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What is it (like) to imagine an emotion?

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What does it mean to imagine an emotion? The present article introduces a typology of three different ways in which it is possible to imagine emotion. This typology allows to individuate a form of imagining emotion that has been underexplored: emotion-like imagination. Emotion-like imagination, rather than being a way of merely imagining *that* a certain emotional experience occurs or a form of *responding emotionally* to imagined representations, requires a subject to *re-enact* the emotional state itself so that the imagining has emotional phenomenal properties as its main content. We go on to provide a first in-depth exploration of emotion-like imagination, suggesting emotion regulation mechanisms as the empirical grounds for its cognitive realizability. Finally, we sketch how emotion-like imagination can fruitfully complement discussions of affective forecasting and empathetic understanding.

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Introduction

The occurrence of emotion and imagination in tandem is a landmark of human cognition, and yet it is no easy task to give a satisfactory account of their relationship. It is challenging to understand e.g. how it is possible to feel emotions when engaging with merely imaginative representations, react emotionally to the reading of fiction (the so-called “paradox of fiction”), or determine whether imagining an emotion instantiates a fully-fledged emotional occurrence or a mere *fac-simile* emotion.

In the present article, we address some of these concerns from a different angle. Instead of merely asking how it is possible to feel emotions in imagination, or what the difference is between imagined emotions and their real-life counterparts, we are going to take a step back and ask the following question: what does it mean to imagine an emotion?

In its simplicity, we believe that asking this question is fruitful in accounting for several aspects of the link between imagination and emotion. In fact, it is easy to conflate various ways in which it is possible to imagine emotions, and this is likely to generate confusion about what specific issues are at stake in discussions. Different ways of imaginatively engaging with emotions are likely to involve different cognitive systems and have diverging psychological profiles and epistemic outcomes.

Moreover, directing our attention to the various ways in which emotion and imagination can interact will allow us to highlight a surprisingly underexplored form of imagining emotions, which we will call “emotion-like imagination” (in analogy with belief-like and perception-like imagination). Emotion-like imagination, as we will see, rather than constituting a way of merely imagining that a certain emotional experience occurs or of *responding emotionally* to imagined representations, requires one to actually *re-enact* the emotional state itself so that, as we will put it, they have emotional phenomenal properties as the main content of what is imagined.

After having spelled out in detail what we take this process to be, we are going to give a brief sketch of the empirical emotion regulation literature that harbors promising ingredients for an account of the cognitive realizability of emotion-like imagination.

Three relationships between imagination and emotion

What does it mean to imagine an emotion? At least three things:

- (i) Imagining *that* a certain emotion takes place—*Belief-like imagining emotions* (B-Im)
- (ii) *Responding emotionally* to a certain imagined representation—*Emotional imagination* (E-Im)
- (iii) Imagining *undergoing* an emotional experience—*Emotion-like imagination* (X-Im)¹

Let us take a closer look at all of them in succession.

Belief-like imagining emotions. Roughly put, the distinctive feature of this kind of imagination consists in imaginatively taking a certain proposition to be true. We pretend to believe that the state of affairs described by a proposition actually obtains, i.e. we process it as if it were true.

We can believe-like imagine a remarkably wide variety of propositions such as that Paris is the capital of Spain, that an unknown killer variety of eggplants is spreading throughout Europe, or that we are Napoleon. This process endows imaginers with the capacity to explore the vast epistemic landscape of possibility and to draw informed inferences merely based on hypothetical, non-actual, or utterly fictional states of affairs.²

There are many issues to be discussed about B-Im (see e.g. Amy Kind, 2016; Liao and Gendler, 2019). For present purposes,

it is crucial that B-Im can be successfully instantiated without having to represent any relevant sensory, affective, and broadly phenomenal components that could be relevantly linked to the propositions imagined. Thus, there is no need to imagine a proposition—as it is usually said in debates about the imagination—*from the inside*, i.e. from the point of view of a subject who first-personally undergoes experiences that might be directly or indirectly related to the proposition imagined. For instance, in order to propositionally imagine that killer eggplants are spreading around Europe, we do not have to model e.g. the outlook of the killer eggplants.³

We can easily apply this idea to the case of imagining emotions. When we are belief-like imagining an emotion, all we have to do is simply make believe that a certain emotional occurrence is instantiated. For example, while out on a date that turned out to be disastrous due to our bad mood, we might imagine how it could have been having we felt happy. Based on this counterfactual imaginative assessment, we could conclude that the date would have been much more enjoyable than it turned out to be.

Again, even in this case, we can do that without any relevant aspect of happiness being brought about in imagination, we do still feel as miserable as ever. Yet, in virtue of the understanding of the relevant proposition “I am happy” and in virtue of some implicit naïve theory on how people tend to behave on dates when feeling happy, we can reasonably infer that we would have found ourselves in a much more pleasant situation.

We might even hypothesize that someone who has never felt happy in their life could still belief-like imagine being happy and draw some informed conclusions based on how people tend to behave when happy, even though they do not have the faintest idea of what it feels like to be happy *from the inside*, i.e. even though they are incapable of imaginatively conjuring up any relevant experiential feature of the emotion of happiness.

Emotional imagination. Another way in which we can conceive of the relationship between imagination and emotion concerns our way of emotionally engaging with certain imaginings. We call this process “emotional imagination” (E-Im).

