



*Philosophical Frontiers*  
ISSN 1758-1532  
Vol. 3, Issue 2 (2008)  
pp. 1 -

## Free Action as Two Level Voluntary Control

**John Dilworth**  
Western Michigan University

**ABSTRACT:** The naturalistic *voluntary control* (VC) theory explains free will and consciousness in terms of each other. It is central to free voluntary control of action that one can control both what one is conscious of, and also what one is not conscious of. Furthermore, the specific cognitive ability or skill involved in voluntarily controlling whether information is processed consciously or unconsciously can itself be used to explain consciousness. In functional terms, it is whatever kind of cognitive processing occurs when a conscious state is voluntarily chosen. This leads to a bivalent view of cognitive processing in which there is voluntary choice either of non-routine (conscious) or routine (unconscious) kinds of processing. On this VC account, consciousness could not exist without its being possible to voluntarily choose a non-routine kind of processing.

But what makes voluntary choice itself possible? The VC theory appeals to the evolutionary inadequacy of a purely low level routine/non-routine (RN) control system that lacks voluntary control. A two level causal system in which a sophisticated upper voluntary level controls the lower RN system offers much more explanatory power and evolutionary fitness. Since the upper level is partly causally independent of the lower level, its decisions are not determined by the lower level--hence free voluntary control is possible. So both consciousness and free voluntary control must have evolved together.

**S**ome fundamental philosophical issues might best be resolved together, in a manner initially describable within the compass of a short article. Arguably free will, voluntary action, control, agency, personhood and consciousness are thus treatable, using no ontological concepts beyond those involved in explaining two levels of evolutionarily constrained causation.

The basic idea is a straightforward one involving no exotic concepts, as follows. Primitive or low level organisms function at a low level of causation that maintains a minimally adequate level of evolutionary fitness for surviving species that employ it. More advanced organisms, including humans, achieve a further increment of evolutionary fitness by co-opting or reusing--in a kind of evolutionary exaptation--causal mechanisms and data structures in the lower level, so that an upper level of causal organization is also involved. It is this upper level that we associate with our intuitive concept of free voluntary action. Because of the additional causal roles associated with the upper level, its principles of causal organization are not reducible to--even though they are partially dependent on--those of the lower level.

Consequently, our intuitive sense that our voluntary acts are freely chosen by ourselves, and that they cannot be fully explained in purely causal terms, is partially defensible, in that our conception of causal explanation is normally derived from the relatively basic causal organization of the lower causal level, rather than from the more flexible upper causal level associated with voluntary action. Admittedly, overall this is still counts as a fundamentally compatibilist, rather than a purely libertarian, attempt to resolve the free will problem, but it is sufficiently different from more standard compatibilist approaches that it can satisfy some quite strong libertarian intuitions, such as those of Searle<sup>1</sup> supporting causal gaps between prior psychology and current decision-making. The present account will simply be called the *two level* (TL) account of free voluntary action.

## 1. A Vehicle/Operator Analogy

A simple model or analogy for the current two level (TL) account of free voluntary action is provided by cases in which an operator voluntarily controls a complex vehicle. Clearly the voluntary actions that the operator is able to perform by use of the vehicle, such as driving along a highway or flying long distances, cannot be completely causally explained in terms of the causal organization of the vehicle alone, because the distinctive causal contribution of the operator's own voluntary actions must also be taken into account. But nor can the operator's voluntary actions be completely explained in terms of her own internal causal structure alone either, because without the vehicle she would be unable to carry out those voluntary actions that she performs by operating it. Hence a full account of the causal workings of voluntary actions by vehicle operators must include both an account of the lower level causal organization

---

<sup>1</sup> Searle (2001).

of the vehicle itself, as well as an account of the upper level causal organization of the operator who controls it.

This model potentially provides a viable analogy for human voluntary action itself, because the human body and its cognitive system, along with all of its basic, pre-voluntary causal structure, can itself be regarded as a kind of vehicle that is thus voluntarily controllable by the person who operates it. As long as such a person's voluntary action is exclusively explained in terms of a single upper causal level, whose own causality, and its relations to the lower causal level, is explained in purely causal ways that are independent of the concept of voluntary action, at least a minimally adequate and consistent explanatory structure would have been achieved that conforms to the two-level TL theory outline.

