

# The Volitive and the Executive Function of Intentions

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*Abstract:* Many philosophers of action, including Bratman and Mele, conceive intentions functionally, as executive states: intentions are mental states that represent an action and tend to cause this action. In the philosophical tradition (e.g. for Aristotle, Thomas Aquinas, Leibniz, Kant) another function of intentions, which may be called "volitive", played a much more prominent role: intentions are mental states that represent what kind of actions we want and prefer to be realised and thus, in a possibly rational way, synthesise our motivational, desiderative and perhaps affective as well as cognitive attitudes towards this action. This paper argues that intentions must fulfil both functions and then develops a concept of 'intention' that integrates both functions. One reason for including the volitive function in the definition of 'intention' is that only via this function the value of actions as such is realised, namely to enable the person, the kernel of the self to express herself and to control the world. Various forms of dissociation of the two functions are discussed and a proposal how to deal with such cases in the definition of 'intention' is developed.

*Keywords:* intention; functions of intentions; executive function; volitive function; dissociation of volition and execution; Michael Bratman; Alfred Mele

## 1. Two Functions of Intentions

Michael Bratman's book "Intention, Plans, and Practical Reason" [Bratman 1987] popularised – among other things – a certain functional view of intentions. According to this view, intentions are executive states, i.e. they are mental states that represent an action, tend to cause the represented action as well as guide and sustain its execution. Bratman was not the first who held this executive-function view – though older theories sometimes call the executive states "volitions". In 1976 Alvin Goldman had already defined 'volition' as a propositional attitude belonging to a class of propositional attitudes which have the tendency to cause an event which satisfies the attitude's propositional content [Goldman 1976, 68]. In 1984 Myles Brand introduced a definition of 'intention', according to which intentions are those states that proximally cause an action [Brand 1984, 174]. Adams [1986] defended the executive-function view as well. However, the idea is much older. Locke, for example, took volitions, i.e. intentions in the traditional terminology, to be exertions of our soul's capacity to initiate, to continue as well as to stop movements of our body by thoughts, which command the execution of these movements [Locke <1689> 2004, II,xxi,5]. Hume had an executive-function view of intentions, too. He defined 'will' as "the internal impression we feel and are conscious of, when we knowingly give rise to any new motion of our body, or new perception of our mind" [Hume <1739-40> 1978, II,3,1 (p. 399)].<sup>1</sup> So, although Bratman was not

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<sup>1</sup> Since "impressions", in Hume's terminology, are different from "ideas", where ideas comprise also belief

the first to hold the executive-state view of intentions he elaborated it and made it popular.<sup>2</sup> Since then, many philosophers have accepted this view [Adams 1994; 2007; Adams & Mele 1989; Adams & Mele 1992, 336; McCann 1995; 1998; Mele 1992, 72; 130; 136; 144; 162; 176; 180 f.; 192; Mele 2009, 692 f.; Mele 2010, 109]; and at present it probably represents a rather broadly accepted conception about the nature of intentions in philosophy of action.

The present (at the beginning of the third millennium) popularity of this view constitutes a rather radical and important change in philosophy of action because another function of intentions has played a much more prominent role in the philosophical tradition. This function may be called the "volitive" function. That intentions have a *volitive function* here shall mean: intentions are mental states that represent what kind of actions we want and prefer to be realised and thus express and synthesise our motivational, desiderative and perhaps affective as well as cognitive attitudes towards this action and its alternatives; and this synthesis is, or could be brought about, at least in part by deliberation. Many important philosophers in the tradition have conceived intentions as having a volitive function in a similar sense – thereby in no way denying but at least presupposing the executive function too, though considering it less in need of a philosophical examination. (To be sure, in the tradition, instead of using the word "intention", several of these philosophers spoke of "volitions" or "acts of will" but meant the same thing, often conceived of as mental events with a volitive and an executive function.) Some such classical conceptions of intentions with the volitive function are the following. For Aristotle the intention ("prohairesis") is "what has been decided on by previous deliberation" [Aristotle, E.N. 1112a, 15-17], where the deliberation is about a good means, which in last instance is an action, to a certain end. For Thomas Aquinas the will is the intellectual appetite [Thomas, S.T. I,82,2, ad tertium; I,82,5]. The intellect understands the good and the means to it; this understood good is the object of the will [Thomas, S.T. I,82,4]. The intention then is a (single) act of the will in regard to an end, which hence presupposes the order of reason to a certain end [Thomas, S.T. I-II,12,1, ad 3-4]. The crucial point of these conceptions with respect to our question is that Aristotle and Thomas do not conceive (will and) intention simply as

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states and knowledge [Hume <1739-40> 1978, II,1,1 (pp. 275-276)], according to Hume's definition, intentions cannot be beliefs. In his definition, Hume does not give a further phenomenological specification or reduction of the "internal impression" but identifies it only via simultaneous events ("the impression we feel ..., when ..."). Hence his definition is open to various empirical interpretations. The same holds for Locke's definition. One such interpretation could be Bratman's *sui-generis* view of intentions (cf. below, sect. 3).