In emotional imagination, we conjure up an imaginative representation of certain objects or states of affairs and, as a result, we undergo some emotional or affective experience in response to what we just imagined. We can, for instance, imagine tasting a dish we always hated and, as a result, come to feel disgusted, or we might imagine bumping into our worst enemy and experiencing a sudden rupture of anger.

For E-Im to be instantiated it does not matter whether the emotional responses are caused by belief-like imagination or by other imagery-based or perception-like kinds of imagination. Even if it is more likely that emotional reactions occur in response to an experientially rich representation of objects and states of affairs, we do not have anything to oppose, in principle, to the idea that mere make-believe propositions can also generate emotional reactions of some sort. What is crucial for E-Im is that we *do* respond emotionally to merely imagined representations, no matter how these imaginings are represented—as mere make-believe propositions, or as experiences we imagine undergoing from the inside.

With emotional imagination, we never imagine emotional *experiences*, but rather imagine certain objects or events and eventually get an emotional response out of it (Currie and Ravenscroft, 2002; Hopkins, 2010). As we might put it, emotions seem to be merely incidental to what is imagined, i.e. they tend, at best, to occur as a likely by-product of what we imagine.

Even if we might know with a high degree of confidence that certain imaginings will bring about certain emotional responses, we get the relevant emotion only by virtue of statistical regularities in our affective responses. In a nutshell, with emotional imagination, we have never had emotional experience as the main *content* of what is imagined, but always work it out indirectly by imagining something else.

These considerations help us introduce the third way in which to conceive of the relationship between imagination and emotion.

Emotion-like imagination. We can now ask: Is it possible to imagine *from the inside* undergoing an emotional experience without having to work it out indirectly by imagining something else to trigger certain emotional reactions?

To answer this question, we have to wrap our heads around what it would mean to experientially imagine an emotion or to emotion-like imagine as opposed to the other kinds of imagining emotions that we reviewed so far.

Emotion-like imagining of anger consists in neither belief-like imagining *that* we are angry nor in imagining an anger-inducing object or state of affairs and, then, get anger as a response to what we imagine. It rather consists in imagining *feeling angry*, enabling us to appraise some objects or facts *through that specific emotional lens*. In this sense, the subject would have to imagine being in a certain state that feels relevantly similar to the emotion they are trying to recreate, and that will eventually constitute the basis for an emotional appraisal of the specific intentional object toward which it is directed.

Debates surrounding emotion and imagination tend to privilege the other two kinds of imagining emotions we have mentioned and the phenomenon of experientially imagining emotions or emotion-like imagination (henceforth, X-Im) has been neglected. Indeed, concerns for imagination and emotion are mainly circumscribed within the perimeter of the paradox of fiction (e.g. Currie, 2020; Currie and Ravenscroft, 2002; Gendler and Kovakovich, 2006; Walton, 1990). This has implicitly kept X-Im hostage to E-Im, since the popular kinds of examples consist of cases where a subject responds emotionally to an imagined situation, as it paradigmatically happens when engaging with works of fiction. A thorough account of X-Im is, therefore, not easily found in the literature.⁴

Throughout the rest of this article, we are going to explore in more detail the phenomenon of X-Im and offer a plausible story regarding its eventual cognitive realizability.

Some preliminary concerns

It is useful to start by addressing four distinct worries. The first regards (i) X-Im's conceivability, the second (ii) its actual existence and the third (iii) its usefulness. Let's briefly address them in turn.

- (i) Concerning the first worry, one might claim that emotions *always* have an intentional object. In this sense, it is impossible to merely imagine an instance of anger, without also imagining some kind of intentional object, no matter how vaguely defined it is. In this sense, one might not see how X-Im might even be conceivable. Since imagining emotions will always be imagining feeling emotional *about* something, X-Im could boil down to mere instances of emotional imagination.

We believe this worry is misplaced. Of course, our imaginings would have to minimally contextualize emotions so that they be *about* something. Still, this does not entail that X-Im boils down to E-Im. There is nothing that forces us to think that imagining the object necessarily predates and generates the emotion as its side-effect. A

process in which a certain emotional experience constitutes the main content of what is imagined is perfectly conceivable, even if we always have to imagine it as referring to *something*. We will come back to this issue more extensively in the following sections.

- (ii) Even if we grant that something like X-Im is conceivable, we can still be concerned about its actual existence, and ask the following question: Is X-Im *actually* part of our minds? That is, can we imagine emotional states in a way that is relevantly similar to other states we can imaginatively recreate such as perceptions? Currie and Ravenscroft (2002) say no. Even if they are willing to grant to imagination a fair amount of recreative power, i.e. they believe that our mind is populated by imaginative counterparts of a wide variety of non-imaginative mental states (e.g. belief-like imagining, desire-like imagining, perception-like imagining, pain-like imagining), they deny that emotions have imaginative counterparts, there is no emotion-like imagining. They argue that emotions are indeed "transparent to imagination" (Currie and Ravenscroft, 2002, p. 190), i.e. that imaginative representations bring about full-fledged emotional states, rather than mere imaginative counterparts of them. In this sense, it is impossible to locate emotional states within the perimeter of what can be imagined: emotions can only be actually undergone and never merely imagined. They offer two main reasons to embrace this view: one phenomenological and one evolutionary. The phenomenological reason relies on the introspective evidence that we actually undergo emotional experiences when we entertain imaginative representations. For instance, if we imagine something amusing, we can respond with *actual* amusement to it and not with a merely pretend version of it:

There is no imagining that has an amusement-like character; there is only being really amused. [...] As part of an imaginative project, one is often actually amused by some aspect of what is imagined, and here one's amusement is caused by what one imagines, as well as having the imagined event as its intentional object. In that case we can say that imagination is transparent amusement. (Currie and Ravenscroft, 2002, p. 190)

The evolutionary explanation relies on the considerable advantages deriving from a cognitive system that is able to respond emotionally to what is imagined. Indeed, being able to emotionally assess the imaginative representations we happen to entertain offers huge benefits to our capacity for decision-making and planning. When wondering whether we should take the dark, creepy road back home or the well-lit, comforting one, a fear response towards the first imagining is what might providentially prevent us to run into unnecessary troubles on our way back home. As they put it:

[A]n emotional sensitivity to merely imagined circumstances can help me manage my affairs: in order to affect my predicament I must act; to act effectively, I must plan; to plan, I must imagine alternative scenarios and choose between them. Having a system of emotional responses poised to respond to what I imagine is a capacity we would expect to find in creatures able to choose between alternatives. (Currie and Ravenscroft, 2002, p. 197)

We agree with most of what Currie and Ravenscroft have to say about the interaction between emotion and

imagination. It is what they *do not* say that we want to address. They claim that there cannot be emotion-like imaginings but, in fact, they only give arguments in favor of the existence of E-Im, i.e. the actual occurrence of emotional states in reaction to imagined representations. From this angle, they can conclude that imaginings can generate full-fledged emotional responses. However, from the existence (and usefulness) of E-Im it does not follow that X-Im does not exist. This means, there is still a story to be told about imagining emotions in the relevant sense we tried to capture through the notion of X-Im: what about targeting emotional phenomenal properties as the main *content* of what is imagined, rather than having them as a mere response to what we imagine? What about imagining what it feels like to undergo a certain emotional state? Currie and Ravenscroft remain largely silent on these questions. Even if it is true that we can have genuine emotional responses in response to what we imagine, this by itself does not rule out the possibility that we can target emotional phenomenal properties (i.e. how emotions *feel* like) as the main content of what is imagined, i.e. it does not preclude the possibility of something like X-Im.

As it will become evident in the remainder, the present account of X-Im will reveal some affinities with Currie and Ravenscroft's considerations about the transparency of emotions to the imagination. As we will see, X-Im of emotions actually re-instantiates some of the relevant phenomenological properties of full-fledged emotional states. At the same time, they could still be counted as imaginative states, since X-Im voluntarily generates and instrumentally co-opts emotional phenomenal properties to fuel and sustain its imaginative enterprise. We will argue that this goal can be achieved thanks to emotion regulation strategies. More on that in the next sections.

- (iii) For what concerns our third and final worry, we believe that one of the most valuable and interesting uses of X-Im consists in its capability of enabling subjects to gain new affective perspectives, most notably through affective forecasting and empathic understanding of others, especially of those whose perspectives considerably differ from their own. X-Im might indeed help the empathic re-enactment of emotional states that we would not typically have. We will come back to this specific aspect at the end of this article and therefore we will pause this issue for now. Now, having addressed the mentioned concerns, we shall build our case for X-Im of emotions.

Substantiating emotion-like imagination

So far, we have been distinguishing different ways in which imagination and emotion can interact: B-Im, E-Im, and X-Im. We have also argued that the latter, X-Im, has not received the attention it deserves. In the present section, we start to fill this gap — we will try to illustrate in more detail what X-Im could look like and how it can be distinguished from other ways of imagining emotions. This has to be taken as the first step on a path that is yet to be adequately explored.

X-Im is the process through which we imagine from the inside to undergo a certain emotional state: far from constituting a mere detached intellectual exercise (like e.g. B-Im) X-Im requires us to *re-enact* how the emotion feels from a first-person perspective. As already anticipated, by re-enacting an emotion we come, eventually, to undergo an actual emotional experience, i.e. through X-Im we enter in a state that relevantly resembles what it feels like to undergo the emotion in question.

Getting clearer on some of the essential features of emotional experiences will help us clarify the concrete workings of X-Im.

Phenomenal valence. One distinctive feature of emotional experience is the felt positivity/negativity of certain experiences (Charland, 2005; Teroni, 2018). In the literature, the positivity/negativity feature can be further elucidated in hedonic terms as pleasantness or unpleasantness or in value terms as seeming value or disvalue (Carruthers, 2017). It should be emphasized that valence is a *phenomenal* property of emotional experiences, i.e. something that is consciously experienced by the subject in an emotional state.

Bodily sensations. Another prominent feature of emotional experiences is bodily sensations. Emotional experiences are typically accompanied by changes in muscle activity, breath, or heartbeat. A particularly noteworthy feature of this somatic phenomenology is *felt arousal*: during an emotional experience, the subject feels a more or less localized increase/decrease in the level of energy or excitement (Colombetti and Harrison, 2018). Again, with bodily sensations and felt arousal, it should be stressed that, in this context, we are interested in their phenomenal dimensions.

