightens scholars. Envy fascinates because it is mostly inherent to human nature and one of the most powerful emotion leading to behaviour. Envy is an omnipresent emotion rendering it very difficult to cope with: it is one of the very first emotion that children are prone to experience inside the core of their, even protective, family.² Schoeck (1969) also emphasizes on the pervasive character of envy by making references to various cultures. The author underlines that whereas we do not find in every culture concepts such as love, hope or justice; every civilization, even very primitive ones, have implemented one or more specifics terms in order to represent the person who is distressed by the others' members possessions which he lacks and who desire to see these desired attributes destroyed without obtaining it. Furthermore every culture has implemented devices made of norms and rituals in order to prevent envious feelings and to protect oneself against envious persons. Foster (1972) also supports this claim and tries to distinguish the different behaviours implemented by societies so as to cope with envy. Nevertheless, at the same time, the emotion embodies a threatening aspect: consumed by envy, the subject is exerted to engage in an hostile attitude aiming at harming others' desired situations even at his own expense. Envy is considered as a dangerous emotion that may drive to dramatic issues such as violent acts, aggressions or even crimes (Glick, 2002; Schoeck, 1969). In addition, envy is considered as a negative

² Freud insists largely on the consequences of that latter point by introducing the concept of "childhood envy".

emotion (e.g. the Bible considers envy as one of the Sevens Sins) and thus socially condemned and highly refrained in almost all societies.

The invasive character and the negative consequences of envy are responsible for captivating economists who quickly take an interest in that emotion. Envy made its debut in economics analyses through normative economics. Normative economists refer to envy in order to implement a concept which fulfils two joint objectives: to discriminate among all Pareto equilibria and to include a justice criterium. Tinbergen (1956) is among the first in attempting to introduce envy in economics by emphasizing the good way of living in a society in which envy was excluded. Then Foley (1967) offers the first lines presupposing the introduction of the "envy-free" concept. He writes "An allocation is equitable if and only if each person in the society prefers his consumption bundle to the consumption bundle of every other person in the society" (p. 74). By writing these lines, the author highlights two key elements in the economic perspective of envy (economic envy afterwards). First, this definition implements a condition for economic envy to arise: the social comparison. Indeed economic envy can only arise if some agent i compares his situation to the situation of another agent j ($i \neq j$). Then economic envy appears only when social comparisons reveal some disadvantageous inequality: agent j's situation overshadows agent i's situation. To summarize subjects might be willing to enjoy having what others possess and being in others' shoes. If someone prefers other's situation to his own and he's willing to exchange his situation with the other agent's situation then economic envy is present and the situation is considered as unfair. Hence economic envy is apprehended as being an obstacle to the implementation of justice.³

Albeit envy has been the object of several intense debates among normative economists, all definitions offered to model envy include at least two elements: social comparison and inferiority.⁴ Nevertheless all concepts proposed to model envy consider the latter under a technique configuration and conceive it under a linear perspective, i.e. excluding all the complexity and the protean character of the emotion which renders envy so interesting. Economic envy is free of any feelings or affective states and so suffers from not being differentiated from covetousness or resentment. Economic envy is ought to arise from any disadvantageous inequality between two agents, without making any reference to who are the agents and whether they share or no common characteristics. Then as economic envy is defined as a reaction to a deviation from equality, the latter is ought to be reduced and even erased only by restoring equality. Kolm (1995) writes: *"Equality prevents envy"* (p. 66). Besides economists have different positions concerning the behaviour resulting from the experience of envy. On the one hand some economists consider that envy may

³ See Feldman and Kirman (1974); Kolm (1972, 1995) and Varian (1974).

⁴ See Konow (2003) or This Saint-Jean (2006).

serve as a motivating force and exert the subject to make additional efforts so as to improve his position (Grolleau et al., 2010; Marglin, 2002). On the other hand, scholars consider the action resulting from envy as resolutely destructive, i.e. exerting the subject to damage others' position (Beckman et al., 2002; Rawls, 1971; Zizzo and Oswald, 2001; Zizzo, 2008).

There still is a remaining question: What is envy? A basic and natural need? A situation in which you see something in someone's hands and desire it? A kind of rancour in front of someone's success or advantage? These are the most probable definitions people would give you if you ask them to define envy. This illustrates how difficult is to define envy and to recognize the latter. Then several questions can also be addressed: Can envy arises without social comparisons? Can any unfavourable social comparisons generate envy? What is the connection between inequality and the emotion? How can we reduce envy? Is envy associated to hostility? Can we remove the hostility from envious episodes? Through this paper, we find answers to these questions.

We aim at sketching the emotion of envy. What is envy and how can we identify the emotion? More precisely, the paper's objective is to refer to researches made on the emotion so as to derive a stable and concise definition of envy. Offering a concise definition of envy is a particularly relevant issue in economics. As mentioned above, economics are interested in the emotion in many aspects (e.g. when defining allocations of bundles, when implementing contribution mechanisms to public goods or in principal-agents relations). Then a concise definition of envy would help economists to develop their understanding of the emotion so as to improve the relevance of economic models, to implement devices to capture the emotion and to investigate its importance in economic decisions. To fulfil our objective we rely both on philosophy and on psychology and we face perspectives of both disciplines on envy. In other words: how philosophers and psychologists define envy, how do they differentiate envy from other emotions or considerations and how do they explain some aspects of the emotion (e.g. the action resulting from the emotion, the relationship between inequalities and the intensity of envy...)?

As mentioned above, envy has attracted the attention of several authors. As a consequence several papers relative to envy can be signalled. Nevertheless if these papers concerns different aspects of the emotion of envy no paper search at building a bridge from philosophy to psychology in the study of envy. Schoeck (1969) and Foster (1972) stress the sociological aspect of envy, Smith and Kim (2007) examine the psychological foundation of envy, Micelli and Castelfranchi (2007) insist on the cognitive aspect of envy and This Saint-Jean (2006), by referring to several philosophers, point out the gap between the philosophical and the economical definition of envy.

This paper consists in two distinct sections. In the first section, we aim at sketching envy from a philosophical perspective. To fulfil that purpose we refer on three major philosophers: Aristotle, David Hume and Aaron Ben Ze'ev. Through this section, we will observe the consensus and disagreements concerning the definition of the emotion among philosophers. They all consider envy as an unpleasant emotion characterised by feeling sad or bothered at the sight of someone's advantage or good fortune. They also presuppose a negative connection between social distance and the intensity of envy and agree upon the absence of any concerns for equality in envy. But they do not all reach a consensus when disentangling envy from resentment and when defining the action resulting from the emotion.

Through a second section, we will complete this definition by referring to psychological researches on envy. Psychologists offer a qualitative description of the emotion, i.e. they focus more on the experiential consequences of envy. They also use investigative methods that help in identifying the importance of several ingredients in envy. With regard to their results we will conclude that envy is a complex emotion mainly made of two affective components: a depressive and a hostile component. We will also quote several psychological researches concerning the hostility included in envy and point out the importance of two notions in modulating the intensity of envy: perceived control and perceived injustice.

2. The Philosophy of envy

Through this section, we aim at reporting how philosophers describe the emotion of envy. Although several philosophers devoted their work studying this complex emotion (Thomas Aquinas, Immanuel Kant, Adam Smith, Sören Kierkegaard...) we limit our analysis to three major authors: Aristotle, David Hume and Aaron Ben Ze'ev. All quoted authors had and still have a considerable influence in economic analysis and thought. Besides they all spend much attention to the study of emotions and more particularly on envy.

We choose not to expand our analysis to other authors for three main reasons. First, the paper's purpose is not to draw an exhaustive review of the philosophical researches about envy. As former papers have already mentioned the works of several philosophers concerning envy (D'Arms and Kerr, 2008; Shoeck, 1969; This-Saint-Jean, 2006), an extensive review of the philosophical literature on envy would be inappropriate. Through this section, we aim at underlining the philosophical consensus and antagonisms concerning the definition of envy. To point out these issues, we choose to refer to three major authors that represent the existing philosophical views concerning the

emotion. The paper tries to shed light on how the emotion of envy can be captured by economists to develop their analyses. Second, one will observe that there is not a great antagonism among philosophers on what envy is. At the end of the first section, the reader will observe that there seems to be a consensus on the definition of envy although some points are still the object of philosophical debates. Again it would be inappropriate to note all philosophical researches about envy. Furthermore, by referring to these philosophers, we cover a great period which allows the reader to have a general view on how the study of envy has evolved. Finally, one could argue that our selection of authors was made in order to shed light on specific features of envy. The results brought in this paper can partly answer to this critic.

As we will convey, envy is a dyadic emotion. For a convenient reading we will use the following terms: "subject", "rival" and "desired attribute". We will refer to the term "subject" so as to represent the person consumed by envy. The term "rival" will denote the target of the subject's envy. The "rival" can be constituted by a single person or a group of persons. Finally the term "desired attribute" catches the good the subject desires but lacks whereas the rival possesses. The desired attribute can be a material good (i.e. car, house) or immaterial one (i.e. success, quality, personality trait, physical trait...).

This section is organised as follows. First we refer to Aristotle's works on envy and detail his writings. Then we focus on the perspective adopted by David Hume when describing envy. After presenting how Aaron Ben Ze'ev sketches the social emotion, we will close this section with a partial conclusion.

a. Aristotle (384-324 BC)

Aristotle presents social comparisons as the core of envy: without comparisons no envy can arise. The philosopher emphasizes the importance of social comparisons in generating several major emotions (e.g. envy, emulation, pity). He considers social comparisons as part of human nature.