<sup>2</sup> Although Bratman also popularised what I like to call the "*sui-generis* theory of intention", according to which intentions are not reducible to other kinds of propositional attitudes like desires or beliefs (cf. below) – a theory which is closely related to the executive-state view –, he was not even the first to propose the *sui-generis* theory of intentions. Gilbert Harman [<1976, 432; 436> 1997, 150; 154; 1986] and Raimo Tuomela [1977] presented the *sui-generis* thesis previously. So, how can Bratman's book [1987] stand for all these theories? A somewhat trivial answer is that Bratman dedicated the first monographic discussion to them. Some less trivial answers are that he provided, for most theorists, convincing arguments against eliminativist conceptions of intentions (like those of the Neo-Wittgensteinians and the early Davidson; Davidson himself later criticised eliminativism); Bratman offered good arguments against all reductive theories of intentions, and he developed a strong theory of the practical, executive and planning function of intentions, and of their binding force.

something that moves us to act but also, and necessarily, as something with a rational content. Leibniz mildly criticises Locke's definition of 'intention', which captures only the executive function (cf. above); Leibniz defines 'volition' in opposition to it as "the effort or tendency towards what one finds to be good and against what one finds to be bad, in such a way that this tendency results immediately from the apperception of the good and the bad" [Leibniz <1704> 1996, II,xxi,5; my, C.L., translation].<sup>3</sup> For Kant, as usual, a volition is an exertion of the will; and the 'will' is defined (in one of several variants) as: the capacity to act according to the representation of the laws, i.e. according to principles; and because the deduction of actions from laws requires reason, the will is practical reason. In humans the will is determined by a combination of reason and inclinations; therefore, the human will does not necessarily follow the dictates of pure reason – which, however, would be the autonomous and moral will. [Kant, Groundwork, BA 37-38 = IV 412] And similarly: The will is the capacity to determine oneself to action, according to the representation of (certain) laws [Kant, Groundwork, BA 63 = IV 427]. Expressed somewhat differently: The will is a form of causality of living beings inasmuch as they are reasonable [Kant, Groundwork, BA 97 = IV 446]; or: the will is the causality of reason to act in such a way that the principle of the actions corresponds to the essential feature of a cause of reason [Kant, Groundwork, BA 119 = IV 458]. Kant explicitly stresses the importance of the volitive function as compared to the executive function of the will: The will is "the capacity for desire considered not so much in relation to action (as the capacity for choice is) but rather in the relation to the ground determining choice to action", i.e. practical reason [Kant, MM, Doctrine of Right, AB 5 = VI 213; 1991, 42]. – All these philosophers were particularly interested in the volitive function of intentions because they took it to be the result of our practical deliberation, which they studied with the hope of improving it, making it rational and thus making the resulting action rational as well. This concern is also one of the central guidelines of the following considerations.

In order to make the following discussion somewhat more precise the two key concepts may be specified in this way:

$p$  is an *executive state* of person  $s$  iff: 0.  $p$  is a propositional attitude of  $s$  of the modal or phenomenological type  $\Psi$  with a future (even immediate future) behaviour  $a$  (action) of  $s$  or a proposition ' $a$  is  $R$ ' about such a behaviour as its propositional content; 1. and this type  $\langle \Psi, R \rangle$  is the same type as of those propositional attitudes of  $s$  are that serve as inputs and set point determiners of  $s$ 's executive system (this means: if  $s$  forms a propositional attitude of type  $\langle \Psi, R \rangle$  about a future and realisable behaviour  $a$  of  $s$ , this propositional attitude functions as the set point determiner for the executive system which actuates it to rather reliably realise that behaviour  $a$ ).<sup>4</sup> In short: executive states are set point determiners in a psycho-physical action-

<sup>3</sup> For the reader who is not familiar with Leibniz's "*Nouveaux essais*" ("New Essays Concerning Human Understanding") it might be helpful to explain that this book is organised as a dialogue between Philalethes and Theophilus and closely follows the single paragraphs of Locke's "Essay Concerning Human Understanding". Philalethes outlines Locke's position, Theophilus represents Leibniz's comments and further theoretical development. So we find the just cited definition in Theophilus's speech.

<sup>4</sup> A somewhat more formal but still rough definition is this:

generating mechanism.

*Explanations:* One idea behind this explication is that not every propositional attitude towards some of our possible future behaviour  $a$  can cause the respective behaviour  $a$ ; only propositional attitudes of a certain type – here abbreviated as " $\langle \Psi, R \rangle$ " – have this effect; and an executive state is precisely of this type. This formal definition leaves which of our various propositional attitudes are executive states open to further empirical identification. Modal or phenomenological types of propositional attitudes are types like believing, desiring, hoping etc., whereas the types designated by " $\langle \Psi, R \rangle$ " are more specific. What has been defined here is the analytical core of an executive state. This does not exclude that executive states have further executive functions like sustaining an action, guiding it, permitting coordination etc. However, these are not analytically necessary functions of executive states.

'Volitive state', on the other hand, may be specified (a bit more) as follows:

$p$  is a *volitive state* of the subject  $s$  iff: 0. again  $p$  is a mental attitude of  $s$  of a type  $\langle \Psi, R \rangle$  towards a proper future (even immediate future) behaviour  $a$ ; 1.  $p$  is selective, i.e. the subject  $s$  at the respective time has no other mental attitude  $q$  towards a proper controllable behaviour  $b$  that  $s$  holds to be incompatible with  $a$ , where this attitude  $q$  also fulfils the other conditions of this definition; 2. and  $p$  is a (procedural or with respect to its content) synthesis that integrates the subject's  $s$  pro-attitudes towards  $a$  and his information and considerations about  $a$  that are relevant for choice in a possibly rational manner; i.e. by weighing and deciding between these pro-attitudes and considerations,  $p$  is, finally, placed over them.