Motivation. The aforementioned features of emotional experiences are usually associated with the ability of emotional experiences to motivate us to act or behave in a certain way (Corns, 2014; Scarantino, 2014). Thus, emotional experiences can be said to be *motivational*, i.e. they can exert a motivational push that can be directly translated into certain behaviors or behavioral tendencies.

The idea behind X-Im is that, in order to imagine undergoing an emotional experience from the inside, we would need to be able to conjure up (at least some of) the emotional phenomenal properties we just mentioned. In other words, the imagined content distinctive of X-Im is said phenomenal emotional properties. This is what allows us to distinguish E-Im from X-Im: the former kind of imagination, indeed, consists of imaginings whose content are objects or states of affairs that are likely to evoke certain emotional occurrences but are not intrinsically emotional themselves. Interestingly, E-Im is not qualified in terms of *what* is imagined but only in terms of *the consequences* brought about by certain imaginings. In other words, E-Im could be said to be the “cognitive base” of the actual emotions. That implies that one could, in principle, imagine *anything* and that could still count as an instance of E-Im, as long as some emotional experience is brought about.

This contrasts with X-Im, whose imaginative content is specified in terms of emotional phenomenal properties. In a nutshell, differently from E-Im, X-Im is *constitutively defined* by the content of what is imagined.

Now, it is rather implausible that X-Im could get off the ground, was it to consist in *merely* imagining the aforementioned emotional phenomenal properties (valence, arousal, bodily sensations, motivational push). Indeed, X-Im is further facilitated by another central aspect of emotional experience: intentionality.

Just as there are no perceptions or perception-like imaginings (or beliefs or belief-like imaginings) without them being about *something*, there are no emotions or emotion-like imaginings without being about *something*. Paradigmatic emotional experiences are intentional states (e.g. Goldie, 2002; Kriegel, 2014), i.e. they are about something, and they represent states of affairs as being a certain way. My experience of fear represents the spider as being dangerous and my experience of disgust represents the smell of a skunk as repugnant. The specific objects or states of affairs emotions are directed at are their *particular objects* and the emotion-specific properties emotions represent their particular

objects as having are their *formal objects* (Kenny, 1963; Teroni, 2007).

The intentionality of emotional experiences relies on other mental states such as perceptions, beliefs, memories, etc. These mental states provide emotions with their particular objects. Such mental states are sometimes called the *base* of emotion (Deonna and Teroni, 2012). Similarly, as for actual emotional states, X-Im relies on a specific *base* in order to achieve its representational goal: the experiential imagination of emotion is in need of an intentional anchor. These intentional anchors are often going to be other kinds of imaginings, but it does not have to be that way. We can indeed imagine being scared of squirrels by simply having a look at the one in front of us in the tree: in this case, our actual visual experience of a squirrel is what constitutes the base for our X-Im of fear (of squirrels). Usually, though, it seems like the intentional base of X-Im will be worked out by other kinds of imaginings that will be conjured up to bring about the desired imaginative representational output.

These considerations do not entail that the intentional elements have to predate the imagined emotional phenomenal qualities. There is room for the latter to co-exist with or even exist without the former. However, it is plausible that, in bringing about a certain X-Im, we typically *first* engage with the deliverances of the base (e.g. in the form of an imagining or perception) and then, scaffolded by it, manufacture the desired emotion-like imagining. For instance, if we attempt to imagine being disgusted by a dog, we can *first* conjure up the relevant image of a dog. Note that it might well be—as in fact is—that our spontaneous reaction to an image of a dog is not one of disgust but, rather, of joy and amusement. In a second moment, we can try to detach the image of a dog from the spontaneous emotional reaction we tend to have and try to couple it with one of disgust by evoking the relevant emotional phenomenal properties of that emotion.

It remains an open question whether X-Im could have an extended lifespan without being directed toward an intentional object. Emotional phenomenal properties might be brought into existence by X-Im but only have a brief half-life without something they are about. Thus, even though emotional phenomenal properties can be conjured up in X-Im, it is questionable whether they are able to evolve. Indeed, if we try to imagine a phenomenally valenced state, then we imagine entering a state that feels positive or negative: but emotional experiences usually do not feel positive or negative *simpliciter*. Emotions feel positive or negative in relation to their formal objects, e.g. amusement feels positive in relation to funniness and fear feels negative in relation to danger, and these formal objects are typically represented as had by the specific intentional objects emotional states are about. Therefore, it appears hard to evoke the required phenomenology of emotional states without also anchoring it to a base.

With these resources in place, we can more efficiently highlight the specific features that tell X-Im apart from other ways of imagining emotions. Let us imagine Napoleon after his defeat at Waterloo. We can B-Im that Napoleon was furious while contemplating the grim spectacle of his military debacle. We can even enrich our belief-like imaginings with images of the devastated battlefield and of the restless and upset expression on Napoleon's face. Now, we can imagine that, due to our specific personality and psychological dispositions, we might *react* in a certain way to these imaginings, say with an emotion of *Schadenfreude* for Napoleon's anger. This case would count as E-Im. But, in fact, we could react to these imaginings with an open-ended variety of emotions, they would all still count as cases of E-Im. Put differently, with E-Im, there is no *mapping relation* between what is imagined and the emotions evoked: what is needed is simply an emotional reaction of some sort, whatever it may be. With X-Im, instead, there is a mapping relation between the emotions evoked

and the imaging that is brought about. If we try to imagine *being* the angry Napoleon, we have to bring about the relevant emotional properties that might help us to shape the rich phenomenology of his imagined emotional state. X-Im can be said to be successfully instantiated only if the emotion evoked is the one the subject is trying to experientially imagine.