## 2. What Else is Required in an Adequate Two Level Theory?

The two-level causal structure discussed so far for the two level (TL) theory of free voluntary action is very minimal. Arguably there are other constraints on any even minimally plausible two-level theory capable of capturing some standard libertarian intuitions about free action. Two of these are traditionally grounded, while one is an additional empirical constraint that arguably holds for any substantive theory of the interaction of distinct causal levels.

To begin, here is a brief description of the two traditional constraints and their relevance. First, libertarians typically assume that free voluntary actions are cases in which the *agency* of a particular *person* is involved. So an adequate TL theory must either explain what personal agency for voluntary actions involves, in terms of the TL theory itself, or appeal to some independent account of personal agency that is consistent with the TL theory of voluntary action.

Second, any adequate TL theory must somehow come to terms with issues concerning consciousness. It might be thought that the issue of consciousness could be marginalized as the relatively peripheral issue of whether our subjective conscious experience of freedom of choice is veridical or not. On that conception, the nature of consciousness itself is not germane, for all that is at issue is whether the content of a belief in freewill is correct.

However, any adequate TL theory aspiring to a libertarian style of explanation must also have some means of addressing recent cognitive science challenges--such as those

of Libet<sup>2</sup> and Wegner<sup>3</sup> - to claims concerning conscious decision-making (see section 6 for more details). These and other authors provide evidence that many actions are initiated prior to any conscious awareness of a decision to act. So any adequate theory of voluntary action must not link it too closely with conscious decision-making as such. A scientifically acceptable theory must allow for the possibility of at least some unconsciously initiated voluntary actions as well. At the same time, a more positive conception of the role of consciousness in decision-making generally must also be supplied, if libertarian intuitions are to be supported. Mere unconscious mechanistic decision-making could not explain free human conscious choice in paradigm cases, so at least some initial view of consciousness consistent with the TL theory is required.

Turning now to the non-traditional, empirical constraint on an adequate theory mentioned earlier, it is simply that any substantive scientific theory of the interaction of distinct causal levels--as postulated by the TL theory--must be specific enough to be empirically testable, and initially plausible enough to be worth the effort of attempting to test it. Though arguably it is philosophically interesting to demonstrate the conceptual possibility of viewing voluntary action as involving two causal levels, the idea will not support libertarian intuitions, nor scientific theorizing, unless it is also empirically plausible. Indeed, this point is similar to that made above about empirical constraints on theorizing about consciousness. In both cases, a significant potential for conformity with empirical evidence is required.

### 3. An Outline of the Current Two Level Theory

Recall from the introduction that, according to the two level (TL) theory to be developed, primitive or low level organisms function at a lower level or level of causation that maintains a minimally adequate level of evolutionary fitness for surviving species that employ it. Then the TL hypothesis is that more advanced organisms, including humans, achieve a further increment of evolutionary fitness by co-opting or reusing--in a kind of evolutionary exaptation--causal mechanisms and data structures in the lower level so that an upper level of causal organization is produced. It is this upper level that we associate with our intuitive concept of free voluntary action. Because of the additional causal roles associated with the upper level, its principles of causal organization are not reducible to, even though they are partially dependent on, those of the lower level that it partially co-opts. As a result, voluntary

---

<sup>2</sup> Libet (2002).

<sup>3</sup> Wegner (2002).

control of the lower level potentially could be achieved via the operations of the upper level.

On this TL conception, free deliberation about what to do in a situation would involve upper level manipulation of lower level data and causal structures. Since the upper level operations are not completely causally determined by the causal structures of the lower level, potentially such cases of deliberation could count as cases of genuine deliberation, i.e., cases whose outcome is not completely determined by the lower level data and structures that are thus manipulated by the upper level. Nevertheless, on the current TL conception it is not being denied that the causal operations of the upper level are deterministic to the same extent--whatever it may be--as those of the lower level. It is this feature which ensures that the TL account remains a fundamentally compatibilist account of free will.