According to Aristotle, not every social comparison is expected to trigger envious feelings. Indeed social comparisons can lead to different results and diagnostics. On the one hand, social comparisons can reveal one's own superiority (e.g. when one is performing better than others or when one is better endowed than others). On the other hand, social comparisons can give light to one's own inferiority (e.g. when one is less performing than others or when one is worst-off than others). In that latter case, social comparisons have negative experiential consequences and generate pain or sadness. Aristotle specifies that only unflattering social comparisons can generate envy. Hence Aristotle introduces a key element in the definition of envy: inferiority. The philosopher writes: "*it*

[envy] also is a disturbing pain excited by the prosperity of others" (Rhetoric, Book. II, Chap. IX, 1386b). Envy is focused on the rival's situation who possesses an attribute the subject lacks. The possession of that desired attribute confers to the rival an advantage that overshadows the subject's situation. The rival's advantage can be pictured as a reminder of the subject's inferiority. This last point is painfully experienced by the subject and is the source of envy. We quote: *"We also envy those whose possession of or success in a thing is a reproach to us; (...); for it is clear that is our own fault we have missed the good thing in question; this annoys us, and excites envy in us" (Rhetoric, Book. II, Chap. X, 1388a). Whereas envy appears in situations of inferiority, individuals enjoying a superior position are not liberated from envious feelings. Aristotle also argues that envy can be directed upward (e.g. inferiors envy superiors for the superior position) or downward (e.g. superiors can envy inferiors for their relative superiority in a specific domain such as youth, success, beauty...). Rather than suggesting a general inferiority, Aristotle argues that envy arises from relative inferiority, i.e. inferiority in a specific attribute or domain.*

Following Aristotle it seems very important, in order to generate envy, that both the envier and the rival have a certain relationship and share some similarities. Similarity is considered according to Aristotle as an important element in the envy process: a subject is unlikely to envy a perfect stranger. The philosopher details: *"We envy those who are near us in time, place, age or reputation"* (*Rhetoric,* Book. II, Chap. X, 1388a). Aristotle goes beyond and, in order to highlight the importance of similarity in envy, introduces the notion of *"equals"*. He adds: *"we feel it [envy] towards our equals (...).We shall feel it [envy] if we have, or think we have, equals; and by 'equals' I mean equals in birth, relationship, age, disposition, distinction, or wealth"* (*Rhetoric*, Book. II, Chap. X, 1387b).

The proximity is also an important condition in the envy process. Proximity helps in modulating the intensity of envy. The concept of proximity refers to the difference between the subject's situation (or position) and the rival's one. Aristotle assumes a negative and linear correlation between the intensity of envy and the subject-object distance. We underline: *"We envy those who are near us, in time, place, age, or reputation (...) - we do not compete with men who lived a hundred centuries ago, or those not yet born, or the dead, or those who dwell near the Pillars of Hercules, or those whom, in our opinion or that of others, we take to be far below us or far above us"* (Rhetoric, Book. II, Chapter X, 1388a). The philosopher assumes that when high differences prevail between two subjects, the condition of proximity is far from being fulfilled and thus envy is less plausible to arise. Conversely when differences between two subjects are low, proximity is high that renders social comparisons highly relevant and envy is likely to appear and to be experienced very intensively.

Aristotle states a list of person susceptible to experience envious feelings: ambitious men, smallminded men, competitive persons or persons who possess what we had in our possession (youth, beauty)... He also indicates which goods are more prone to generate envious feelings. We underline: "The deeds or possessions which arouse the love of reputation and honour and the desire for fame, and the various gifts of fortune, are almost all subject to envy; and particularly if we desire the thing ourselves, or think we are entitled to it, or if having it puts us a little above others, or not having it a little below them" (Rhetoric, Book. II, Chap. X, 1388a). Relying on these lines, we can observe that the notion of competition seems to attract a great importance in the presence and intensity of envy. Indeed envy seems to be more present and experienced more intensively in competitive settings. All ingredients required to trigger envy are gathered in competitive settings: at least two persons sharing similar characteristics and objectives, and one good whose provision is limited and whose property confers to its owner an advantage over the others. The philosopher emphasizes the important aspect of competition in envy by the mean of the following lines: "we compete with those who follow the same ends as ourselves: we compete with our rivals in sport or in love, and generally with those who are after the same things; and it is therefore these whom we are bound to envy beyond all others" (Rhetoric, Book. II, Chap. X, 1388a).

When Aristotle pictures envy, one can observe that the notion of pain is omnipresent. While defining envy, the latter writes: "*Envy is a disturbing pain*" (*Rhetoric*, Book. II, Chap. IX, 1386b) or "*Envy is pain*" (*Rhetoric*, Book. II, Chap. X, 1387b). Pain is the experiential consequence of the inferior situation in which the subject is placed in. According to the philosopher, pain might also be generated by the envier to the rival. For Aristotle, it seems obvious that the emotion of envy exerts an influence on the envier's behaviour. Envy induces the subject to undertake an action aiming at ceasing the painful and unpleasant situation of inferiority. Aristotle considers that the action resulting from envious feelings is destructive by nature. Indeed, consumed by envy, the subject might be willing to remove the rival's advantage rather than obtaining the desired attribute. This destructive decision enables the envier to put an end to his inferiority. Aristotle writes: "(...) *envy makes us take steps to stop our neighbour having them [desired attribute]*" (*Rhetoric*, Book. II, Chap. XI, 1388a).

Aristotle uses the action resulting from envy to differentiate envy from emulation. On the one hand, these two emotions share common characteristics that may lead to confusion: both arise from unfavourable social comparisons, require proximity and similarity to appear and are painful experiences. He writes: *"Emulation is pain caused by seeing the presence, in persons whose nature is like our own, of good things that are highly valued and are possible for ourselves to acquire; but it is felt not because others have these goods, but because we have not got them ourselves"* (Rhetoric,

Book. II, Chap. XI, 1388a). On the other hand, Aristotle insists on the importance of distinguishing these two emotional episodes: they lead to different actions that have very different consequences. Aristotle praises emulation considering it as a positive emotion leading to constructive actions. Conversely he apprehends envy as a negative emotion driving to destructive decisions and thus condemns it. He explains: *"Emulation makes us take steps to secure the good things in question, envy makes us take steps to stop our neighbour having them"* (*Rhetoric*, Book. II, Chap. XI, 1388a). The latter follows with: *"It [emulation] is therefore a good feeling felt by good persons, whereas envy is a bad feeling felt by bad persons"* (*Rhetoric*, Book. II, Chap. XI, 1388a). He adds: *"Emulation must therefore tend to be felt by persons who believe themselves to deserve certain good things that they have not got, it being understood that no one aspires to things which appear impossible"* (*Rhetoric*, Book. II, Chap. XI, 1388b). Through these last lines, Aristotle suggests that the (perceived) possibility for the subject to obtain the desired attribute modulates whether envy or emulation appears. The subject is more likely to experience emulation if the latter believes he can obtain the desired attribute by implementing additional efforts. On the opposite, if the subject believes the desired attribute to be out of his range then envy is more plausible to arise rather than emulation.

Finally, Aristotle distinguishes envy from indignation. Again these emotions share very similar characteristics: both result from situations of inferiority, might induce the subject to engage action and are painful experiences. To disentangle these emotions, the philosopher refers to the notion of desert. Indignation concerns undeserved situations of inferiority whereas envy is based on deserved inferiority. Aristotle details that: "Indignation is pain caused by the sight of undeserved good fortune" (Rhetoric, Book. II, Chap. IX, 1387a). He adds: "envy it closely akin to indignation, or even the same thing. But it is not the same. It is true that it also is a disturbing pain excited by the prosperity of others. But it is excited not by the prosperity of the undeserving but by that of people who are like us or equal with us. The two feelings have this in common, that they must be due not to some untoward thing being likely to befall ourselves, but only to what is happening to our neighbour" (Rhetoric, Book. II, Chap. IX, 1386b). Hence the inferiority has to be deserved in order to generate envious feelings. If the situation of inferiority the subject is placed in is undeserved, the subject is more likely to experience indignation rather than envy. Whereas enviers might claim their situation to be unjust, Aristotle considers such claims as attempts to legitimize a socially condemned attitude. Aristotle writes about envy and indignation: "the man who is characterized by righteous indignation is pained at undeserved good fortune, the envious man, going beyond him, is pained at all good fortune" (Nicomachean Ethics, Book. II, Chap. VII, 1108b).

Although Aristotle does not precise the nature of the relation between envy and equity, the emotion he pictured suggests that envy does not rely on equity considerations. Following Aristotle, envy aims

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at establishing a situation of non-inferiority rather than a situation of equality. Indeed, the action envy leads to aims at removing the desired attribute from the rival's hands rather than obtaining it. According to the philosopher, envy does not focus on equality but rather on the rival's situation, i.e. on a relative inferiority.

b. David Hume (1711-1776)

The Scottish philosopher emphasizes the major role of emotions in human decisions. The latter does not assume that individuals' decisions rely exclusively on rationality. Hume believes that individual behaviour is influenced by external factors such as impressions or passions (i.e. emotions). He writes: "So little are men govern'd by reason in their sentiments and opinions, that they always judge more of objects by comparison than from their intrinsic worth and value" (A Treatise of Human Nature, Part. II, Sect. VIII, p. 254). Hume devoted much of his work (particularly Dissertation on the Passions and A Treatise of Human Nature) to the importance of emotions in human nature and behaviour. The philosopher defines passions as: "Those perceptions, which enter with most force and violence, we may name impressions; and under this name I comprehend all our sensations, passions and emotions, as they make their first appearance in the soul" (A Treatise of Human Nature, Part. I, Sect. I, p. 13). Hume defines two different types of passions: direct and indirect ones. Both rely on pleasure and pain but direct passions are directly experienced from good and evil. Whereas Hume does not offer a strong justification for this classification and distinction between direct and indirect passions he provides a short list. Hume declares: "When we take a survey of the passions, there occurs a division of them into direct and indirect. By direct passions I understand such as arise immediately from good or evil, from pain or pleasure. By indirect such as proceed from the same principles, but by the conjunction of other qualities. (...)I can only observe in general, that under the indirect passions I comprehend pride, humility, ambition, vanity, love, hatred, envy, pity, malice, generosity, with their dependants. And under the direct passions, desire, aversion, grief, joy, hope, fear, despair and security" (A Treatise of Human Nature, Part. I, Sect. I, p. 190). Then according to Hume, envy belongs to the family of indirect passions.

Hume sketches envy as arising from social comparisons and more precisely from social diagnostics one derives from these comparisons. We underline: "*The comparison of ourselves with others seems to be the source of envy and malice*" (*Dissertation on the Passions*, Sect. III, p.157). The philosopher emphasizes the pervasive character of social comparisons in human behaviour by claiming "*The comparison is obvious and natural: the imagination finds it in the very subjects*" (*A Treatise of Human Nature*, Part. I, Sect. X, p. 217). The importance of social comparisons in human nature can be

explained by the key role they have in determining and maintaining a person's self-esteem. We quote: *"Comparison is in every case a sure method of augmenting our esteem of anything"* (*A Treatise of Human Nature*, Part. I, Sect. X, p. 217). Then social comparisons leading to favourable diagnostics have a positive impact on self-esteem whereas social comparisons leading to unfavourable diagnostics have negative consequences on self-esteem. Only that latter case is ought to generate envy.