But then, what does it mean to conjure up the required emotional phenomenal properties? As already anticipated in the previous section when discussing Ravenscroft and Currie's account of imagination of emotions, there is a relevant sense in which we can say that emotions are largely transparent to the imagination. This implies that, in order to evoke the phenomenal qualities that are constitutive of emotional experience, the subject needs to enter a state that phenomenologically resembles the bona fide emotional states. Put differently, imagining emotional states from the inside, brings about an emotional state itself. In this respect, X-Im is still very similar to E-Im because it too results in us undergoing an emotional state. And yet, there is a crucial difference: E-Im is *defined* by us entering an emotional state, whereas in X-Im we enter an emotional state only if it is successful. Moreover, as already stated previously, X-Im has specific emotional *targets*, whereas E-Im has just emotional *consequences* that are not constitutive of what is imagined and only incidentally relate to what is imagined.

Now, one might wonder, how can X-Im be told apart from usual garden-variety emotional states? Moreover, does the fact that X-Im's outputs are constituted by actual emotional phenomenal properties, i.e. by states that are phenomenally analogous to the actual experience of emotions, per se rule out the possibility for X-Im's to count as an imaginative process?

First, in contrast to voluntary actions, emotional experiences are not something that we usually decide to bring about: they seem to simply happen to us. In a nutshell, we are at the mercy of emotions rather than the other way around. In the case of X-Im, the emotional states that are brought about are outputs of a kind of voluntary (mental) action.⁵ We decide to imagine from the inside the phenomenology of being in a certain emotional state and we get, as a result, an experience that feels relevantly similar to the full-fledged emotional state we are trying to represent.

From this one should not conclude that every instance of X-Im counts as voluntary in the sense that the imaginer should always be fully aware of its epistemic goals and interests. It might well be the case that sometimes imaginers simply *find* themselves imagining certain emotions from the inside, rather than consciously deliberate about imagining them. Still, this does not preclude that X-Im is something that someone *does*, i.e. still subject to the will “in the sense that it makes sense to direct the will at them and that the will can influence their course and character” (McGinn, 2004, p. 14).

Now, one might still legitimately claim that bona fide emotional states can as well, at least to some extent, be subjected to the will, in the sense that we can sometimes voluntarily shape and influence their course: we can intend to calm down, we can take action to “defeat our fears”, etc. These are all instances where our will does play a role in shaping and regulating the course of our emotional experiences. Yet, it is still intuitively evident that there is a difference between bringing into existence an emotional state with a representational intent (implicit or explicit for what matters), as it happens with X-Im, and merely influencing or regulating a pre-existing emotional state by means of the will, as it happens with more central instances of emotional experiences. In the former case, the will seems to play not only a *regulative* role but also a *generative* role in the sense that there it is the subject's mental action that is responsible for the emergence of the emotional state in question. Put differently: the emotional states we find ourselves in when experientially imagining emotions do not

depend on external stimuli but are *endogenously* produced by the imaginer.

McGinn made some insightful observations when contrasting images (i.e. the outputs of imagination) and percepts:

Subjection to the will implies a difference in the *causation* of images and percepts. Percepts typically have their causal origin in external stimuli; and even in the case of total hallucination, the causation does not involve the subject's decision-making mechanisms [...]. But in the case of images, the causation comes from "inside"; it is endogenous not exogenous. It is very tempting to resort to the idiom of agent causation: it is *I* who causes the mental images that occupy my consciousness. (McGinn, 2004, p. 15)

These considerations can be easily extended to the case of emotional experiences and X-Im. It is indeed the imaginer who is causally efficient in evoking the emotional experience in question.

But then, one might wonder, similar considerations could be made for E-Im. After all, the imaginative representations that are at the core of E-Im are also endogenously produced by the subject and to some extent subject to their will. In evaluating this, one should be careful about what the imaginer is actually doing in X-Im and E-Im respectively. In fact, while X-Im is an intentional imaginative act in itself, E-Im as such is not an intentional act at all. We have seen that E-Im can be the output of an intentional act, however. You might e.g. have the intention to cheer yourself up by envisioning that a friend will visit you soon or enter the door and smile at you. Now, you might respond with joy to this intentional imagining. If so, then this would qualify as an E-Im that is brought about by an intentional act. However, imagining your friend might just as well fail to evoke an emotion in you and so there would be no E-Im. Note that the same intentional act might actually lead you to feel sadness (instead of the intended joy) because the latent fact that you miss your friend becomes salient upon imagining his entrance. In this case we would still speak of E-Im even though sadness was not the intended emotion.

In a nutshell: with E-Im the imaginer exerts control over the imaginative representations but not (directly) on the kind of emotional reactions they experience in response to them. Indeed, the imaginings themselves are responsible for what the imaginer is feeling, i.e. the imaginer is an agent with respect to what is imagined but a patient with respect to what is felt. In the case of (successful) X-Im, instead, the imaginer exerts control over the emotional state itself, i.e. they are an agent with respect to what is felt.