*Explanations:* The "*pro*"-attitudes in condition 2, as in common philosophical jargon, shall also include what would more precisely be called "contra-attitudes". The pro-attitudes analytically need not be desires, they may well be normative feelings, emotions or value judgements. The

$p$  is an *executive state* of the subject  $s$  if and only if:

0.  $p$  is a mental attitude of the subject  $s$  of some modal or phenomenological type  $\Psi$ ; the propositional content of this attitude is either a description ' $a$ ' of a future (even immediate future) behaviour of  $s$  or a proposition about such a behaviour: ' $a$  is  $R$ '. (I.e.:  $p = \Psi s, a$ ; or:  $p = \Psi s, (Ra)$ .) We can summarise this as:  $p$  is a mental attitude of some type  $\langle \Psi, R \rangle$  about the action  $a$ .

1.  $p$  is a state in an action-generating mechanism, i.e. a psychophysical cybernetic system with feedback control and the following properties:

1.1. the system contains an executive part, capable of realizing a range of controlled behaviour (realizing movements, exerting forces or causing mental events);

1.2. and the system contains a mental part, capable of forming attitudes towards the elements of the set of controllable behaviour;

1.3. and some of these attitudes, namely the attitudes of a certain type  $\langle \Phi, Q \rangle$  – with  $\Phi$  being a modal or phenomenological attitude type and  $Q$  being empty or being the main predicate of the attitude's propositional content –, are the set point determiners of this system in the sense that attitudes of this type  $\langle \Phi, Q \rangle$  towards some element  $b$  of the set of controllable behaviour of the mechanism, with a rather high reliability cause this behaviour  $b$ .

2.  $p$  is a mental attitude of the same type as the set point determiners of the action-generating mechanism, i.e.  $\langle \Psi, R \rangle = \langle \Phi, Q \rangle$ .

*information and considerations* could regard, among others, possible alternatives, the actions' consequences, obligations and other normative aspects. The pro-attitudes and considerations may also refer to opportunity costs of *a*, which properly are aspects of alternative options. That the volitive state is a *synthesis* of the pro-attitudes shall not imply that the person has actually run through them; it is sufficient that the subject has the impression that the executive state could be the result of such a detailed examination.

The *basic claim* of this paper is the *Two-Function Thesis*:

Full-fledged or real (implementation <sup>5</sup>) intentions have to fulfil both functions, the volitive and the executive function.

This thesis will be defended and elaborated in the remaining part of this paper.

## **2. Why Full-fledged Intentions Must Fulfil Both, the Volitive and the Executive Function**

Intentions can fulfil the volitive and the executive function simultaneously; i.e. one and the same mental state can be a volitive and an executive state at the same time. This holds because 'executive ...' and 'volitive state' are defined functionally, and the two functions are not mutually exclusive.

But why *must* full-fledged or real intentions have both functions – as my basic thesis says? The reason for this lies in the very nature of actions. The particular significance and importance of actions consist in the fact that, by acting, the psychic kernel of persons with its preferences and beliefs has the power to control – directly and, via predicted longer causal chains, also indirectly – (some parts of) the external, and eventually also our internal world, thereby bringing about what, hopefully, is good for the respective person. Intentions are the key elements in these processes: their volitive function represents the quintessence of what the psychic kernel of the person wants in this particular situation; their executive function, on the other hand, represents the power to control the world. Both functions of intentions are needed to fulfil this key position and to constitute actions. Intentions without executive function would be powerless desires; they would not enable us to control the world and would condemn us to remaining passive spectators, suffering from our unfulfilled desires. Intentions without volitive function, on the other hand, would be blind powers without a person behind them. We would not be the ones controlling the behaviour; we would "act" like a robot. And our "actions" or, more precisely, our controlled behaviour (if it were not completely organised by evolution) only accidentally would have any value for us, and in any case,

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<sup>5</sup> There are several types of intentions. In particular, we have to distinguish implementation intentions and goal intentions [Gollwitzer 1999], where goal intentions determine the goal to be reached but do not yet specify the details of the action, by which it shall be reached, in a way understandable to the executive system. Goal intentions are anchors for a further deliberation with the aim of specifying the action and forming an implementation intention, which is understandable to the executive system. Of course, only implementation intentions but not mere goal intentions have a (direct) executive function.

on the average, would have less value than the actions of a rational agent. So, a definition of 'intention' that tries to capture the practically pivotal position of intentions has to embrace both functions of intentions.

The importance of both functions has to be examined somewhat more closely. Intentions are an essential element of actions. The very value expressed in the concept of action, i.e. what we (at least intuitively) appreciate in actions, as opposed to mere controlled behaviour, is their function to make us, or more precisely our internal kernel, control the world – this is what makes up freedom and autonomy, at least in a rudimentary form. In order to truly represent *us*, our internal kernel, intentions must synthesise our various pro-attitudes, considerations and information regarding an action and its alternatives to one mental state, to one attitude towards that action. In addition, in order to be realised, this mental state must feature exactly one of the possible options at the person's disposal. And since our ways of synthesising our various attitudes also include or possibly include cognitive elements, there is room for forming a *rational* synthesis, a rational will or a will aspiring to what is good. These features of the volitive function realise at least a rudimentary form of freedom of decision, and they are the basis for the various aspects of the fully developed form of freedom of decision. That the volitive function synthesises the subject's various pro-attitudes, information and considerations regarding the action and its alternatives is at least a minimal form of freedom of decision conceived as authenticity. That the process of synthesis includes or possibly includes cognitive elements is the basis for a freedom of decision conceived as rationality or reason responsiveness. And both features taken together are the basis for a freedom of decision conceived as autonomy or realisation of the good. However, the executive function is required in order that all this does not remain some idle reflection and mere willing and that we have an influence on the world. The executive function then realises freedom of action (in Moore's conditional sense). Finally, in order that the kernel of our self and our rational faculties – and not some arbitrary element of our inner life – really have this influence on the world, the volitive state, which synthesises the attitudes of this kernel and contains the rational parts, must also have the executive function.