According to Hume, envy is a passion that stems from situations of inferiority. He notes: "envy arises from a superiority in others" (Dissertation on the Passions, Sect. IV, p.159). Hence envy is directed upward: we envy those who enjoy a superior position. Nevertheless Hume defines a sort of envy directed downward. Indeed it is possible for superiors to envy persons from inferior position. An agent may envy inferiors that are improving their position. By improving their position, inferiors threaten the agent's superiority and they can even overshadow the agent by reversing roles. Hence Hume introduces a sort of envy that could be pictured as an anticipation of an expected envy, i.e. one may envy inferiors because they could by improving their position become superior and one would experience envy directed at them. Hume explains: "Hence arises that species of envy, which men feel, when they perceive their inferiors approaching or overtaking them in the pursuit of glory or happiness. In this envy we may see the effects of comparison twice repeated. A man, who compares himself to his inferior, receives a pleasure from the comparison: And when the inferiority decreases by the elevation of the inferior, what shou'd only have been a decrease of pleasure, becomes a real pain, by a new comparison with its preceding condition" (A Treatise of Human Nature, Part. II, Sect. VIII, p. 257). Hume relates envy with pain for the envier: the latter suffers from inferiority feelings generated by unflattering social comparisons. Hence the philosopher underlines the unpleasant experience of envious episodes affecting negatively individual self-esteem. Hume considers that envy stems from social comparisons damaging individual self-esteem.

Hume identifies a second condition to arise envy: proximity. Indeed, the distance between the subject and the rival (e.g. the subject-object gap) is important to generate envious feelings. In line with Aristotle, Hume assumes a linear and negative correlation between the intensity of envy and the subject-object distance. If the subject-object gap is too important, envy is less likely to appear or will not be intense. On the contrary when the subject object gap is low, then envy is highly present and very intense. We underline: "*tis not the great disproportion betwixt ourself and another, which produces it [envy]; but on the contrary, our proximity"* (A Treatise of Human Nature, Part. I, Sect. VIII, p. 257). He details: "*Envy arises from a superiority in others; but it is observable, that it is not the great disproportion between us, which excites that passion, but on the contrary, our proximity.*] A

great disproportion cuts off the relation of the ideas, and either keeps us from comparing ourselves with what is remote from us, or diminishes the effects of the comparison (...). All these differences, if they do not prevent, at least weaken the comparison, and consequently the passion" (Dissertation on the Passions, Sect. IV, p. 159). Hume supplies various examples to illustrate his claim: "A common soldier bears no such envy to his general as to his sergeant or corporal" (A Treatise of Human Nature, Part. I, Sect. VIII, p. 257).

Nevertheless inferiority and proximity are not sufficient conditions for envy to arise. Hume highlights another condition: similarity. Indeed in order to generate envious feelings, the subject and the rival must share similar characteristics. He writes: "Resemblance and proximity always produce a relation of ideas; and where you destroy these ties, however other accidents may bring two ideas together; as they have no bond or connecting quality to join them in the imagination; 'tis impossible they can remain long united, or have any considerable influence on each other" (A Treatise of Human Nature, Part. I, Sect. VIII, p. 257). Hence envy is prone to appear if both the subject and the rival share common characteristics: they have the same profession, they compete for the same prize... In absence of any similarity, social comparisons are less self-relevant, have less incidence on individual self-esteem and have less emotional impact. As a consequence they are less prone to generate emotions and envy. We quote: "(...) the proximity in the degree of merit is not alone sufficient to give rise to envy, but must be assisted by other relations. A poet is not apt to envy a philosopher, or a poet of a different kind, of a different nation, or of a different age. All these differences prevent or weaken the comparison, and consequently the passion" (A Treatise of Human Nature, Part. I, Sect. VIII, p. 257). The philosopher directly connects the relevance of social comparisons and emotional intensity. By highlighting the importance of similarity in the envy-process, Hume directly connects the relevance of social comparisons with emotional intensity. If social comparisons concern similar subjects then they are considered, from the subject's point of view, as relevant (i.e. the subject associates much importance to these social comparisons). If social comparisons are relevant then they can alter individual self-evaluation (if they are unflattering) and generate envy.

Concerning any action motivated by envy, Hume lacks clarity. Whereas the philosopher pictures envy as an unpleasant and painful experience, he does not precise whether the individual might be exerted to engage a specific action aiming at ceasing his pain. Besides he does not offer a clear conclusion on the nature of the action resulting from envious feelings. Nevertheless, it seems that Hume considers that envy does not include a negative action aiming at hurting the rival. According to the philosopher, the action induced by envious feelings might be considered as the key point to disentangle envy from malice (see below). Besides Hume does neither condemn envy nor praise envy. Concerning some points, the definition of envy supplied by Hume remains vague: the latter does not offer a distinction between envy and indignation nor between envy and emulation and does not precise whether envy includes a concern for equality.

Several notions are linked to envy. Hume connects envy with anger and malice when describing the circle of passions. The relation between envy and anger is somewhat complex. Anger is an emotion that can generate envious feelings. Nevertheless episodes of envy can induce anger. Hume writes: "Envy is naturally accompanied with anger or ill-will" (A Dissertation on the Passions, Sect. III, p.157). Conversely the relation between envy and malice is clearer: malice is triggered by envy. Hume, while describing part of the circle of passions, declares: "Grief and disappointment give rise to anger, anger to envy, envy to malice, and malice to grief again, till the whole circle be compleated" (A Treatise of Human Nature, Part. I, Sect. IV, p. 195). Hume very often associates envy with malice. In A Treatise of Human Nature, the latter devotes an entire section on defining and disentangling these two emotions (Book II, Part. II, Sect. VIII). On the one hand these emotions share similar characteristics: both emotions are social ones (i.e. generated by social comparisons) and are associated with pain. On the other hand, malice is associated with a desire to produce pain to the rival whereas envy does not involve such desire. Hence Hume disentangles these emotions by their origin. Malice arises from an enjoyment at seeing others suffering whereas envy is triggered by the displeasure at seeing others happy and successful. Hume argues that "The only difference betwixt these passions lies in this, that envy is excited by some present enjoyment of another, which by comparison diminishes our idea of our own: Whereas malice is the unprovok'd desire of producing evil to another, in order to reap a pleasure from the comparison" (A Treatise of Human Nature, Part. II, Sect. VIII, p. 256).

c. Aaron Ben Ze'ev (1949-)

In line with Aristotle and Hume, Ben Ze'ev places social comparisons at the core of envy. Without social comparisons no envy can arise. Ben Ze'ev pictures envy as an emotional reaction to any damage (potential or real) inflicted on individual self-evaluation. The philosopher highlights the pervasive character of comparisons and their importance in one's self-evaluation. He writes: *"People compare themselves with others in order to reduce uncertainty about themselves and maintain or enhance self-esteem"* (1992, p. 554). He follows with: *"An unfavorable comparison often leads to envy"* (1992, p. 554).

According to the philosopher, inferiority and desert are the two elements of central concern in the definition of envy. Indeed only social comparisons leading to a diagnostic of inferiority are prone to

trigger envy. Inferiority appears clearly from the definition offered by the philosopher. The latter sketches envy as a form of sadness triggered in situations in which one perceives his relative inferiority. He notes: *"envy may be characterized as a negative attitude toward another person's superiority and the desire to gain what this person possesses"* (1992, p. 552). Hence one envies those who enjoy some attribute one does not possess and whose possessions give them an advantage over the latter. The philosopher notes: *"The person we envy has personal attributes (such as beauty, patience, or intelligence), possessions (such as car) or positions (being the boss) that we lack but desire"* (2000, p. 282).

Ben Ze'ev underlines that envy arises in every unflattering social comparison that threatens one selfevaluation. This condition suggests that not every situation of inferiority is expected to trigger envy. We quote: "We compare ourselves with people whom we consider to occupy an approximately similar position or possess similar ability. We tend to exclude from our reference group people who appear definitely superior or inferior to us as well as those belonging to irrelevant domains" (1992, p. 559). Thus, for envy to arise, unflattering social comparisons have to gather two elements. First, the comparison has to be self-relevant, i.e. it must concern a good or a domain very important with selfaccomplishment and self-evaluation. Social comparisons can reveal one's relative inferiority but if the inferiority concerns an attribute that has no importance to our eyes then envy is very unlikely to appear (see below). Ben Ze'ev insists on the self-relevance of the desired attribute: "(...)when the good fortune is relevant, our self-esteem and the evaluation of ourselves by others is threatened and envy arises" (2000, p. 286). The self-relevance condition implies that one compares his situation to the one of similar subjects (e.g. similar characteristics, aspirations and status). The philosopher also underlines that inferiority is partial rather than general, i.e. it concerns a sole attribute or trait. He writes: "We may envy only one aspect of another person, yet continue to consider ourselves superior in general" (2000, p. 286). Secondly, Ben Ze'ev insists on the importance of similarity and proximity: social comparisons have to concern similar and not too distant subjects. Ben Ze'ev develops: "envy seems to be directed at those who are like us or equal to us but are still slightly superior to us" (1992, p. 556). The philosopher details: "Envy implies a particular situation worse than that of someone else of importance to us." (1992, p. 559). By these lines, Ben Ze'ev suggests that envy may be directed upward (inferiors envy superiors) or downward (superiors envy inferiors for their specific and relative inferiority and might consider themselves as inferiors concerning a specific area).⁵ The latter emphasizes the importance of proximity by introducing the notion of "neighbourhood envy". This concept implies that one envies those whose position in just above one's position. We quote: "In

⁵ The proximity and self-relevance conditions also help in disentangling envy from admiration. According to Ben Ze'ev, admiration appears when one observes the good fortunes of individuals far from one or enjoying an advantage concerning an attribute not self-relevant.

envy, our attention is focused on those perceived to be immediately above us" (1992, p. 556). To illustrate the importance of proximity in generating envy, the philosopher refers to the notion of *"sense of alteration"*. This concept captures the reality of every change perceived by the subject and explains why social emotions are always more intense when differences between the subject and the rival are slight. When differences are low, the subject will immediately notice every change in the rival's situation. Besides the subject will attach much importance to these slight changes because they can alter, even dramatically, the subject's position (i.e. the subject can even pass to a different status: from superior to inferior). Under those circumstances, the sense of alteration is high. On the other hand, when differences are loght to have a slight emotional impact. The sense of alteration is thus low. Ben Ze'ev itemizes: *"The stronger, or the more real the change, the more intense the emotion"* (1992, p. 565). This notion explains why envy requires proximity and is more intense in small gaps (see below).