Finally, X-Im's outputs can still count as imaginative even if they rely on the actual re-experiencing of some of the relevant emotional phenomenal properties we aim to evoke. Indeed, this should be simply taken as the way in which imagining is concretely brought about in our cognitive architecture. The fact that, in the attempt to imaginatively represent the experiential dimension of emotional states, we undergo (if we are successful) an emotional experience that feels relevantly similar to the one we are trying to imagine, does not imply that X-Im is not an imaginative act, but simply that the process of conjuring up emotional phenomenal properties is partly realized with the contribution of the same properties we are trying to imaginatively evoke.

From emotion regulation to experiential imagination

Having clarified some of the essential features that we take to be instantiated by X-Im, in the present section, we are going to provide some empirical ground for the claims that we have been putting forward so far. Namely, we are going to offer some

elaboration on how a process with the features we ascribed to X-Im can be concretely realized by our minds.

X-Im is not the only case in which individuals influence their emotions. The common phenomena of influencing one's emotions has been widely researched under the header of Emotion Regulation (ER) (for a recent overview see McRae and Gross, 2020). Although no ER studies to date have directly addressed the process of X-Im, it is possible to build on existing research to postulate empirically plausible X-Im processes.

The influential process model of ER (Gross, 1998, 2015) provides a useful organizational scheme to understand ER with the subsequent aim of characterizing X-Im.⁶ The process model considers emotion generation to be a process in which the individual encounters a situation, attends to the relevant aspects of the situation, appraises it in relation to active goals and has a series of responses (experiential, physiological and behavioral). Five families of ER strategies are identified in relation to the emotion generation stage at which they first intervene:

- situation selection (e.g. declining to watch dramas in order not to get sad),
- situation modification (e.g. putting on calming music to avoid getting anxious),
- attentional deployment (e.g. distracting oneself away from emotionally charged stimuli),
- cognitive change (e.g. trying to take a more equanimous attitude toward an anger-inducing event),
- and response modulation (e.g. slowing one's breathing to calm down).

According to this conception of ER, "the defining feature of emotion regulation is the activation of a goal to influence the emotion trajectory" (Gross, 2015, p. 3).

There is one main obstacle that runs against the project of applying ER to the case of X-Im: we might call it the *generation issue*. This issue stems from the fact that there seems to be a substantial difference between standard instances of ER and X-Im because, as already anticipated in the previous section, when assessing the issue of how we can influence and shape the course and profile of our emotional experiences, ER research has tended to focus on the wholesale avoidance or reduction of the intensity of pre-existing negative emotions, whereas X-Im requires the *generation* of specific instances of emotions to fulfill the imaginative enterprise.

Indeed, the majority of experiments have studied ER based on hedonic considerations. The general assumption in many experimental settings is that subjects regulate emotion in order to increase pleasure and decrease displeasure. In other words, the general assumption is that the target of ER is *modulating valence* rather than changing or generating emotional states.

However, recent research has shown that subjects can also engage in ER out of utilitarian considerations (Tamir et al., 2008). This research shows that individuals seek to experience emotions that are considered useful even if they are unpleasant (e.g. they try to become worried before facing a potential threat). It is no surprise that studies researching utilitarian considerations in ER have found that subjects aim to elicit target emotional states, such as enthusiasm when expecting collaboration and anger when expecting confrontation (Tamir et al., 2008; Tamir and Ford, 2012).

The utilitarian-considerations experimental work is in line with the process model of ER introduced earlier according to which ER involves crafting an emotional trajectory with the aim of reaching a goal. In some cases, said the goal is itself a target emotion state⁷, and the trajectory is the process that leads the individual to it. X-Im is one such case. X-Im turns the standard process of emotion generation (as characterized by the process model)

around. In normal circumstances, a situation causes an emotion with the associated appraisal, attention patterns, and responses. In light of existing ER research, it seems fair to postulate that during X-Im, a *reverse engineering* process takes place, in which elements associated with emotion generation (such as appraisals, attention, and responses) are transformed and modulated through a combination of ER strategies until the target emotion emerges.⁸

As we have previously seen, one of the most potent engines of X-Im is the strategic imagination of intentional objects of emotions. But could there be instances of solely effective X-Im that do not involve intentional objects? A stint of introspection indicates that eliciting an experience of valence in such a way seems to be possible, at least for some individuals (e.g. try feeling negative valence without eliciting visual imagery or directing it to surround objects—it is difficult and the resulting valence is weak, but it seems to be possible nonetheless). However, as also stated in the previous section, it is doubtful that a high-intensity, clearly defined instance of X-Im could arise without other ER strategies involving imagery, cognitive reappraisal, etc. The case is even harder for more complex emotions, such as mistrust or nostalgia. Hence, a full-blown emotional state requires the scaffolding of other types of ER strategies that serve as a form of what we might call emotional *inflation*.

Going back to a previous example, one might be able to evoke a tinge of anger by simply imagining negative valence and associated physiological changes alone, but to experience the feeling of being the angry Napoleon upon his defeat at Waterloo, a further scaffolding of imagination will be needed. To imagine such a precise emotion we might change our posture, hunch, pay attention to and enhance bodily sensations of exhaustion and frustration, imagine the rain and the mud of Waterloo, imagine the words of French officials bringing news of the defeat, reappraise the imagined situation to become angry at Wellington and even at the rain, react then to this vivid scene with new physiological responses, making our breathing heavier and furrowing our brow, and so on and so forth in a rich, iterative poly-regulated process aimed at imaginatively enacting a very particular emotion.