This conception also implies a straightforward reply to one of the standard objections to the causal theory of action. The objection says that when the causal theory equates actions with causal processes – the intention causes the action etc. – it conceives actions without subjects and without agency and cannot explain the subject's rational influence [e.g. Melden 1961, 128-130; Nagel 1986, 110-113; Velleman <1992> 2000, 123-124]. However, the ideas behind the Two-Function Thesis explain how agency of a subject can emerge from causal processes: By representing the person's kernel and synthesising its attitudes towards the actions under consideration, the volitive function of intentions furnishes this cause (i.e. the intention) of the represented behaviour with the qualities needed to express and represent the subject in full. The executive function then lends the power of a well-directed intervention into the course of the world to this synthesis – and thereby to the person.

To summarise: Our actions constitute a relation which goes from the self to the world – the self partially controls the world. The pivotal element, the hinge of this relation, is the intention,

which connects the two parts. Its volitive function represents and enables the authorship of the self; and its executive function makes up the controlling influence on the world. Therefore, we need both, the volitive and the executive function of intentions to have a full-fledged and, in the sense explained, valuable intention and a full-fledged, i.e. free, action.

This justification of the Two-Function Thesis is a practical justification. It shows why intentions with both functions are precious and much better than similar attitudes with only one of these functions. This practical justification is part of the methodological strategy of this paper, namely to explicate the concept of intention in such a way that the resulting definition captures (intensionally) what is valuable in the referent (or in the extension).<sup>6</sup> Of course, this method is different from and goes beyond trying to capture a common sense meaning (of the word which expresses the concept) or the philosopher's meaning or intuition.

### 3. Two Theories of Intentions as Mere Executive States – Bratman and Mele

All this, and the Two-Function Thesis in particular, seems to be so obvious that it is hard to imagine how it can be denied. However, a theory which holds that intentions are only executive states does exactly this. So this view has to be considered. In particular, I will discuss Bratman's and Mele's versions of such a theory.

Bratman's most important ideas about our subject can be summarised in the form of four theses:

*B1. Indispensability of intentions (anti-eliminativism):* Intentions play a central role in explaining action, insofar as intentions are a necessary element for causing, sustaining and guiding actions, etc. [Bratman 1987, 2; 8; 11; 28; 30; 33 f.; 107].

*B2. Intentions as Executive States:* Intentions are (defined as) executive states, i.e., according to Bratman's own descriptions, they are mental states that represent an action and tend to (and mostly) cause the represented action, and guide and sustain its execution [Bratman 1987, 16; 108; (110)].

*B3. Uniqueness of Intentions:* The (executive) role of intentions cannot be played by other mental states like desires, beliefs, desire-belief pairs or value judgments, in particular optimality judgements [Bratman 1987, 8; 11; 18 f.; 22; 32; 37 f.].

*B4. Intentions as Attitudes sui generis (irreducibility of intentions):* Intentions are mental attitudes in their own right, or *sui generis*, i.e. not reducible to other common mental attitudes like beliefs, desires, or desire-belief pairs [Bratman 1987, 10; 20; 110].

Indispensability of Intentions (B1) is Bratman's, by now nearly uncontroversial, point of departure against an action theory that does not provide for intentions, like a desire-belief theory of action. I think, too, that B1 is true, whereas I want to argue that the other three theses are false, or

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<sup>6</sup> This piece of method is part of a more comprehensive philosophical method and theory, which I have called "idealising hermeneutics". For a detailed description see: Lumer 2012.

more precisely, because they all are highly ambiguous, that their most common interpretations are false.

The Intention-as-Executive-States thesis (B2), without the first parenthesis, can be understood as an analytical or empirical thesis, and the word "are" may be interpreted as the copula or as the predicate for the identity relation. It is not completely clear which interpretation Bratman has in mind, probably the analytical identity. I think, according to the common usage of the word "intention", it is indeed analytically true that *one* function of (implementation) intentions is to control actions. However, what has been said in the first two sections of this paper is a strong argument against the analytical *identity*; intentions have also the volitive function.

There seems to be an analytical argument for the Uniqueness-of-Intentions thesis (B3): If intentions, desires, beliefs, value judgements are all defined as functional notions then they have different analytical functions. This implies that desires, beliefs, etc. as such do not have the analytical function of intentions. So far so good. However, this does not imply that desires, beliefs etc., apart from their analytical function, cannot fulfil other functions as well.<sup>7</sup> Bratman does not deny that intentions can have several functions. In principle this should, however, also hold for the other types of attitudes (desires, beliefs, value judgements). What would be important in an alternative approach, though, to prevent these attitudes from generally collapsing into intentions is that only a certain subset of attitudes of such a different type are intentions.

That intentions are irreducible attitudes *sui generis* (B4), again can be an analytical or an empirical thesis.

*B4.1 (Analytical interpretation) Definition of 'sui-generis intention':* 'Intention' is a taxonomic notion, referring to certain mental attitudes that are not reducible to other common mental attitudes.