In line with Aristotle, Ben Ze'ev points out the omnipresence of envy in competition. He states that competition is an environment in which all ingredients required to arise envy are gathered: similarity between competitors, proximity, self-relevance of the desired attribute (e.g. object of competition), one good whose access is limited and whose property is exclusive and thus confers an advantage to who possess it.

As mentioned previously, the second key element in the definition of envy is desert. In line with Aristotle and Hume, Ben Ze'ev refers to the notion of desert in order to disentangle envy from indignation. Both include sadness and pain at the sight of others' advantage except that indignation is socially accepted and considered as a legitimized attitude whereas envy is socially condemned and highly refrained. Relying on Ben Ze'ev' lines, indignation concerns undeserved situations of inferiority whereas envy appears in deserved situations of inferiority. The philosopher defines indignation as an "emotional protest against what is perceived as morally unjust" (1992, p.553). Whereas enviers might claim that their situation is undeserved, this claim remains not justified and is a rational attempt to justify their envy. We underline: "Envy involves the subject's relative inferiority and the belief that this deprivation is undeserved" (1992, p. 564). Conversely to previous quoted philosophers, Ben Ze'ev goes beyond in disentangling envy from indignation. He explains that referring to the concept of desert is not a sufficient condition to disentangle envy from resentment. Ben Ze'ev distinguishes desert claims from moral claims. He writes: "Whereas desert claims are based on the value of a person's attributes and actions, moral claims often refer to obligations toward other persons" (1992, p. 561). He follows with: "desert claims [...]are often based on one's personal desires" (1992, p. 561). From the philosopher's perspective, desert claims refer to perceived (or subjective) undeserved situations. Hence someone might considered his situation as undeserved because the latter believes his situation to be unfair although his situation is not the result of some agent's deliberate choices or criminal behaviour. On the other hand, moral claims are directed to the action or behaviour of some agent (person or creature). Ben Ze'ev writes: "[...]in moral claims the agent is a person having some responsibility" (1992, p. 561). He develops: "The desert claims typical of envy are personal and only rarely can be satisfied by moral action. Such claims are not considered as serious moral claims" (1992, p. 562). To illustrate the difference between desert claims and moral claims, let consider two women, Jill and Jane, comparing the beauty of each other. They lead to an inevitable conclusion: Jane is more beautiful than Jill. Although beauty is one of the greatest attribute subject to envy, if we refer to the concept of desert to disentangle envy from resentment we cannot say that Jill might envy Jane for her beauty but rather that Jill experience indignation at being less beautiful than Jane. Furthermore, no one can be held responsible for Jill being less beautiful than Jane then the situation is undeserved. By using the distinction between desert claims and moral claims, Jill may envy Jane for her beauty because Jill's envy involves a desert claim (she personally might believe her situation as unjust) but not a serious moral claim (no one is to blame for her inferior beauty). The philosopher concludes by: "Envy is often based on personal, non-moral norms of desert, whereas resentment is usually based on societal moral norms of justice" (1992, p. 562).⁶ He adds: "Envy occurs when the wrongness is related to our inferior situation; resentment occurs when wrongdoing is perceived: it conveys an implicit accusation" (2000, p. 285).

In opposition to Aristotle and Hume, Ben Ze'ev does not assume a linear and negative correlation between the intensity of envy and social distance. He rather refers to the notion of reference group and differentiates two sorts of inequalities: intragroup and intergroup inequalities. Intragroup inequalities refer to inequalities that are important for one's self-evaluation (i.e. between similar subjects and concerning self-important attributes). Conversely intergroup inequalities concern inequalities between subjects that are not important for the subject's self-evaluation (i.e. outside the reference group). Whereas Ben Ze'ev assumes that the correlation between social distance and the intensity of envy is positive concerning intragroup inequalities, he assumes a negative correlation about intergroup inequalities.⁷ In other words, one envies more intensively the person occupying the top position of his reference group than the person just above him. Nevertheless outside the reference group, one envies more intensively those who are close to them than those who are far from them. We underline: "If we take the gap and relevancy as constant, we should expect a more or less positive correlation between similarity and the intensity of envy. A more complex correlation is

⁶ Ben Ze'ev associates indignation and resentment and uses these terms interchangeably.

⁷ By social distance, we refer to the distance between the subject's situation and his rival's one.

that between the intensity of envy and the subject-object gap (given that relevancy and similarity are significant and constant). Without drawing the precise lines of this correlation, I may say that the curve depicting it is somewhat similar to a bellshaped curve. Up to a certain width, envy is quite low. From this point the gap begins to be large enough to generate significant emotional impact. Immediately beyond this point there is a sharp increase in the intensity of envy. There is also a point of maximal envy after which a widening of the gap will reduce envy. The existence of such a point is illustrated by the fact that we are less envious of an increase in the income of rich people than of a corresponding increase in the income of people who are richer than us but poorer than the rich man. In very great gaps an additional increase will not affect the intensity of the subject's envy. In any case, for most people some level of envy still exists on any positive level of the gap" (1992, p. 573).

As presented above, Ben Ze'ev defines envy as a unpleasant form of desire for obtaining some desired attribute others enjoy. This desire may induce the subject to make an action so as to leave his inferior situation. In opposition with Aristotle, Ben Ze'ev does not reduce envy to an emotion leading exclusively into destructive actions. We underline: "We should not reduce envy to hostility, however, or vice versa. Envious people dislike their inferior position; they do not necessarily feel hostility or dislike toward the envied person" (1992, p. 574). The philosopher claims that, in order to get out from his inferior situation, the subject motivated by envy faces two alternatives. On the one hand, the subject might be pushed to improve his own position by obtaining the desired attribute. In that case, envy would serve as motivating force aiming at increasing the subject's situation by making additional and constructive efforts. On the other hand, the subject might be exerted to reduce the rival's position by removing the desired attribute from the rival's hands. In that configuration, envy would be translated into a hostile and destructive force. Ben Ze'ev considers the destructive action resulting from envious feelings as the ugliest form of envy. Ben Ze'ev writes: "It [envy] entails the desire to improve the subject's personal lot, not concern for other people. (...). Furthermore, sometimes the envious person wishes to deprive the object of her greater benefits, even if this means depriving oneself of some benefits as well" (1992, p. 553). By considering a positive action, Ben Ze'ev suggests that envy might involve a desire not only to improve one's position but also to overpass the rival.⁸ Ben Ze'ev does not explain why and how envy can change from its emulative form to its destructive aspect.

Ben Ze'ev offers a clear distinction between envy, covetousness and discontent. Covetousness, even if it includes a desire for some possession of others, is not characterized by situations of inferiority. It

⁸ Ben Ze'ev refers to works of Bacon (1601) and Montaldi (1999).

can appear even if one enjoys a superior position.⁹ Discontent is related to a situation one achieves, judges as wrong and believes that a better alternative exists. The philosopher writes: "Unlike covetousness and discontent, which are merely concerned with gaining something or achieving a certain state, envy is mainly concerned with someone else who has something or is in a certain state" (1992, p. 555).

Finally, Ben Ze'ev discusses an important issue: whether envy includes or not a concern for equality. Following the philosopher, envy does not involve any concern for equality. Indeed the envier, by improving his position or by decreasing the rival's one, is not willing to establish a situation of equality but rather to establish a situation of non-inferiority. The envier focuses on his relative situation, i.e. on his relative inferiority rather than on equality. Indeed its focus is relative rather than general: one does not aim at being superior in all domains but in some specific and restricted attributes or traits. The philosopher precises that: "it [envy] entails the desire to improve our personal lot, not the desire to improve the well-being of other people" (2000, p. 283). To strengthen his thought, Ben Ze'ev notes: "The central concern in envy is different from the egalitarian moral concern that calls for the reduction or even elimination of different inequalities" (1992, p. 575). To support his claim, the philosopher explains that if envy involved some concern for equality then envy would not appear concerning goods for which equality is unrealizable (beauty, sexual success...). Besides we observe very intense envy for these goods. Ben Ze'ev concludes by claiming that: "envy is not a moral emotion. Envy differs from the egalitarian moral concern in at least two major ways. First, it involves a partial rather than a general concern: the envious person is not concerned with equality as a general value; the claim to equality is merely a desire to improve the subject's personal situation and thus does not appear when inequality favors the subject. Second, envy also surfaces in cases where the demand for equality is unrealizable and has nothing to do with egalitarian moral principles» (1992, p. 575).

d. Partial conclusion

Through this section, we detail how different philosophers describe the emotion of envy. After these descriptions, a consensus obviously emerges on the source of envy: envy stems from unfavourable social comparisons. Social comparisons are pictured as deeply rooted in human nature and thus almost impossible to cope with. All quoted authors define envy using the concept of inferiority. Besides all of them precise that envy concerns partial (or relative) inferiority rather than general inferiority (see below). Philosophers also emphasize on the necessity to involve similar and not too

⁹ One may already possess several prestigious cars but may covet the new convertible bought by his neighbour.

distant subjects in order to generate envy and add that inferiority must concern a self-relevant attribute. Concerning the distance between the subject and the rival and the intensity of envy, Aristotle and Hume assume a negative correlation (i.e. the higher the inequality the more intense envy is expected to arise) whereas Ben Ze'ev offers more precision. The latter refers to the concept of the reference group and distinguishes intragroup inequalities from intergroup inequalities. Ben Ze'ev considers that the relation between the intensity of envy and the subject-object distance is positive concerning intragroup inequalities and negative concerning intergroup inequalities. In other words, Ben Ze'ev assumes that the higher the intragroup inequality is, the more intense envy is expected to be experienced. Conversely, he presupposes that the higher the intergroup inequality is, the less intense envy is expected to appear. Then all quoted philosophers sketch envy insisting on its unpleasant and often painful experience. Philosophers refer to the notions of pain and sadness when picturing the emotion. They all consider envy as a form of sadness when one becomes aware or learns his relative inferiority. Finally, philosophers state that envy is free of consideration for equality. More precisely envy does not aim at establishing a situation of equality but rather a situation of non-inferiority which remains fundamentally different. The emotion pictured by philosophers indicates that envy implies a partial rather than a general consideration for equality: envy is ought to be reduced only when the rival loses his advantage and hence his relative superiority. As a consequence the envier demands equality in order not to be overshadowed by his rival's situation. Besides the person suffering from envy is likely to prefer a situation in which neither him nor the rival enjoy the desired attribute to a situation in which both the subject and the rival possess it. Hence it seems obvious that envy does not exert the subject to engage in a quest for equality but rather to put a stop to one's inferiority. Furthermore the envier's demand for equality might be considered as a deliberate attempt to legitimize an inappropriate attitude and a socially condemned emotion. Would envy be removed of the subject obtains what the rival's possesses? No albeit the subject now receives what he lacked, he still suffer from the rival's advantage. Imagine that Jill envies Jane for her new convertible. Even if Jill buys a similar convertible, her envy would not disappear since Jane still overshadows Jill: Jane was the first in having a convertible!