Here are some more details of the TL theory. In order to give the theory some substantive empirical content, I shall assume that both the lower and upper levels qualify as *control* structures, in the sense that their operations can be given some substantive explanation in terms of the organization or control of some fundamental cognitive variables. For example, traditional cybernetic theories of control assume that organisms operate by maintaining an overall *homeostasis*--a preservation of primary variables within a narrow range of acceptable limits--under varying environmental conditions, with control being achieved by feedback systems etc.<sup>4</sup>

My own postulated control structure is a much simpler, though equally basic one, which is specifically geared to the explanation of voluntary conscious control. It is based on a distinction between *routine* and *non-routine* processing--or, in more technical cognitive science terms, between algorithmic, versus non-algorithmic or heuristic, computational processing. The basic idea is that on the lower causal level, evolutionarily fit species of lower organisms would tend to be those that have achieved control of an adequate balance between routine and non-routine kinds of processing of environmental data.

Routine or algorithmic processing is fast and efficient, and hence it is to be preferred when it can produce acceptable results. But in more complex situations in which routine processing would tend to fail, non-routine or heuristic processing methods would often be required instead. Such processes are much more computationally intensive than routine algorithmic processes, and hence, because of their extra processing costs, they should be used by a species only when absolutely necessary. So in evolutionary terms, successful species would tend to be those that have achieved an adequate level of control over their use of routine versus non-routine

---

<sup>4</sup> Wiener (1965).

processing resources under a wide variety of conditions. This concludes my basic account of the control by organisms of their lower level, pre-voluntary processing resources, as explained in terms of bivalent, pre-voluntary control of routine versus non-routine processing methods.

Turning now to upper level issues, my substantive empirical hypothesis is that the upper causal level functions via a re-use or co-option of aspects of that same lower level routine versus non-routine control system. As for where this co-option or exaptation process occurs in evolutionary history, my guess is that the lower level pre-voluntary control system as described above reaches a kind of evolutionary plateau at some point, so that any further improvements in evolutionary fitness required a two level causal structure. Arguably the lower level pre-voluntary control system is a purely reactive, externally driven or exogenous control system that lacks any sophisticated conceptual or representational capacities of the kinds that we associate with higher cognitive activities and voluntary action. So probably we should look to the first primitive inception of such broadly representational capacities, and the potential improvements in evolutionary fitness that they make possible, for the beginnings of upper level voluntary control. The next section provides a specific example of how the transition to voluntary control might have occurred.

#### **4. The Transition to Upper Level Voluntary Control**

The example to be given is somewhat speculative, but plausible nevertheless. Consider how pre-voluntary species might deal with predators. Presumably their routine/non-routine (RN) control systems would be sensitive only to direct kinds of evidence of the presence of predators, such as direct visual sightings. Distant visual sightings of predators likely would trigger only routine reactive behaviors, such as both continuing to eat and continuing to watch the predator. Middle-range sightings might trigger other routine reactive behaviors, such as moving away from the predator in a leisurely fashion. But presumably close-up visual sightings of predators would instead trigger non-routine reactions involving intensive processing--such as calculations of how to immediately move away from the predator at high speed without colliding with nearby obstacles.

Now such a pre-voluntary system is, overall, a relatively crude and potentially risky control system for dealing with predators, because it exploits only a very limited class of sensory data, namely visual data that directly indicates the presence of predators. As a case in point, if non-routine fleeing behavior is triggered only by close visual sightings of predators, escape may already be risky or unlikely just because the predator is

already close.

Nevertheless, typically there would be much more data concerning predators that would be available in an environment, for species whose members possessed sophisticated enough representational systems capable of processing it adequately. For example, some predators might produce soft rustling sounds in the bushes as they approach, hence providing early warning of their presence, or flattened grasses might be evidence of the likely proximity of heavy animals who might be predators. My suggestion is that upper level control involves cognitive systems capable of processing such relative subtle kinds of representational data, whose control works by a process of exaptation or re-use of the lower level RN control structures.