*B4.2 (Empirical interpretation) Empirical Sui-generis Thesis:* Functional intentions (executive states) are (as can be found out by observation) *sui-generis* intentions in the just (B4.1), taxonomically defined sense [Bratman 1987, 10; 20; 110].

Most likely Bratman holds both theses. One of his innovations in action theory was to introduce "intention" also as taxonomic notion (B4.1) – "taxonomic" in the sense of biological taxonomies: We empirically study and try to classify the various mental attitudes into a complete system of not-overlapping classes according to their phenomenological qualities, their propositional contents, and their functions. Bratman maintains that there is such a taxonomic class of mental states along, and on a par, with beliefs, desires, emotions, feelings, moods, perceptions, etc.; and this kind of states is called "intention". So, Bratman uses the term "intention" in two meanings, the taxonomical meaning (attitude *sui generis*) and the functional meaning (executive state).

Introducing the taxonomic notion of a *sui-generis* intention makes sense only if this notion is not empty. And if these *sui-generis* intentions had been "observed" during the initiation of

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<sup>7</sup> McCann has shown that several other mental states in principle can fulfil many functions of intentions [McCann 1995, 575-582].



actions, the Empirical *Sui-generis*-Thesis would be straightforward; and this is what Bratman seems to believe [Bratman 1987, 10; 20; 110].

However, *sui-generis* intentions have not been "observed"; they do not seem to have a distinct phenomenal quality; they feel more like beliefs – occasionally accompanied by emotions or feelings such as determination. Bratman's arguments in favour of their existence (i.e. B4.2) are indirect, theoretical – e.g. of the form that mental attitudes of this or that other phenomenal type do not have a certain feature of intentions. The Empirical *Sui-generis* Thesis can be attacked in the same way: The main problem of *sui-generis* intentions is that they cannot fulfil the volitive function of intentions. They are just executive. Taxonomic intentions as such are not preferences, desires, volitions, etc. and do not contain or express such pro-attitudes. In addition, and again precisely because of their taxonomic autonomy, they are isolated and disconnected from other mental states that are such pro-attitudes; there is no intuitive kind of "logic" that relates them to pro-attitudes. More specifically, *sui-generis* intentions as such are not the result of practical deliberations (if there were any) and are completely cut off from these deliberations; their format is completely different from the attitudes making up deliberations, namely desires and beliefs.<sup>8</sup> Therefore, actions on the basis of such intentions would not have the advantages outlined in the first two sections of this paper, i.e. that the kernel of our self controls the world through actions caused by intentions, which are also emanations of practical rationality. In Bratman's theory intentions come out of nothing, and, therefore, they can neither be rational nor realise our practical autonomy, they simply remain unexplained.<sup>9</sup> A similar problem holds for goal intentions – if these are intended to be of the same

<sup>8</sup> This is not to say that intentions are always based on deliberation; of course, they can be spontaneous. The argument, primarily, says only: *if* there is a deliberation its result cannot be a *sui-generis* intention. However, secondly, even in cases of spontaneous decisions intentions emerge from desires and beliefs about the desires' possible fulfilment, express these desires and beliefs and thus are volitive, though not in a very elaborated way – I spontaneously intend to scratch and do so because I want to get rid of an itch and believe (though not occurrently) that scratching probably will have this effect –; but *sui-generis* intentions would not capture the volitive nature even of these spontaneous intentions because, precisely as a consequence of their being *sui generis*, they are isolated from any other practically relevant subjective state.

<sup>9</sup> Of course, also Bratman wants intentions to be rational and at least accessible to rationality requirements. He stresses especially the requirement that various intentions should be consistent with each other [Bratman 1987, 9; 31; 109] and that goal intentions are reasons for implementation intentions [ibid. 24; 27], but he takes desires and beliefs to be reasons in the decision process too [ibid. 24; 35; 43-44] and wants to integrate all these considerations as reasons into a rational deliberation [ibid. 85]. In addition, Bratman takes it for granted that beliefs, desires and pro-attitudes in general in some way influence intentions and actions [ibid. 15 f.; 35], that pro-attitudes motivate to actions [ibid. 15 f.] and that practical reasoning issues in intentions [ibid. 17; 108 f.]. However, the problem is that his – rather rudimentary – action psychology does not explain how we could achieve the desired forms of rationality, i.e. how the subjective reasons could have any effect on the *sui-generis* intention, and how (which kind of) reasoning leads to (which type of) intention. His action psychology simply does not provide or even at least indicate psychological laws that connect the just mentioned states (various forms of desires and beliefs, etc.) with *sui-generis* intentions. Hence it cannot even explain how, after having recognised (which is a belief state) that two of our intentions collide, we can use this belief for making the intentions coherent. Bratman seems to suppose that the usually assumed steps of deliberations (making out possible options, looking for their relevant consequences, evaluating them, etc.) simply terminate in the *sui-generis* intention. This would be strange and hardly possible, however. The semantic content of the

separate phenomenal type as implementation intentions –: One of their essential functions is to provide a benchmark for a deliberation in search of a suitable implementation intention; if they had a format completely different from the attitudes making up the deliberation they would remain external to the deliberation. In order to be able to have their benchmark function they would have to be "translated" into the format of one of the deliberation attitudes.<sup>10</sup>

Mele has tried to resolve some of these problems by complementing Bratman's Empirical *Sui-generis* Thesis (B3.2) with some hypotheses about empirical laws that connect *sui-generis* intentions to other mental attitudes [Mele 1992, 228-240]. The most important of these hypotheses is that optimality judgements about one's own actions by default cause *sui-generis* intentions to execute these actions [ibid. 228-232].<sup>11</sup> This hypothesis implies an important structural suggestion with respect to the two functions of intentions emphasised in the preceding sections. According to Mele's theory, the volitive and the executive part of intentions would not reside in one and the same mental state but in two states that are closely connected by a causal relation. I will call this the "*ontological dissociation* of the two functions of intentions".