Nevertheless some aspects of envy divide the philosophers. Not all distinguish envy from indignation. Whereas Aristotle and Ben Ze'ev disentangle envy from indignation by referring to the concept of desert, Hume does not make such a distinction. Besides, by disentangling moral claims from desert claims, Ben Ze'ev offers more precision concerning the differentiation between envy and indignation. Desert claims refer to subjective (or perceived) injustices whereas moral claims refer to injustices resulting from others' decisions. Conversely to indignation (or resentment), envy involves desert claims but not moral claims. The most surprising point concerns the nature of the action resulting

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from envy. Aristotle considers envy as leading to a resolutely hostile behaviour, Hume does not state about this point and Ben Ze'ev argues that envy can either embody an emulative or a destructive aspect.

To summarize, envy, from a philosophical perspective, can be sketched as a social emotion triggered by unflattering social comparisons, resulting in a painful sadness at the sight of others' relative advantage(s) and discharged of any equality concerns. Nevertheless, as pointed with quoted authors, some antagonisms are to deplore concerning specific issues: referring to the concept of desert so as to disentangle envy from indignation and the action tendency resulting from envy.

First, the differentiation between envy and indignation lacks precision. Imagine the following situation. Jill and Jane are both participating in a beauty contest. Both aim at winning the contest (i.e. winning the contest is self-relevant for both Jill and Jane). Unfortunately Jill is informed that Jane wins the contest at the expense of Jill. Jill is distressed. At the same time, Jill learns that Jane was having an affair with the President of the jury. The problem is now the following: is Jill experiencing envy or indignation? According to Ben Ze'ev, Jill has a moral complaint: she loosed because Jane conspired in order to win and Jill holds Jane for being responsible of her failure. Then only indignation (or resentment) can appear. Although Jane was having an affair with the President of the jury, it might not have an incidence on the issue of the beauty contest (or this information can even be false). So the moral complaint is subjective rather than objective, and thus Jill might rather be envious than indignant. La Caze (2001, 2002) is very sceptical concerning the connection between envy and desert. La Caze argues that referring to the notion of desert so as to disentangle envy from indignation (and resentment) is too flexible and might lead to wrong interpretations. On the one hand, she claims that envy can be experienced toward persons one judges they do not deserve their situation. This is particularly the case when envy concerns goods such as beauty, luck or intelligence. She writes: "Envy may be based on the judgement that others are unworthy of the success or benefits they have gained" (2001, p. 32). On the other hand, she underlines that envy can also be directed toward persons that deserve their situation. We quote: "We might also feel envious even when the success is deserved" (2001, p. 32). La Caze offers to disentangle envy from resentment (and indignation) by specifying the focus of one's distress. She defines envy as an emotion arising from the awareness of others' advantages. She precises : "The person who is envious feels uncomfortable in some way in the judgements that others are better off than they" (2001, p. 32). She follows with: "Envy is a complex of feelings involving the recognition that others have, through luck or either deserved or undeserved means, received goods or had successes which are considered desirable" (2001, p. 32). As a consequence, according to La Caze, envy is focused on the rival's situation, or in a broader sense, "focused on a possession or situation which is perceived as desirable" (2001, p. 32). Conversely, La Caze precises that indignation (and resentment) are related with wrongdoing. She details: "Indignation (...) is focused only on the wrongness or undesirability of a state of affairs" (2001, p. 32) and "resentment concerns things considered to be wrongs which have been done, or are perceived as having been done, to us and others" (p. 32). Then indignation and resentment have a different focus when comparing to envy: they focus on how the rival obtains his situation and attribute. To conclude, if what bothers the subject is his relative situation (i.e. his inferiority relative to his rival) without any reference to whether the situation is wrong or not then envy appears. On the opposite, if what bothers the subject is how the rival obtained the situation or the good then indignation (or resentment) are likely to appear rather than envy. If we consider the previous example, then Jill envies Jane because Jill's distress arises from Jill's relative inferiority (i.e. Jill looses the contest). But if Jill's distress arises from learning how Jane succeeds in winning the contest, then indignation is more likely to arise rather than envy.

Then the behaviour resulting from envious feelings seems to be the object of controversy. On the one hand, some philosophers describe envy as a constructive emotion and underline its emulative aspect. On the other hand, several philosophers picture envy as a destructive emotion insisting on its ugly side (D'Arms, 2002; D'Arms and Kerr, 2008; Kant, 1986; Thomas Aquinas, 1981). Nevertheless Aristotle points out an important aspect in the envy process: the perceived possibility for the subject to attain the desired attribute or not. Aristotle states that if the subject perceives the desired attribute to be under his range then emulation is more likely to arise whereas if he believes the desired attribute to be out of his range then envy is more likely to arise. In other words, if a subject faces an unfavourable social comparison, Aristotle assumes that when the desired attribute seems, from the subject's perspective, attainable then the subject might be more prone to engage in constructive actions rather than in destructive ones. Conversely, when the desired attribute seems, from the subject's perspective, unattainable then the subject is more likely to behave negatively and to damage the rival's situation.

3. The Psychology of envy.

After providing a philosophical definition of envy, we aim, through this section, at sketching the emotion from a qualitative perspective. To fulfil that purpose, we refer on psychological researches made on envy and focus on how envy is experienced from the envier's perspective so as to identify the affective components included in any episode of envy. We also refer to psychologists studies on envy to find an answer whether the emotion induces the subject to undertake constructive or

destructive actions. The key point in the psychological researches made on envy is the experimental approach used to study that emotion. Psychologists are among the first to use investigative methods, i.e. to adapt and implement experimental procedures in order to investigate the psychological nature and foundations of envy.

This section is organized as follows. In a first sub-section, we detail how psychologists define envy. Then we focus on studies trying to label qualitatively envy. Through a third sub-section, we report how psychologists consider the nature of envy and investigate the relation between hostility and envy. Again, we will close this section with a partial conclusion.

a. The psychological definition of envy

Envy has received much attention from psychologists: the emotion appears to be involved in most aggressive behaviours (Schoeck, 1969) and observed conflicts (Glick, 2002). Despite the importance of the emotion and its invasiveness on human behaviour, psychological researches on envy began lately and is on its early stages. The first review of the psychological literature on envy is recent (Smith and Kim, 2007) and the interest concerning this emotion is increasing as suggested by the recent publication of a book entirely devoted to the emotion (*Envy: Theory and Research* edited by R. Smith in 2009).

In line with philosophers, psychologists associate the origin of envy in social comparisons and more precisely in unfavourable ones. Farber (1966) defines envy as arising "(...) from a person's apprehension of another's superiority and his consequent critical evaluation of himself "(p. 239). Smith and Kim (2007) share the same view about envy, they write: "Envy, the unpleasant emotion that can arise when we compare unfavourably with others" (p. 46). Social comparisons have a major influence on individuals and a key role in self-evaluation and self-esteem (Festinger, 1954; Heider, 1958; Lockwood and Kunda, 1997; Testa and Major, 1990).¹⁰ Social comparisons contribute to ability assessments by allowing individuals to derive a diagnostic and to obtain information about their relative performance and about the ingredients needed to improve one's performance. But not every social comparison affects one's self-evaluation and self-esteem. As it is impossible for an ordinary agent to be the best in all domains, one compares with others not in general aspects but in specific aspects or attributes: we define self-relevant domains or attributes. Only social comparisons that concern important attributes (from the subject's perspective) are ought to enhance or to damage

¹⁰ Self-evaluation is deeply connected to self-esteem since it is held responsible for determining self-esteem (Collins, 1996; Festinger, 1954; Heider, 1958).

one's self-evaluation. Envy stems from unflattering social comparisons that damage one's selfevaluation. As envy affects negatively one's self-evaluation, it also damages one's self-esteem.

Psychologists also emphasize on the importance of similarity, proximity and self-relevance in the envy process. Smith and Kim (2007) write: "we envy similar others who otherwise enjoy an advantage in an area linked to our self-worth" (p. 50). Envy appears when social comparisons involve similar subjects, i.e. persons occupying similar positions, characteristics and aspirations (Festinger, 1954; Salovey and Rodin, 1984; Schaubroeck and Lam, 2004). Despite the great number of social comparisons made by individuals, a few number are of interest to one's eyes. Indeed only comparisons with similar individuals will affect (whether positively or negatively) one's selfevaluation and self-esteem and thus can lead to envious feelings. Festinger (1954) precises that: "(...) given a range of possible persons for comparison, someone close to one's own ability or opinion will be chosen for comparison" (p. 121). Smith and Kim (2007) specify that only comparisons "with people who share comparison-related attributes, such as gender, age, and social class" (p. 50) are prone to generate envy. Comparing oneself with individuals far from corresponding to one's situation will not be considered as relevant and, as a consequence, will not affect one's self-evaluation and will not generate envy. Psychologists offer two explanations for requiring proximity to generate envy. First, comparing oneself with similar individuals reduces the number of relevant comparisons but keeps offering a great number of opportunities for social comparisons. Second, the condition of social proximity allows subjects to derive a diagnostic from social comparisons. An ordinary agent would not be able to identify the elements he lacks in order to succeed when comparing to Bill Gates who possesses everything the agent lacks. Thus social proximity would enable us to make a sort of interesting social comparisons in order to understand why we perform so poorly and in order to obtain precious information about what is required to perform better. To summarize, social proximity helps social comparisons in building inferences about one self (Festinger, 1954) and allows social comparisons to contribute to ability assessments (Collins, 1996; Lockwood and Kunda, 1997). Finally, the object of comparison (i.e. desired attribute) has to be self-relevant, i.e. to embody a specific importance to one's eyes. It must concern a domain very important with selfaccomplishment and self-evaluation (Festinger, 1954; Ortony et al., 1988; Salovey and Rodin, 1984). If the desired attribute concerns a domain that does not embody a great importance to our eyes then admiration is more likely to arise rather than envy.¹¹ Giving the omnipresence of social comparisons,

¹¹ Imagine the following situation: whereas Bob finished second last year, this year he aims at winning the 100meter-dash organized by his school. He may envy John who won the 100-meter-dash last year and still participate but he admires rather than envy Usain Bolt the Olympic winner. Usain Bolt and Bob do not share similarities and do not compete in the same category that render social comparisons between Bob and Usain Bolt not self-relevant. Then this comparison is not ought to damage Bob's self-esteem.

one aims at providing a positive image of oneself. To fulfil that objective one needs to perform well and, sometimes, even perform better than others. Nevertheless it is impossible for some agent to be the best in all domains. Thus individuals personally define domains of self-relevance and implement efforts (whether constructive or destructive) to outperform others in those restricted and very specific domains.