In the current case, presumably the distinctive task of the upper level cognitive processing is to determine the relative degree of risk from predators provided by any potentially relevant sensory evidence, and then to map or translate that risk into directives that utilize the pre-existing, lower level RN control structures to actually carry out appropriate actions. As one specific case, if a rustling sound could cause the two level system to issue a directive that triggered lower level non-routine fleeing behavior at an earlier time than could be achieved by lower level processing alone, there could be significant evolutionary advantages to the members of the species in question, in that their likelihood of escape presumably is much higher if they flee at an earlier rather than a later time in the approach of a predator. It seems likely that the initial evolutionary stages of inception of the two level system would have involved such special cases that provide immediate and significant fitness benefits.

However, the additional upper level cognitive structure required to take advantage of arbitrary kinds of available data concerning potential predators is formidable indeed. As a case in point, early fleeing on hearing rustling sounds is not a panacea for general success, because nervous creatures that waste their expensive lower level non-routine processing resources by fleeing whenever they hear any kind of rustling sound likely would evolutionarily be even worse off than entirely pre-voluntary creatures. Flexible and sensitive upper level control over lower level RN resources, in ways that overall are evolutionarily advantageous enough to persist in a range of species, inevitably would require much sophistication in internal cognitive structure.

On the present two level conception of voluntary control, with the upper level controlling or co-opting the lower level's own RN control system, the two causal levels perform very different functions, and are well correlated with other very substantial cognitive differences between purely pre-voluntary, lower level species on the one hand, and species capable of two level voluntary control on the other hand. So the current TL theory has at least the initial ingredients needed for a substantive empirical theory invoking two distinct levels of causal control of action.

## 5. Selfhood, Agency and Conscious Choice

This section will investigate in a very preliminary way how concepts of selfhood, agency and conscious choice--as discussed in section 2--might be associated with the TL theory. To begin, arguably pre-voluntary lower level routine/non-routine (RN) control involves no distinctive agency or personhood, in that it is a purely reactive system, in which those species that happen to have an appropriate mix of routine versus non-routine processing survive better than those whose RN control systems happen to generate a less favorable mix of reactions. So overall the pre-voluntary control system is an exogenous or environmentally driven structure, in which there is no distinctive kind of control by individuals or species as such.

By contrast, upper level control does involve significant cognitive contributions by individuals or their species. Upper level control is no longer purely environmentally driven, because it involves significant kinds of cognitive sophistication--such as the representational kinds discussed in the previous section--that can enable members of a species to respond in much more flexible ways to environmental contingencies than could be achieved purely by lower level control alone. Hence upper level control is attributable to the relevant individuals themselves--which they possess in virtue of their internal two level cognitive systems--rather than merely to the effects of the environment on the reactive lower level control structure. More active kinds of upper level cognitive activity, involving reasoning or planning, would reinforce these attributions.

As a result, it is appropriate to attribute personal agency to individuals, to the extent that their actions are caused by the integrated workings of both upper and lower level levels of control. On this conception, agency is exhibited under conditions of dual level control of individual actions, and personhood is the accumulated two level cognitive structure, along with its powers to co-opt aspects of lower level control as required in the exercise of agency.

Turning now to issues concerning consciousness, it is clear that, as discussed in section 2, some basic libertarian intuitions concerning the existence of free conscious choice require that some positive conception of consciousness be supplied that is at least consistent with the TL theory as developed so far. Fortunately, such a conception is available, for as it happens, the basic concept of a routine/non-routine (RN) control system, as used here in the development of the TL theory, was initially conceived as a central element in a theory of consciousness.<sup>5</sup> Here is a brief summary of the current

---

<sup>5</sup> Dilworth (2007).



version of the theory--the *voluntary control* (VC) theory of consciousness<sup>6</sup> --and of its integration with the TL theory.

The basic idea is that the conception of voluntary control, as developed in the TL theory, already involves the primary ingredients needed for a theory of consciousness. Stripped to its essentials, the TL theory claims that voluntary control is best explained as upper level causal control over lower level routine/non-routine (RN) resources. Or, in more informal and more traditional terms, we have the voluntary power to decide whether to process some current data in routine or non-routine ways. My basic claim regarding consciousness is that *data becomes conscious just in case it is voluntarily chosen for non-routine processing*.<sup>7</sup>

For example, to return to the predator example in section 4, the basic idea is that two level representational cognitive skills enable a creature to voluntarily process environmental data, such as miscellaneous visual or auditory cues, in a flexible and skilled manner, so that it only assigns intensive non-routine processing--i.e., *conscious processing*--to those kinds of data that provide initially adequate evidence of the presence of a predator. So the creature does not become conscious of any or all miscellaneous sensory data available in its environment, but only of data relevant to its safety from predators--or other kinds of data that might require non-routine processing. On this conception, adequate voluntary control is just as much a matter of controlling what *not* to become conscious of, as it is of controlling *what* to become conscious of.