Sketching the future: X-Im, affective forecasting, and empathic imagination

Before concluding it is worthwhile to mention two research venues that might be fruitfully illuminated by the concept of X-Im: affective forecasting and empathic understanding. We will briefly address them in turn and sketch ways in which X-Im might come into play when bringing about these psychological processes. We believe that scientific debates around these two topics could benefit from the concept of X-Im from a theoretical and empirical perspective.

Affective forecasting. Affective forecasting refers to our ability to anticipate the affective impact that certain events will have on us by allowing us to pre-experience these events via imagination (Wilson and Gilbert, 2005; Gilbert and Wilson, 2007). This information will then feed into our decision-making and likely influence the course of our actions.

For instance, imagining what a summer day in 2035 would feel like for my future self or my child—very hot and unpleasant—might inform my present decisions when it comes to climate-relevant behaviors.

At first blush, it would certainly seem that most instances of affective forecasting are standard cases of E-Im. Indeed, when affective forecasting, we try to episodically imagine a future event and emotionally react to it. The emotional state that results from

it is a consequence of what we imagined and forms the basis for our choices and behaviors.

However, we believe that X-Im might be deployed in some instances of effective forecasting. Indeed, in some cases, we might already know what an experience might feel like and nevertheless deploy X-Im to bring about a more vivid representation of those states for strategic purposes. For instance, we might wish to summon the motivational forces that typically derive from an affective state and deploy them in ways that are consistent with our short-term or long-term goals. We will clarify this point in what follows.

As we already stated, affective states involve a motivational component that can shape the course of our actions and behaviors. In absence of such an emotional/motivational component, we might act in dramatically different ways or fail to act altogether. In some specific instances, affective forecasting might be deployed not to predict the affective import of a future experience, but to anticipate via imagination the affective state that we know to be typically linked to certain experiences. We can then use this process to bring about the behaviors and attitudes that typically derive from such states.

An example might illustrate this point more clearly. Imagine an athlete who is about to play an important match against a valued opponent. In the moments before the match, the athlete might want to anticipate the feeling of euphoria from within that usually accompanies an intense athletic rally and use it to better prepare for her fight with the opponent.

Take another example. Imagine I am trying to exercise more often. However, when I run imaginative simulations of the exercise routine in my mind, I am instantly overwhelmed by negative emotions. I can feel the soaring pain in my muscles and joints accompanied by the awfully alarming sensation of being out of breath. This can bring about a cloud of negatively valenced affective states that work as an emotional disincentive for me to undergo my much-needed exercise routine. However, one way to counter the negative pull of all the above might be to summon an affective state whose motivational push is more in line with our goals. Indeed, I might try to summon from within the distinctive sense of accomplishment and satisfaction that might derive from my having done something good for my health and well-being. Here again, I would be deploying X-Im-driven affective forecasting to use to motivational push of emotional states to shape my agency in ways that are consistent with my goals.

This strategic use of X-Im might figure as a peculiar use of affective forecasting that is still underexplored in the vast literature dedicated to the topic. In such specific instances of affective forecasting, rather than computing an unknown output to figure out how to best act, we summon a likely affective state that we know will happen to motivate us to make decisions and behave in ways that are more consistent with our goals.

Empathic understanding. As already anticipated, X-Im can support processes of empathic understanding. It is by now a platitude that empathy can be (and has been) conceptualized in many and sometimes wildly different ways (Batson, 2009). Here, the notion of empathy that we are interested in has to do with the capacity to imagine what it feels like to undergo certain experiences (Paul, 2017; Boisserie-Lacroix and Inchingolo, 2019). To empathize with someone, we must be in the position to first-personally imagine what it would feel like to be in their shoes. X-Im might be then centrally involved in many instances of empathy, where the goal is to represent what it might feel like to undergo a certain kind of emotional state from the perspective of the person. X-imagining emotional states can become crucial when we are trying to understand emotional perspectives *from*

the inside that considerably differ from our own, i.e. perspectives that involve emotional states that we as empathizers would not undergo if placed in analogous circumstances.

An article published by Olivia Bailey (Bailey, 2018) on the relationship between empathy and testimonial injustice might help us elucidate this point more effectively. She individuates two different senses in which we can conceive of other people's testimonies about certain experiential states they are in.

- (i) A weak sense, in which we take people's testimony simply as a certification of a certain psychological state they are in.
- (ii) A strong sense, in which we treat other people's testimony as accounting for certain features of the world outside them.

Let us imagine that our friend Andrew is afraid of dogs. Whenever he is confronted with a dog, he shivers in fear. Imagine that Andrew voices out his state and shouts out: "that dog is terrifying". According to the above distinction, there are at least two ways in which we can take Andrew's testimony. If we take it in the weak sense, we interpret it as stating a certain state of fear and discomfort Andrew is in. He is afraid of dogs and undergoes negatively valenced emotional experiences whenever he is faced with one. If we take it in the strong sense, we interpret it as reporting an actual state of affairs in the world, i.e. one in which the dog actually looks terrifying. When we claim that in this stronger sense, we treat Andrew's testimony as certifying a certain state of affairs in the outside world, we do not mean that we take it as referring to some mind-independent property out there. Of course, the dog is not terrifying in itself. However, if we succeed in looking at the dog from Andrew's perspective, it is certainly *the dog itself* that looks terrifying. Andrew's state tracks on certain evaluative facts that are perceived as belonging to the world out there—in our case, to the dog. We can rephrase the above distinction alongside the typology we introduced in the present article. When we take Andrew's testimony (or perspective) in a weak sense, we are B-imagining it. This appraisal might in principle be devoid of any understanding of what it might feel like to be in his shoes (i.e. we don't know what it feels like to find dogs terrifying). In the strong sense, we might be either E-imagining or X-imagining Andrew's perspective as they both entail a first-personal appraisal of its emotional state. However, E-Im would cease to be of any help if our perspective on a specific subject matter radically differs from that of the other person. In this case, the only viable option is X-Im.