Mele's complement is an important improvement of Bratman's theory. However, many problems remain unsolved. First, taxonomical intentions are ballistic; once the optimality judgment is formed then the taxonomical intention will be caused too, and there seems to be no way to influence it; it is like a bullet that flies its way once shot off. Actually, however, we can and do change our intentions after having changed our judgements about what would be the best course of action. Furthermore, intentions can be more or less resolute. It is unclear which feature of *sui-generis* intentions corresponds to this quality. (The theory that optimality judgements about proper actions are already intentions can easily explain this: the resoluteness is identical to the judgement's degree of certainty.) Finally, if the ontological dissociation thesis were true the optimality judgements would completely control the *sui-generis* intentions. In that case, two questions arise.

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deliberation's conclusion is – in Davidson's terminology [Davidson <1978> 1980, 98 f.; 100-102] – an all-out judgement or, according to my conception [Lumer 2005], an optimality judgement (that some option *a* is the personally best). However, this semantic content in Bratman's picture is not preserved and semantically expressed anywhere; there is only the *sui-generis* intention, which at best functions as a frozen indicator of this content. Furthermore, if, e.g. in case of new information about further options or consequences, we should revise our intention, a Bratmanian agent would either remain stuck with that frozen indicator, which, as a mere indicator, is not open to epistemic revisions, or she would have to treat it exactly like an – as such epistemically revisable – all-out or optimality judgement, so that the *sui-generis* intention would only be such a judgement in disguise. The general problem behind all these difficulties is that *sui-generis* intentions are just psychologically isolated from all the other mental states that influence decisions.

<sup>10</sup> Further criticisms of the Empirical *Sui-generis* Thesis are provided in: Lumer 2005, 241.

<sup>11</sup> Apart from these proposals, Mele sees as one of the characteristic, though not necessary, functions of intentions that they put a proper end to practical reasoning [Mele 1992, 138-140; 2009, 692]. Though this thesis *prima facie* may look like an assertion that intentions are bound to and synthesise the results of practical deliberation, this is not what the thesis says. It says only that when the intention is formed, therewith the practical reasoning is terminated; what the agent will attempt is settled; hence there is no need to deliberate any longer. In any case, however, this function, according to Mele, is not necessary for having an intention; there are many intentions which are not preceded by a practical deliberation [Mele 1992, 139].

First, why would there be any need for these *sui-generis* intentions? From an evolutionary standpoint they would be completely superfluous, the optimality judgements could directly be the set point determiner for the executive part of our action-generating mechanism; this speaks against the existence of *sui-generis* intentions. Now, in living beings there are some features or items which are superfluous with respect to survival, and have not been erased by evolution. However, such features or items are relatively rare, so that the evolutionary superfluity of possible *sui-generis* intentions makes their existence rather unlikely. So, demonstrating this superfluity is not a knock-down argument but an argument of medium strength against the existence of *sui-generis* intentions. Second, even if there were such a *sui-generis* intention the optimality judgement, according to the definition given in section 1, would already *be* an executive state that controls the external behaviour by causing the *sui-generis* intention, whereas forming the *sui-generis* "intention" would already be the first step of execution.

#### 4. The Dissociation Problem

According to the ideas presented in the preceding sections, the definition of '(implementation) intention' seems to be straightforward: Implementation intentions are mental states that are volitive and executive. This would imply that mental states not fulfilling one of these functions would not be (implementation) intentions. However, there may be cases of dissociation between the two functions that give rise to doubts about this definition.

There are two main forms of dissociation. The first form is *causal dissociation*. There is a certain kind of mental states that usually fulfils both functions. Both functions, however, are defined by the causal role the respective states play. (For the volitive function it is to integrate the various pro-attitudes and thus to be caused by them via a more or less complicated mechanism of integration; for the executive function it is to cause or at least to initiate the execution – which does not exclude that the execution is subsequently interrupted.) One or both causal chains, now, may be cut off (and not only interrupted) by accident or other unfortunate circumstances. Certain forms of posthypnotic instructions, where the hypnotiser gives an order to execute a certain action later on and the hypnotised subject executes this instruction after the hypnosis, *prima facie* may be *losses of the volitive function* because during the interim period, the subject seems to have the executive intention to carry out the instruction, which, however, has not been formed on the basis of her pro-attitudes. Another, more fantastic example would be hybrid creatures of a Brave New World type, created to serve their masters irrespective of any personal concern; so, if their masters say "do this!" then they immediately form the respective executive intention. Cases of the locked-in syndrome, on the other hand, *prima facie* are *losses of the executive function*: as a consequence of a terrible trauma, the brain loses every or nearly every afferent and efferent contact with the rest of the body so that it no longer has any sensory perceptions or behavioural control of the body. The person may form "intentions" without any executive effect. (In the usual cases of executive accidents like forgetting the intention, akrasia etc., the executive function exists but it does not work properly.)

The other form of dissociation of the volitive and the executive function is *ontological dissociation*: both functions are fulfilled but they are realised by different mental states which, however, empirically are closely related and covary rather strictly. Mele's model of *sui-generis* intentions that are often caused by optimality judgements describes such a form of dissociation.