Hence the current TL/VC (hereafter just: TL) view of voluntary control over consciousness is broader than traditional libertarian conceptions, which focus exclusively on cases in which voluntary control is exhibited in cases when the relevant data is already conscious. Paradigm cases of this explicitly conscious kind of voluntary control include cases of deliberate reasoning and planning, which clearly require intensive voluntary control of non-routine processing, and hence consciousness.

Here is an example that shows how a TL approach to planning could be used to explain a libertarian conception of free conscious planning. To begin, libertarians assume that no prior planning, personal values, life experiences, etc. completely determine what one consciously decides to do--at most such items provide guidelines only.<sup>8</sup> In the corresponding TL conception, all such prior items are basic kinds of

---

<sup>6</sup> Dilworth (2008).

<sup>7</sup> An additional benefit of this voluntary skill-based approach to consciousness is that knowledge of what it is like to be conscious can be explained as a kind of knowing how rather than knowing that. For further details see Dilworth (2008).

<sup>8</sup> Searle (2001).

cognitive data that exist in the lower causal level, independently of voluntary choice. Prior actions will have modified the structure of the lower level, RN control structure, so that in the absence of voluntary control, lower level reactive control would be fully determined by those prior factors.

However, conscious planning can voluntarily draw on those prior, lower level data structures in whatever creative ways are within the skilled competence of the person's upper level voluntary control structures. The plan that results from this planning can then be voluntarily used to bias or pre-program the lower level RN system in the following manner. The basic idea is that a plan provides a series of guidelines as to how to act. Incoming sensory data during the activity is monitored for compliance with the guidelines of the plan. As long as compliance is maintained, the relevant data would normally be processed in routine or unconscious ways. But any deviations from the plan would normally result in non-routine, conscious processing--one would become consciously aware that currently there is some problem in one's execution of the plan, that would need to be corrected if the plan is to be maintained.

This conscious intervention is also a case of conscious voluntary control, and, in line with libertarian intuitions as above, one's current decisions as to what to do next are equally unconstrained by one's prior decisions. One could continue with execution of the plan after fixing the current problem, or abandon the plan and do something else instead. To be sure, on the TL view, this voluntary choice situation does not involve any categorical ability to do otherwise, and presumably what one voluntarily decides to do is fully determined--to the extent to which determinism is true--by relevant factors in one's upper level voluntary skill set plus the current state of the lower level structures. But the central libertarian point remains valid, namely that the lower level structures and data, which are processed as needed during conscious deliberation, do not, by themselves, causally determine the outcome of that deliberative process. Hence to that extent, a Searlean kind of libertarianism is vindicated by the current TL approach.

## **6. The Consistency of the Libet/Wegner Results with the TL Theory**

This section briefly shows how the current two level (TL) theory, as supplemented by the VC theory of consciousness, is consistent with the experimental results on conscious decision by such writers as Libet<sup>9</sup> and Wegner,<sup>10</sup> as discussed in section 2.

---

<sup>9</sup> Libet (2002).

Recall that a characteristic result of their research is that many actions are initiated prior to any conscious awareness of a decision to act, which seems to undermine a traditional libertarian conception of free conscious acts of will as being the sole locus of human decision-making.

Fortunately, the TL theory does not have this limitation, because, as discussed in section 5, its conception of voluntary action allows for a voluntary selection of either conscious or unconscious processing for data. So there is nothing to prevent acts being voluntarily initiated unconsciously. As for the fact that conscious awareness of some decisions to act occurs later than the actual initiation time, on the TL theory there is equally nothing to prevent voluntarily controlled initiation of an act being followed, after a short time interval, with some non-routine conscious processing.