The importance of similarity and self-relevance in the envy process can be perfectly illustrated by the study by Schaubroeck and Lam (2004). The authors study how bank tellers, expecting for a job promotion, perceive their co-workers. The authors ask them to answer to a questionnaire aiming at evaluating the perceived similarity of subjects, the expected promotions, subjects' job performance...¹² The authors observe that female bank employees envy intensively the person they perceive to be very similar to themselves, i.e. having the same job aspiration and, occupying a relatively similar job position.¹³ Besides and as mentioned previously, for envy to arise, social comparisons must concern self-relevant attributes, i.e. goods or domains that embody some personal importance to the envier's eyes (Schaubroeck and Lam, 2004; Silver and Sabini, 1978). Again Schaubroeck and Lam (2004) indicate that female bank employees experience envy toward their female colleagues because they consider that their situation and job aspiration are identical and they attach much importance to these elements. More recently Hill and Buss (2006) also emphasize the importance of similarity and self-relevance in envy. Participants are asked to describe 7 personal situations in which they experience envy toward another person. Participants must specify the nature of the rival (e.g. coworker, neighbour, romantic partner, friend...) and also the nature of the desired attribute. Hill and Buss (2006) observe that both men and women indicate that they envy most often persons with whom they are similar and in direct competition for resources. Indeed more than half of men and women reveal that most episodes of envy are directed toward same-sexed friends. The authors also investigate which attributes are self-relevant and whether there are gender differences. Hill and Buss (2006) give to subjects a list including four items : sexual experience, rival's attractiveness, romantic partner's attractiveness and gifts received from one's romantic partner. The authors ask subjects to rank all items in order to indicate to what degree each item would cause them envy using likert scales ranging from 1 (item that causes the most envy) to 19 (item that causes the least envy). Concerning differences between men and women, the authors observe that the object of envious feelings concerns different attributes. Men's envy is more directed at sexual experience than women (i.e. men dislike having an inferior sexual experience than other men) and

¹² See also Fox et al. (1989).

¹³ They capture employees' envy by using the Dispositional Envy Scale (DES) elaborated by Smith et al. (1999). Further explanations of this device are provided below.

that women are more concerned by the physical attractiveness of their potential rivals (i.e. women dislike being less beautiful than their same-sexed friends).¹⁴

b. The affective components of envy

When referring to envy, scholars (whether psychologists or not) typically claim that envy is an unpleasant emotion. To express this unpleasant aspect of envy, psychologists usually label envy with terms such as discontent, ill-will, longing and sense of inferiority (Farber, 1966; Foster, 1972; Salovey and Rodin, 1984; Silver and Sabini, 1978). There are few experiments aiming at picturing envy from a qualitative perspective.

Among the first qualitative picture of envy, we can quote the study by Smith et al. (1988) that tries to shed light on the existence of a linguistic confusion between envy and jealousy. Smith et al. (1988) ask subjects to distinguish the affective components of an episode of envy from those characteristics of jealousy.¹⁵ The authors ask subjects to describe a situation in which they personally felt strong envy.¹⁶ Then they receive a list of affective states (e.g. suspiciousness, spite, sadness...) and have to indicate for each feeling whether the feeling is characteristic of an episode of strong envy or strong jealousy. Smith et al. (1988) convey a linguistic confusion between envy and jealousy: people use these terms as if they were interchangeable. The authors explain that confusion by the broader sense of the term jealousy: when subjects are asked to report first an episode of jealousy and then of envy, they confound more often these emotional episodes (i.e. subjects' description of envious situations fits less with the definition of envy adopted by the authors). Besides subjects report that envious

¹⁴ Hill and Buss (2006) refer to evolutionary psychology so as to explain their results. They consider that *"individuals continually struggle to acquire fitness-relevant resources or positions that others are simultaneously attempting to acquire"* (2008, p. 60). Women aim at securing a partner who possess the capacities to invest in themselves and in their offspring. Then women compete more on their potential mate and give much importance to physical attractiveness. Men aim at obtaining benefits from their mate choices. They compete in sexual access to young, healthy and fertile women.

¹⁵ In this paper we do not aim at differentiating envy from jealousy (see Salovey and Rodin, 1984; Silver and Sabini, 1978; Smith et al., 1988). Whereas envy is a dyadic emotion, jealousy involves three parties: the jealous (i.e. the subject), the jealous' target (i.e. the rival) and the object of jealousy (i.e. the beloved). In jealousy, the subject believes that the beloved is at his own disposal or that he maintains a relationship (whether real or virtual) with the latter. The subject perceives a threat to his relationship with the beloved and is frightened by loosing this valorised relationship to the rival. Jealousy is focused on the fear to lose a valorised relationship to the rival whereas envy focuses on the rival's situation that possesses an attribute the subject lacks.

¹⁶ The authors implement different conditions in order to fulfil their objective. In one condition, subjects are asked to describe first a situation of strong envy and then of strong jealousy. In the other condition, subjects make the opposite procedure (first jealousy then envy). As we want to isolate the affective components of envious episodes, we focus on the results they obtain about envy. Note that authors restrain their analyses to episodes of envy reported by subjects that conforms with the definition of envy given by the *Oxford English Dictionnary* (i.e. *feelings of discontent and/or ill-will that arise when personal qualities, possessions, or achievements do not measure up to those of another*).

episodes are characterized by feelings of inferiority, a motivation to improve, longing for what another possesses, wishfulness, self-criticism, dissatisfaction and self-awareness. Some items were considered, from subjects' point of view, as relevant to both envy and jealousy: sadness, frustration, unlucky and helplessness.

Parrott and Smith (1993) use a similar experiment in order to disentangle the intensity and the nature of the affective components between the emotions of envy and jealousy. The authors believe that the greater intensity of jealousy can mask any qualitative difference between the emotions of envy and jealousy. Their experiment consists in two distinct parts. First they ask subjects to relate a situation in which they experience either strong envy or jealousy and to rate different items on likert scales. Items are about affective states related to these emotional episodes (e.g. suspiciousness, illwill...). When observing the relative salience of distinct affective states, the authors observe that jealousy is experienced more intensively than envy in almost all affective elements. Through a second analysis with adjusted scores, the authors note that jealousy and envy are qualitatively different: some affective states are more salient in envy than in jealousy.¹⁷ Indeed envy is characterized by disapproval, longing for what another possesses, a motivation to improve and degradation. In the second part of the experiment, the authors ask subjects to rate stories independently. Two sets of stories are implemented. The stories place two characters in interaction: the protagonist and the rival. By changing the success and the characteristics of both the protagonist and the rival, the authors can create a situation in which either envy or jealousy is prone to arise. Envy is created when the rival succeeds whereas the protagonist fails or do not reach the same success as the rival. After reading the stories, subjects have to rate different affective states items using likert scales in order to indicate how they believe the protagonist would feel at the end of the story. Parrott and Smith (1993) observe that three items are significantly related to envy: inferiority, resentment and longing for what another possesses.

These studies convey that envy is a complex emotion. Conversely to "primary" emotions (e.g. emotions universally recognizable such as sadness, joy, disgust, anger, fear, surprise and pride), envy is difficult to recognize and analyze. An episode characteristic of envy can be sketched as a mixture of different affective elements such as inferiority, longing for what others possess and a subjective sense of injustice. All these elements signal the existence of a depressive dimension in envy (e.g. inferiority, longing, resentment...). Note that not every episode of envy requires to gather all these elements that confers to envy a protean character (Farber, 1966). The protean character of envy is

¹⁷ The second analysis used the ratings participants made but the ratings were adjusted for betweenparticipant differences in elevation and scatter.

strengthened by the fact that the action resulting from envious feelings (or the hostility included in envy) can be expressed through a variety of forms (see the next section).

c. Envy and hostility

Envy is often considered as an emotion imbued with hostility: the emotion is often held responsible for leading to violent acts and aggressions. Schoeck (1969) provides various examples of violent crimes motivated by envy toward the beauty or physical aptitudes of someone. The violent mugger of Rose Watterson by her former roommate, Patricia Dennis, perfectly illustrates the hostile impulse of envy. The murderer, after being arrested, immediately confessed to be envious of her former roommate. Patricia Dennis was so envious of Rose's beauty that she attacked the latter by using a hatchet. Rose was severely injured and remained disfigured. Glick (2002) outlines the role of envy in the anti-Semitism wave exhibited in Nazi Germany. As them, many psychologists study the hostile aspect included in envy.

Silver and Sabini (1978) aim at evaluating the perception of envy by individuals and implement an experiment based on videotapes. In their experiment subjects are asked to watch a videotape about an interaction between two students. One of these students (the rival) just learns that he was accepted to a prestigious school whereas the other student (the protagonist representing the envious) reacts to this news. The latter reactions differ from treatments. Silver and Sabini (1978) implement different treatments in order to investigate if the definition of envy relies on different contexts such as the relation between the protagonist and the rival (i.e. friends or stranger), the reaction of the protagonist (i.e. praises or teases), the difference of success between the envious student and the rival... Hence in one version of the videotape, the protagonist is accepted to a lower prestigious school, in another version in a equally prestigious school and in one version the envious student reacted in a arrogant way exhibiting hostility toward the rival... Subjects are asked to watch only one version of the videotape and after viewing it they have to report if the envious student exhibited envy or not toward the rival. Silver and Sabini (1978) observe that when the envious student reacts by exhibiting some hostility toward the good news of the rival, the majority of subjects (58,6%) reports that the envious student is experiencing envy toward the rival. Hence the authors conclude that most people consider envy as a hostile attitude in front of one's success.