Before discussing the consequences of possible dissociation for the definition of 'intention' let us briefly consider the real existence or possibility of dissociation. With respect to the ontological dissociation, in the preceding section I have already advanced strong empirical objections to the hypothesis that mere executive states, in particular *sui-generis* intentions exist (in normal cases in normal people). However, these objections do not amount to a rejection of a logical or analytical possibility of such cases. Thus, for a definition that shall also cover intentions in non-human beings, e.g. aliens or future beings created by genetic or other technological manipulation, it would be wise to reckon with the possibility of ontological dissociation. – Apart from the hybrid beings, the other examples of *causal dissociation* are real examples, which, of course, have to be taken into account in a definition of '(implementation) intention'.<sup>12</sup>

## 5. Dealing with Dissociations in the Definition of 'Intention'

How should the possible dissociations be dealt with in defining '(implementation) intention'? Let us consider *causal* dissociation first. The case of the hybrid beings who never had any volitive states combined with their executive states clearly runs counter to the arguments advanced above (in section 2) in favour of intentions as necessary combinations of volitive and executive states. Accordingly, the hybrid beings' executive states would not be intentions, and neither would the

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<sup>12</sup> I have presented posthypnotic "intentions" as paradigm of an executive state without volitive function. This is at least a nice armchair example. However, the reality may be different. Posthypnotic "intentions" empirically exist and are efficacious. But an open question is whether the volitive function is really missing. Reading about hypnosis and speaking with people who practice it, unfortunately, I could not determine the phenomenological status of the hypnotically induced disposition to execute the instruction. However, the hypnotisers did stress that people are very differently prone to hypnosis, that their eventual acceptance of instructions depends completely on their trust in the hypnotiser and that instructions that go strongly against the subject's convictions would not be accepted. There is also the well-known fact that after having executed the posthypnotic instruction subjects who additionally have been instructed to forget the act of instruction tend to explain their actions by rationalisations. These phenomena speak against an interpretation of posthypnotic instructions as orders that the subjects accepts like a robot and directly transforms into mere executive intentions. A quite better interpretation may be in terms of optimality judgements. The fact that subjects trust in their hypnotiser means that they believe that the hypnotiser probably will do something good and definitely not harm the subject. So, if the hypnotiser gives the subject an instruction she may believe this to be optimum for herself even though she does not know a direct justification for it. Hence, the optimality judgement is based on an argument from authority only but it has its volitive function: it is a pro-attitude itself and is believed to integrate all the other pro-attitudes about the options to the subject's best. The difference with respect to usual decisions on the basis of arguments from authority, e.g. when children follow their parents' orders without understanding the rationale for the orders, would be, however, that after having carried out the instruction or order, the hypnotised subject (whose memory of receiving the instruction is extinguished) is not aware of the judgement's origin and, therefore, confabulates her reasons.

armchair cases of posthypnotic instruction. The same would hold for volitive states that never had any executive function. The case of the locked-in syndrome is different. Here the problem seems to be not the lack of an executive function of the intention but a temporary or definite loss of a formerly existing function of the *executive* system, due to a dysfunction. Therefore, in such cases we might say: if there are phenomenal states of a kind that originally had (or in other beings usually has) the volitive as well as the executive function these states are still intentions even if the executive function has been lost. This may be taken as a consequence of a rather broad interpretation of the above [in section 1] definition of 'executive state', which requires only that an executive state is of the same phenomenological type as those states that normally serve as inputs and set point determiners of the executive system but not necessarily that this state in the present case causes the execution.

With respect to a possible *ontological* dissociation of volitive and executive states the following holds: If there is no ontological dissociation the rules just explained apply. If, however, volitive and executive states ontologically dissociate but are nevertheless closely connected – as in Mele's model – then there are four main strategies for defining 'intention' in light of the requirement that intentions fulfil both functions.

1. *Only states with both functions:* Only states that fulfil both the volitive as well as the executive function are intentions. Hence in case of an ontological dissociation there would not be an intention.
2. *Unity of both states:* In case of an ontological dissociation the unity of the tightly connected volitive and executive state is the intention.
3. *Only the executive state:* In case of an ontological dissociation the executive state is the intention if it emerges from a corresponding volitive state.
4. *Only the volitive state:* In case of an ontological dissociation the volitive state is the intention if (in normal cases) it directly causes a corresponding executive state.

An example might be helpful to clarify these possibilities. Because I do not think that ontological dissociation of volitive and executive states exists in humans this example has to be fictional. Martians are beings roughly as conceived in Mele's theory: They decide about actions by means of volitive optimality judgements, which, however, have no (direct) executive function but, normally, cause executive states. Martians' executive states feel similar to the phenomenal states we are in when we give an harsh order, and their propositional content is the respective action description; Martians call these states "self-commands". Martian science has found out that self-commands are relics of an evolutionary older decision system, which did not rely on optimality judgements but on rather fixed and to a great part innate rules, where the final self-command, being the command understandable to the executive system, had an executive function, which is still preserved in the new decision system on the basis of optimality judgements.

Let us briefly discuss these possibilities:

1. *Only states with both functions:* To acknowledge only states with both the volitive and the executive function as intentions is a puristic strategy. In a world with ontological dissociation it

would exclude too much of what is sufficiently close to the ideal from being an intention. For instance, since neither optimality judgements nor self-commands fulfil both the volitional and the executive functions in the Martian world, according to the first definition strategy, Martians would not have intentions – even though their decisional states are at least very close to what we consider as intentions; to deny that they have intentions would be arbitrary and only the result of some technical definitional detail. So, this first type of definition would be rather narrow, too narrow, indeed. The following three definitions are all more liberal in this respect as they also allow intentions in cases of ontological dissociation. In this respect the three remaining approaches are on a par. So further considerations should decide between them.