As some commentators on Libet's results have noted, including Libet himself,<sup>11</sup> the subsequent conscious awareness may play the functional role of monitoring the prior initiation of action, and possibly vetoing it if necessary. This position is also fully consistent with the TL theory, as the complexities in monitoring and potentially vetoing an action clearly would require non-routine conscious processing. Also, the general pattern of unconscious initiation of action followed by conscious monitoring is needed for a wide variety of actions in which quick initial response to environmental contingencies is required.

For example, fast-moving games such as tennis or baseball would be unplayable if players could not instantly react to the play of opponents. On a traditional libertarian conception, players could not be praised for their clever, lightning-fast actions in such cases, since the split-second reactions occur prior to any possible conscious awareness of the action. Yet clearly we do regard such actions as free voluntary actions. Indeed, players spend many years honing their voluntary skills so that they can perform well in such situations, and everyone knows this. So there is traditional informal intuitive support for a TL-style conception of voluntary action, even though traditional libertarians have been unable to account for the relevant phenomena.

## 7. Locating the Two Level Theory Among Theories of Free Will

This section will briefly locate the account of free will provided by the two level (TL) theory in the broader context of theories of free will in general. To begin, there is a

---

<sup>10</sup> Wegner (2002).

<sup>11</sup> Libet (1996).

generally accepted division of the field<sup>12</sup> into two basic categories of theories, depending on their stance on the issue of determinism. *Compatibilist* theories, such as those of Frankfurt,<sup>13</sup> Fischer<sup>14</sup> and Baker,<sup>15</sup> defend views according to which the possession of free will is compatible with determinism. By contrast, *incompatibilist* theories deny that free will is compatible with determinism. Among incompatibilists are libertarians such as Clarke,<sup>16</sup> Kane<sup>17</sup> and Searle,<sup>18</sup> who hold that free will is possible in virtue of some indeterministic elements in the causation of human action, and hard incompatibilists such as Pereboom,<sup>19</sup> who deny the existence of free will on grounds such as that all actions are fully determined. There are also a few nonstandard theories.<sup>20</sup>

The current TL theory is unusual in that it both draws on libertarian approaches such as Searle's view,<sup>21</sup> as previously discussed, while nevertheless also fundamentally being a compatibilist theory of free will. Hence the TL approach is able to provide a hybrid view that potentially can incorporate the main strengths of each of the competing traditions--of libertarians versus compatibilists--that support some positive conception of human free will.

To begin with libertarian factors, in addition to the necessary causal gaps between previous psychology and current decisions as stressed by Searle, libertarians are also generally committed to an *originative control* thesis of some kind.<sup>22</sup> Such a thesis claims, roughly speaking, that a necessary condition of free will is that current actions are the result of previous causal factors that were under the agent's own control. Another way to express this conception (or a closely related conception) is in terms of *underived origination*,<sup>23</sup> which requires that "the source or ground ... of action would be in the agent or self, and not outside the agent." This concept is also closely related to the

---

<sup>12</sup> Kane (2002).

<sup>13</sup> Frankfurt (1969 & 1971).

<sup>14</sup> Fischer (1994 & 2006)

<sup>15</sup> Baker (2006).

<sup>16</sup> Clarke (1993).

<sup>17</sup> Kane (1996 & 2005)

<sup>18</sup> Searle (2001).

<sup>19</sup> Pereboom (2001).

<sup>20</sup> Kane (2002), Part 7.

<sup>21</sup> Searle (2001).

<sup>22</sup> Kane (1996), Ch. 6 and Baker (2006)

<sup>23</sup> Kane (1996), 79f.

traditional concept of self-determination.<sup>24</sup>

Fortunately, the TL theory is able to support a version of both of these related conceptions, in that it locates selfhood and voluntary action within the two level causal structure that, as argued previously, constitutes a person. On the TL conception, all of a person's voluntary actions are the result of causal factors originating within this two level structure. To be sure, some of those internal causal factors may themselves be partially the result of various external causal factors. But on the TL conception, voluntary action is the result of the *control* of that two level structure over all relevant causal factors, including any external causal input factors. So the TL approach is potentially able to fully implement a coherent version of the various libertarian origination theses, such as those expressed above, as well as accounting for the Searle-style libertarian causal gaps in ways as previously discussed.