More recently, Parrott and Rodriguez Mosquera (2008) report similar results. The authors distribute a questionnaire to samples of college students (in US, Netherlands and Spain). The questionnaire invites subjects to recall and report personal experiences in which they personally felt they were (or they believed to be) the target of other's envy. After reporting such experiences they have to give additional details (about what they were envied, how the enviers behave...). A striking result is that most stories about being envied reveal that the envier exhibited some hostility toward the envied. The majority of subjects reports to be envied through a hostile form. The hostility of the envier is reported through a variety of form (e.g. from nasty looks and sarcastic comments to physical aggression).

Why envy includes such hostility? Beck (1999) considers that hostility is a common and natural answer when someone is placed in a situation of inferiority. Indeed unfavourable social comparisons are considered as a threat to one self-image and self-evaluation. When observing one's own inferiority, negative feelings are expected to arise such as depression, lack of self-confidence, low self-esteem. All these elements might damage one's self-evaluation and are likely to generate hostile reactions. In that case hostile reactions are considered as a form of protection against a threat. If one is caught in a situation revealing his own inferiority he is likely to exhibit aggressive and violent behaviour (Schoeck, 1969). Those negative comparisons are expected to trigger negative feelings like frustration, inferiority and even anger. Moreover these negative feelings are prone to exert aggressive behaviour (Berkowitz, 1989; 1990). Smith and Kim (2007) offer three explanations to the hostile attitude included in envy. The hostility can be explained by feelings of frustration (generated by the inferior situation), shame (triggered by the experience of feelings socially condemned) and can represent an adaptative reaction to increase one's situation (e.g. hostility may be considered as reinforcing the inducement to put an end to one's inferiority). Besides several studies indicate that frustration states can drive to hostile behaviours and actions (Berkowitz, 1989, 1990; Rule et al., 1978; Kulik and Brown, 1979).

Is envy always hostile? Although envy is considered by individuals as hostile, psychologists point out that some episodes of envy include hostility whereas others no. Psychologists did not reach an agreement on the nature of envy. In order to explain why envy sometimes includes a negative action and sometimes not, psychologists made a distinction between "*envy proper*" ("*invidious envy*" or "*invidentia*") and "*benign envy*" ("*admiring envy*"). Whereas the former form of envy involves a desire that the rival loses the desired attribute the latter form of envy does not. Smith and Kim (2007) add about "benign envy" that: "benign envy is envy sanitized (...) and lacks a core ingredient of the emotion, namely some form of ill-will" (p. 47).

Psychologists are interested in understanding why some envious feelings induce the subject to undertake negative actions whereas others no. They identify two key elements that could turn envy into a hostile attitude: perceived injustice and perceived control.

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Perceived injustice (or subjective injustice) can explain why some envious episodes are characterized by hostility whereas others no. Smith et al. (1994) investigate whether inferiority or subjective injustice could drive to hostility. More precisely the authors try to disentangle the impact of inferiority and subjective sense of injustice on subjects' reactions.¹⁸ They ask subjects to relate a personal situation in which they experience intense envy. Then subjects are invited to rate several distinct items that focus on the conditions that might generate their envy, on affective states they experienced and on reactions toward the envied. Smith et al. (1994) observe that feelings of inferiority (without subjective feelings whether the inferiority is deserved or not) induce the subject to focus on his own inferiority. As a consequence feelings of inferiority drive to depressive feelings rather than to hostility. On the other hand, if the subject is placed in a situation of inferiority and if he believes that the rival's advantage is undeserved then the subject is likely to experience depressive feelings and to exhibit hostility toward the rival.¹⁹ With regard to their results, Smith et al. (1994) conclude that envy is a mixture of both depressive and hostile feelings.

Another key point concerning the connection between envy and hostility relies on the perceived possibility or not for the subject to obtain the desired attribute. According to scholars (Cohen-Charash et al, 2008; Lockwood and Kunda, 1997; Major et al., 1991; Testa and Major, 1990; Vecchio, 1995; van Yperen et al., 2006) it sounds like "envy proper" is likely to appear in situations in which the subject has no control over the desired attribute, i.e. the desired attribute is out of range the subject's possibility. On the opposite, when the desired attribute is likely to be obtained by the subject then "benign envy" or emulation are prone to arise. The notion of "perceived control" captures the perceived possibility for the subject to obtain or not the desired attribute. The perceived control is determined by the subject's expectations regarding the stability of the situation and by the expectations of the subject regarding his ability(ies) to change the situation. Different theories and psychological models are based on the notion of perceived control so as to predict the action and affective states resulting from envious episodes (Major et al, 1991; Cohen-Charash et al., 2008). When a situation is perceived as changeable and when the subject believes he possesses the abilities required to change the situation then the perceived control is high and the action resulting from envious feelings is ought to be constructive. On the other hand when the subject perceives the situation as unlikely to change and possesses pessimistic beliefs about his capacity to change the situation then the perceived control is low. In that case, the subject consumed by envy is likely to engage in destructive behaviour (i.e. harming the other, sabotage...). We can also point out another

¹⁸ In their study, only two aspects of subjects' reactions are investigated: depression and hostility.

¹⁹ The authors refer to the subjective sense of injustice rather to injustice proper (i.e. object of resentment). Although there are several examples of envious persons claiming that their situation is undeserved, such claims might be considered as deliberate attempts to legitimize a socially condemned emotion.

possible situation: when the subject perceives the situation as changeable but does not believe he can change the situation (or when the subject perceives the situation as unlikely to change but believes he possesses the abilities to change the situation). In that latter case, the perceived control is intermediate and envy pushes the subject to withdraw from the existing situation (i.e. change job, move to another neighbourhood...). Table 1 summarizes the correlation between perceived control and envious reactions based on the model of Cohen-Charash et al. (2008).

INSERT TABLE 1

Table 1: Model of perceived control of Cohen-Charash et al. (2008) and reactions to envy.

			Perceived changeability of situation		
			High	Low	
Perceived ability to change	the situation	High	Self-directed responses (e.g. improving	Dimension-focused reactions (e.g.	
			position of self, positive emotions and	withdrawing from situation, cognitively	
			cognitions	changing situation, emotional and	
				cognitive reactions)	
		Low	Comparison-other directed responses		
			(e.g. harming the other, negative		
Per			emotions and cognitions)		

Testa and Major (1990) explore that issue through an experiment. After performing a task, subjects are informed that they performed poorly. They are also informed of other participants' performance. Whereas some subjects are exposed to better performing individuals (upward social comparison), others are exposed to poor performing individuals (downward social comparison). Then the authors invite subjects to participate to an additional task. Some subjects are told that whereas they failed during the first task they could improve their performance at the second task (high control condition) whereas other could not (low control condition). After participating to the second task, subjects are then asked to report their subjective feelings.²⁰ Testa and Major (1990) observe that subjects exposed to upward social comparisons and participating in the low control condition report the highest levels of depression and hostility. In another experiment Lockwood and Kunda (1997) also emphasize on the importance of perceived control. They reveal that the perception of control over the desired attribute predicts whether unfavourable social comparisons (i.e. upward social comparisons) affect negatively one's self-evaluation. In their study, 1st year undergraduates receive information concerning some other student (referent student afterwards) who performs well in a

²⁰ Again the authors focus on subjects' depressive and hostile reactions.

self-relevant domain. The referent student is either a 1st year undergraduate (i.e. students of the same level) or a 4th year undergraduate. Comparisons with the 1st year undergraduate rival are expected to damage one's self-image whereas comparisons with the 4th year undergraduate rival are expected to induce the subject to make additional efforts. The authors ask participants to report their beliefs about their own abilities. The authors observe that participants having optimistic beliefs about their own abilities find upward social comparisons to embody some emulative value. Conversely, subjects having pessimistic and fixed beliefs about their own abilities do not find any emulative aspect in upward social comparisons. Finally Cohen-Charash et al. (2008) also investigate that issue. They recruit employed participants and ask them to complete a questionnaire about their envy experiences at work.²¹ The questionnaire aims at examining the changeability of the situation and the person's perceived ability to change it. The authors observe that in presence of low perceived control (i.e. the situation is perceived as unchangeable), 81% of subjects experience negative feelings and 52% engage in destructive actions. On the other hand when the situation is perceived as changeable and the subject believes he can change it (high perceived control), 67% of subjects indicate that they engage in constructive actions. But in the same time 58% of subjects signal that they also engage in destructive actions in such situations. Cohen-Charash et al. (2008) find mixed evidences concerning the impact of perceived control on the action resulting from envious feelings.

Evolutionary psychology also suggests the importance of perceived control in the envy process. Evolutionary psychology is a new branch of psychology that refers to adaptation and evolution so as to explain psychological traits and considers individuals as the functional products of natural or sexual selection. Evolutionary psychology states that human behaviour is generated by universal psychological adaptations that evolved in order to solve recurrent problems in human environments. Relying on evolutionary psychology, Hill and Buss (2008) state that the key parameter which will decide the direction of envy (whether emulative or destructive) is the environment in which the subject and the rival interacts. Indeed they argue that the behavioural impact of envy depends on what are the strategies available given personal and environmental constraints. The environment determines what are the options (i.e. strategies) at the subject's disposal and also underlines what are the optimal solutions from the subject's perspective. Hence envy would not exert the subject to engage in an action if it forms part of a strategy that is not optimal for the subject. If the environment favours efforts (by promoting images of self-accomplished persons, by favouring individual mobility...) or does not allow negative attitudes (by establishing social norms or legislating) then the

²¹ The definition of envy is given to subjects. Cohen-Charash et al. (2010) define envy as: "*Envy is what you may feel in situations in which you desire something another has and you do not have*".

subject consumed by envy might be more pushed to make additional efforts so as to get out from his relative inferiority and to put an end to his painful envy. On the other side, if the environment does not favours efforts or facilitates negative behaviour (by lack of social norms, lack of opportunity to mobility), envy is more prone to exert the subject to harm the rivals and to remove the desired attribute from the latter's hands. Hill and Buss (2008) precise : "(...) the behavioural strategies motivated by envy should vary depending on what behavioural strategy or set of strategies are optimal given personal and environmental constraints. (...)The optimal behavioral strategy that envy will likely motivate in response to such an advantage depends on the costs and benefits associated with each." (p. 66). Imagine agent A working in a company. He learns that his colleague get promoted. Envy arises in him. What are the possible options at agent A's disposal? We can roughly distinguish three options. First agent A can opt to work harder. Alternatively agent A can choose to quit the company for another one. Finally, agent A can choose to damage the situation of his colleague or to deter the latter's performance through sabotage acts or through withholding information. For Hill and Buss (2008), agent A will select the optimal strategy. The optimal strategy depends on the cost and benefits associated with the strategy. Considering that agent A works in an European company, he will surely work harder since this strategy constitutes the best one to increase the likelihood of catching the manager's attention and obtaining a promotion. Conversely, if we consider that agent A works in a small company located in an underdeveloped country, the optimal strategy will consist in damaging the rival's situation and destroying his attributes. Indeed in such setting, the likelihood of getting promoted or obtaining the resources required for, at least, matching the rival's advantage are scarce. This suggests that the individual has some conscious control on his envy.