2. *Unity of both states:* To take the unity of the volitive and the executive state – in Martians the unity of an optimality judgement and the corresponding self-command – as the intention, on the one hand, comprises everything which is necessary for the existence of the intention in the intention itself. This advantage, however, is not so strong because it may be sufficient to require these necessary conditions as *conditions* and not as *parts* of the intention. On the other hand, the unity of two separate events or states may cause some problems for the determination of causal relations and of the intention's time: We could no longer truthfully say 'the intention caused the action', because, more precisely, it would be only the executive part of the intention (the Martian self-command) that caused the action; analogous considerations hold for saying 'the intention was caused by / the result of an intensive deliberation'. And if we say 'she formed her intention at time *t*' it would be ambiguous if this refers to the forming of the volitive or of the executive state (the optimality judgement or the self-command). Because of such problems, it may be better to identify the intention with *one* state.

3. *Only the executive state:* An argument for declaring the executive states that emerged from volitions to be intentions – i.e. in the Martian case only the self-commands<sup>13</sup> – would be that since the executive states already arise from volitions and add the executive function to them they comprise everything important for an intention. However, an objection to this proposal is, first, if the volitive and the executive state dissociate – as in Martians – and the volitive state controls or determines the executive state then the volitive state *is* already executive, whereas e.g. the *sui-generis* intention is already the first element of the execution process itself; in the Martian world this means the optimality judgement is already executive and the self-command is already part of the execution process. Mere executive states are translations of the volition into a first grade machine code that is still mentally accessible. Second, apart from their function, mere executive states (e.g. Martian self-commands) are not pro-attitudes in the strict sense; they do not express that

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<sup>13</sup> Possibility 3 is rather close to what Mele proposes. The differences, however, are: (i) Mele assumes that subjective optimality judgments about one's proper actions are usually followed by an intention but he does not hold that every executive state is preceded by an optimality judgement. (ii) Furthermore, Mele takes the executive states alone to be the intention – even if they have not been caused by an optimality judgement. So the differences between Mele's and my approach are that Mele presupposes ontological dissociation, which I deny, and that he proposes something closer to strategy 3, whereas I opt for strategy 4; what he proposes is only *near* strategy 3 because he, like Bratman, takes directly executive states to be intentions without requiring that they have be brought about by volitive states, which, however, is the main concern of the present paper.

the subject is desideratively or emotionally or otherwise deliberately bound to the action to be executed. Therefore, mere executive states fulfil a volitive function only in a very, very broad sense, if at all.

4. *Only the volitive state:* The argument advanced against taking the executive states as the intentions, of course, is a straightforward argument for taking the volitive states as the intentions – in the Martian case it would mean taking the optimality judgements to be intentions. If volitive states (normally) also cause the executive state they *are* in a certain sense executive above their volitive function: they are *indirectly executive* – by normally and rather reliably causing a respective mentally accessible machine code which is a directly executive state. According to this terminology, Martian optimality judgements are indirectly executive, whereas Martian self-commands are directly executive. One might think that an analogous argument holds for the directly executive states: since they arise from volitive states and thus comprise them they are also, in a weak sense perhaps, volitive states. However, they are not; mere executive states, as just said, are not pro-attitudes in a somewhat strict sense, and they are not the last step of making up one's mind about the options at hand. So there is an asymmetry here: Mere executive states that arise from volitions are not volitive, whereas mere volitive states that reliably cause executive states are already executive. This asymmetry is also reflected in the different informational content of the two types of states. For instance, returning to our Martian example, optimality judgements are informationally much richer than the self-commands because the former but not the latter synthesise information about the possible options as well as about action consequences and the application of complex axiological decisional criteria. If the self-command (the directly executive state) is regularly ontologically dissociated from the volitive state, its function seems to be more technical and hence subordinate, namely to translate the decision already made into a machine code or signal understandable to the executive system and to keep the decision present for further purposes. So, if as philosophers of action, we have to establish which of the two types of states shall be intentions, in accordance with the main idea of this article that intentions are volitive as well as executive states, we should take the optimality judgements, i.e. the volitive and only indirectly executive states, to be the intentions because they by themselves represent more of what a full-fledged intention has to comprise. These are strong arguments for choosing the volitive states as the implementation intentions in cases of ontological dissociation. – There is another argument for this definitional strategy: uniformity of definitions. Apart from the implementation intentions, goal intentions also need to be defined. Goal intentions have two essential functions: the first is, again, a volitive function, the second, however, is not execution but to cause a deliberation that leads to implementation intentions. But, dissociations may arise here too; and now one could stick to the just proposed strategy to declare the volitive part, if it tends to cause the deliberation, to be the goal intention. Alternatively, taking up strategy 3, in the case of implementation intentions one would have to take the (directly) executive states and in the case of goal intentions the deliberation provoking states as the intention. Thus there would be less uniformity.

The definition of 'implementation intention' then is straightforward:

$p$  is an *implementation intention* of person  $s$  iff  $p$  is a volitive and an (at least indirectly) executive state of  $s$ .

The details of this definitional decision may be debatable. However, what is less debatable and important for capturing the essential function of intentions and actions is that only the combinations of volitive and executive states are implementation intentions. Mere executive states are not yet intentions.

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