Indeed, suppose we happen to love dogs: whenever we see a dog, we are overwhelmed by feelings of joy and amusement. As an inveterate dog-lover, we might find it hard to imagine the perspective of someone who finds them terrifying. In this case, if E-Im was the only strategy we had left, we would always fail to understand what it might feel like to occupy Andrew's perspective: How could we ever understand the perspective of somebody who is afraid of dogs *from the inside*? However, we believe that X-Im could come to the rescue.⁹ Being able to imaginatively re-enact some relevant aspects of the emotional state Andrew is in could help us restructure our cognitive and attentional resources in a way that could make salient and intelligible to us some features of dogs that make them suitable for an instance of terror. X-Im would help us reconfigure our perspective so that we can see the world through the eyes of somebody who significantly differs from us emotionally.

In a nutshell, to take Andrew's emotional perspective in the strong sense, we need X-Im, i.e. we need to be able to see the dog as terrifying, that is as *warranting* a reaction of fear.

Conclusion

Here we hope to have accomplished four things: (i) offering a useful typology of the different ways in which imagination and

emotion can interact, (ii) unveiling a rather neglected way of imagining emotions, namely X-Im, (iii) providing a sound conceptual scaffold and a plausible conceptual basis for the process of X-Im, and (iv) sketching ways in which acknowledging X-Im can improve understanding of our capacity for emotional perspective-taking when it comes to affective forecasting and empathetic understanding.

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Notes

- 1 We will use the abbreviation X-Im to avoid confusion with emotional imagination. Moreover, emotion-like imagination, as we will show, centrally focuses on the *experience* of the emotion itself, and is therefore a kind of *experiential imagination*, hence X-Im.
- 2 Some authors claim that, even though we can imagine a wide variety of propositions to be true, we cannot imagine every proposition we please to be true: there are obstacles and limits to what can be imagined. Debates about such imaginative obstacles have tended to concentrate on the issue of imaginative resistance, i.e. people's incapability or unwillingness to imagine certain propositions or states of affairs (Gendler and Liao, 2016). It is not obvious though that imaginative resistance is something that could arise in cases of mere belief-like imagination (Leeuwen, 2016).
- 3 By saying that there is "no need" for concrete experiential features to be instantiated by belief-like imagination, we are not claiming that these features *never* figure in the imaginative process. We are simply stating that they are not essential, even though they do often contribute to the successful instantiation of the imaginative process.
- 4 An exception to this tendency is Goldman (2006): "I can imagine seeing a yellow parrot, feeling sad, feeling outraged, or feeling elated. It is also possible, no doubt, to imagine that one feels elated, which is equivalent to assuming the truth of the proposition "I am elated." But there is another way to imagine feeling elated, namely, to conjure up a state that feels, phenomenologically, rather like a trace or tincture of elation. [...] When we imagine feeling elated, we do not merely suppose that we are elated; rather, we enact or try to enact, elation itself" (Goldman, 2006, p. 47). However, his brief remarks are found in the broader context of making a case for simulation theory. Moreover, a large number of his further remarks about emotions and imagination mainly fall within the category of what we call E-Im, i.e. emotions as outputs of simulated states of affairs we imagine to experience (e.g. Goldman, 2006). We thus still lack a detailed account of how X-Im of emotions is supposed to work.
- 5 More on this aspect in the next section.
- 6 We do not commit to the process model wholesale. In particular, the process model might give us an overtly compartmentalized view of emotion generation and regulation. On this issue, Barrett and colleagues argue that "emotions are not unique mental states that are caused by dedicated mechanisms, to be modified by another set of dedicated regulatory mechanisms. Instead, emotions emerge, and regulation occurs, as the consequence of an ongoing, continually modified constructive process that makes sensory inputs meaningful." (Barrett et al., 2014, p. 448). We agree with this. We simply use the process model as an organizational scheme that is useful to identify relevant families of ER strategies and to highlight the importance of target states in some instances of ER. X-Im, as we will go on to argue, is one of those instances.
- 7 Of course, in the case of X-Im it is likely that there is a larger overarching goal, such as taking someone else's perspective.
- 8 In aiding the success of X-Im one could further perform bodily actions in strategically modulating physiological components associated with emotions such as breathing (e.g. fast, heavy), muscle tension (e.g. tensing, relaxing) and facial muscle activity (e.g. frown, smile) (Boiten et al., 1994; Esch et al., 2003; Niedenthal et al., 2005; Lewis, 2012; Davies et al., 2016).
- 9 Of course, with this, we do not aim to say that X-Im can *always* bridge the empathy gap with people with radically different perspectives. We are simply claiming that in principle it could and that it sometimes does.

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