Then it sounds like the hostile aspect of envy appears in specific situations. Indeed as not every unflattering social comparison generates envy, not every envious feeling induces the subject to exhibit hostility toward the rival. Two key elements have been identified in the envy process: the perceived control and the subjective sense of inferiority. Envy involves hostility when the desired attribute is out of range from the envier's possibility and when the envier personally believes that the rival's better situation is unfair.

d. Partial conclusion

In this section, we refer to psychological researches on envy so as to sketch envy from a qualitative perspective. One important point about psychological researches is the experimental approach they adopt to investigate the emotion. This approach helps them in identifying the affective differences

between different situations in which envy is prone to arise. They can also examine the impact of the relationship between the subject and the rival (e.g. friendship, rivalry...) on the experience of envy or study to what extent envy has a depressive effect on the subject and when envy can have a positive impact both from an affective and behavioural perspective on the subject.

In line with philosophers, envy stems from social comparisons. More precisely, envy arises from every unflattering social comparison that threatens one's self-evaluation and thus self-esteem. Social comparisons are used so as to form one's self-evaluation. So any social comparison that can alter self-evaluation may generate envy. In order to impact significantly one's self-evaluation social comparisons have to concern self-relevant attributes or traits, i.e. material or immaterial goods for which the subject attach much importance. For example, an athlete that won a bronze medal in swimming is not ought to envy an athlete that won the gold medal in athletics. Although both are athletes, they are interested in being the best in their respective domains: social comparisons concern not self-relevant attributes. Conversely the bronze medal swimmer is very likely to envy the gold medal swimmer. In that latter case social comparison focuses on a self-relevant attribute and is ought to damage the bronze medal swimmer's self-evaluation. Again psychologists emphasizes on the necessary condition that social comparisons, in spite of concerning self-relevant attributes, have to concern similar subjects in order to generate envy. Similarity also modulates the impact and selfrelevance of social comparisons. When social comparisons concern similar subjects, they are more likely to affect (whether positively or negatively) one's self-evaluation because similar persons are likely to possess similar aspirations, objectives and to share self-relevant attributes. Thus social comparisons between similar subjects are more prone to trigger envious feelings when leading to an unfavourable diagnostic.

Envy is an unpleasant experience. Envious episodes are labeled with terms such as dissatisfaction, disapproval, longing and desire to improve. By asking subjects to indicate how they feel when they experience envy, psychologists are able to distinguish two main affective components in envy: depression and hostility. The depressive component is associated with the experiential consequences resulting from unflattering social comparisons, i.e. feelings of inferiority, ill-will and dissatisfaction. The hostile component refers to the action tendency associated with the emotion.

Psychologists offer new insights to understand the action resulting from envious behaviours. They distinguish two forms of envy: one form includes the desire to remove the desired attribute from the rival's hands (*"envy proper"*) whereas the other no (*"envy benign"*). They acknowledge that hostility is deeply rooted in envy. Nevertheless, albeit hostility is inherent in envy, psychologists point out that not every envious episode pushes the subject to adopt a hostile attribute directed at the rival and that

the hostility included in envy can take miscellaneous forms. Referring on experimental procedures, psychologists observe that the hostility included in envy is modulated by two parameters: the perceived injustice and perceived control. When the subject believes his situation to be the result of unfair decisions he is more likely to exhibit hostility toward the rival. Besides when the subject believes he can improve his situation and he possess the ability(ies) required to improve his situation, then envy is ought to push the subject to engage in constructive rather than in destructive efforts.

To conclude, psychologists sketch envy as an unpleasant experience arising from the awareness of another's advantage one lacks and characterized by feelings of inferiority, hostility and longing. They define envy as made of two main components: depression and hostility. The depressive component refers to the unpleasant experience of envy and associates envy with feelings of inferiority, ill-will, dissatisfaction or longing. The hostility component refers to the action resulting from envious feelings. Psychologists convey that the hostility inherent in envy can be expressed through a variety of forms and that perceived injustice and control modulates the expression of the hostility.

Relying on previous researches, Smith et al. (1999) build a device so as to elicit envy or more precisely to assess the tendency to feel envy. They create a group of candidate items (54 items at the beginning) and ask subjects to rate on a likert scale each item.²² Candidate items represent the two main affective components of envy: the depressive and hostile components (see Appendix). Smith et al (1999) remove some variables that do not satisfy different criteria (authors retain items loading 0.60 and higher on the first unrotated factor, eliminate redundant items or items that are overly specific in terms of the envied object). Finally Smith et al. (1999) retain eight items in order to form the Dispositional Envy Scale (DES afterwards). A version of the DES is supplied in Table 2. Two items capture the tendency to feel inferior when observing others' advantages (items 2 and 6). One item represents the tendency to feel frustrated at the sight of others' advantages (item 4). Two items represent feelings of injustice created by another person's advantage (items 7 and 8). Finally, Three items catch the frequency of envy (items 1, 3 and 5), its controllability (item 5) and its consistent intensity (item 3). The DES does not measure the envy experienced by a subject but the predisposition to experience envy when exposed to an unfavourable social comparison.

Insert Table 2

²² Each likert scale ranges from 1 (meaning « I strongly agree ») to 7 (meaning "I strongly disagree")

Table 2: Items from the DES elaborated by Smith et al. (1999).

Item	Item wording	
number		
1	I feel envy every day	
2	The bitter truth is that I generally feel inferior to others	
3	Feelings of envy constantly torment me	
4	It is so frustrating to see some people succeed so easily	
5	No matter what I do, envy always plague me	
6	I am troubled by feelings of inadequacy	
7	It somehow doesn't seem fair that some people seem to have all the talent	
8	Frankly, the success of my neighbours makes me resent them	

4. Final Conclusion

In this paper we explore the emotion of envy and provide a description of the emotion through referring both on philosophical and psychological researches on envy. Thanks to this paper we define elements that can help economists to identify and capture envy. Envy is a social emotion, i.e. an emotion arising from social comparisons. Envy stems from unfavourable social comparisons that damage individual self-evaluation and self-esteem. To affect individual self-evaluation and selfesteem, social comparisons have to concern self-relevant attributes, i.e. goods or domains that are relevant to determining and evaluating self-evaluation, and to concern similar and not too distant individuals, i.e. individuals sharing similar characteristics. The emotion can be roughly defined using two dimensions: depression and hostility. The depression dimension refers to the unpleasant and often painful experience of envy: envy can be sketched as a form of painful sadness at the sight of others' advantages. The depression dimension included in envy may be considered as the consequence of the relative inferiority of the agent, i.e. the source of envy. An episode of envy is made of distinct affective states: feelings of inferiority, ill-will and longing. The hostility dimension captures the action tendency of the emotion. Envy exerts the subject to engage in hostile behaviour toward the rival. The hostility inherent in envy can be expressed through a variety of forms and is modulated by two key parameters: perceived control and perceived injustice. The perceived control refers to the subjective belief that the agent possesses the ability to improve his situation. If the agent possesses a low perceived control, i.e. has pessimistic beliefs relative to its possibilities and capacities to improve his situation then he is more likely to engage in an hostile behaviour. Conversely, if the agent possesses a high perceived control, i.e. he believes he has the capacities and abilities required to improve his situation then the agent is more likely to make additional efforts and the hostility inherent in envy is unexpressed (or at least will not be intense). The perceived injustice catches whether the subject perceives his situation as unfair or not. When the subject perceives his situation as unfair, the latter is more likely to exhibit hostile reactions. Envy is also modulated by the gap between the subject and the rival. The correlation between the intensity of envy and the subjectobject distance can be pictured as a bellshaped curve. Indeed the intensity of envy depends on whether the subject compares himself with members from his reference group or outside from his reference group. The correlation between the emotional intensity of envy and the subject-object gap is positive concerning social comparisons with members from his reference group and negative with members located outside from his reference group. In this paper, we also discuss whether envy includes equality concerns and how to disentangle envy from resentment. Finally envy can be defined as an unpleasant emotion arising from any unfavourable social comparison that potentially affects negatively individual self-evaluation, characterised by a dissatisfaction (or more generally by depressive reactions) at the awareness of others' relatively higher situation and position and including hostility (that can be expressed through a variety of forms).

How can economists identify and capture envy? Through this paper we point out three elements that can be used within economic analyses to identify envy and explore its consequences. First, as envy arises from every unfavourable social comparison that affects negatively individual self-evaluation and self-esteem, one can observe the impact of unflattering social comparisons on individual selfevaluation and self-esteem. If social comparison damages individual self-evaluation and self-esteem then envy is prone to arise. Although evaluating individual self-esteem and self-evaluation is made possible using reliable devices (Rosenberg, 1965; 1979; 1985), observing the impact of social comparisons on the latter is more difficult. Then as envy consists of two affective components (hostility and depression), one can easily evaluate these two dimensions so as to observe the intensity and action tendency of envy. Nevertheless by evaluating subjects' depressive and hostile reactions, it is difficult to argue that one can identify envy. In line with envy many social emotions are made of depressive and hostile reactions (e.g. shame, jealousy...). Finally one simple way to identify envy would consist in evaluating the satisfaction subjects' derive from observing others' relative successes or advantages. If a subject indicates to be dissatisfied at learning others' successes or advantages he is ought to experience envy. The advantage of this method is that evaluating individual satisfaction is relatively easy and the devices implemented for that issue are acknowledged to be reliable. But again this measure would include some limits: how to disentangle envy from fairness considerations (absent in envy)?

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