Turning now to compatibilist aspects of the TL theory, traditionally one of the hardest problems for compatibilism was that it seemed to make a categorical ability to do otherwise, as expressed in a 'Principle of Alternate Possibilities' (PAP), impossible.<sup>25</sup> However, Frankfurt was able to show, via his famous examples of free actions without any ability to do otherwise, that compatibilists are not required to accept the PAP<sup>26</sup>--a point that has been exploited by compatibilists ever since,<sup>27</sup> and which strongly supports the compatibilist TL theory as well. Nevertheless, incompatibilists such as Kane<sup>28</sup> and Pereboom<sup>29</sup> argue that Frankfurt-style compatibilism is fundamentally inadequate as a theory of free will, in that it cannot support traditional libertarian intuitions. It is at this specific point in the dialectic between compatibilists and incompatibilists that the TL theory is at its strongest, in that it can both have its compatibilist cake, and yet also provide an appropriately translated libertarian conception of free will for general consumption. Consequently, as already mentioned, the TL theory is potentially capable of having the best of both libertarian and compatibilist worlds.

Also worthy of mention is Frankfurt's hierarchical conception of free will,<sup>30</sup> according to which second-order desires about one's own first-order desires play an important part in characteristically human free action. The two level causal hierarchy

---

<sup>24</sup> Ibid., 192-6.

<sup>25</sup> Kane (2002).

<sup>26</sup> Frankfurt (1969).

<sup>27</sup> Fischer (1994) and Baker (2006).

<sup>28</sup> Kane (1996).

<sup>29</sup> Pereboom (2001).

<sup>30</sup> Frankfurt (1971).

of the TL theory is of course independent from Frankfurt's desire-based conception, but the TL theory could accept that many paradigm cases of rational free action conform both to the causal TL conception and to Frankfurt's desire-based hierarchical conception. Hence here too, the TL theory is able to exploit the best features of other extant conceptions of free will--while also, as argued in the previous section, being able to deflect contemporary attacks on the possibility of conscious free will by cognitive scientists such as Libet<sup>31</sup> and Wegner.<sup>32</sup>

## 8. Consciousness and the Two Level Theory

This section briefly relates the two level (TL) theory to other extant theories of consciousness. Recall that according to the TL theory, data becomes conscious just in case it is voluntarily chosen for non-routine computational processing. On this view, conscious processing is one specific kind of upper level causal control over lower level routine/non-routine (RN) computational resources (on which see section 5). In terms of a Chalmers-style classification of theories of consciousness,<sup>33</sup> this means that the TL theory is a type A theory, which reduces consciousness to a functional kind of cognitive processing, and which consequently can claim that there is no epistemic gap between physical and phenomenal truths.

Additional support for the latter point is provided by the auxiliary TL claim that knowledge of what it is like to be conscious can be explained as a kind of knowing how rather than knowing that.<sup>34</sup> In addition, this knowing-how approach could potentially be closely integrated with Ability Hypothesis replies to the Knowledge Argument,<sup>35</sup> which replies effectively undermine qualia-based arguments for opposing non-materialist views of consciousness.

Another significant division among theories of consciousness is that between *one-level* and *higher-order* theories. Prominent supporters of higher-order thought (HOT) theories include Rosenthal and Carruthers.<sup>36</sup> According to such theories, a state becomes conscious when it becomes the object of a higher-level thought about it.

---

<sup>31</sup> Libet (2002).

<sup>32</sup> Wegner (2002).

<sup>33</sup> Chalmers (2003).

<sup>34</sup> For further details see Dilworth (2008).

<sup>35</sup> See Nemirow (1980 & 2007) and Lewis (1983 and 1990).

<sup>36</sup> Rosenthal (1997) and Carruthers (2000).

Lycan has a related higher-order perceptual (HOP) theory.<sup>37</sup> One motivation in common between such higher-order theories and the TL theory is that both kinds of theory attempt to explain how a given kind of mental state, involving a particular kind of information, could also involve either conscious or unconscious processing. Higher-order theories invoke higher order states to explain the difference, while the TL theory has a corresponding explanation in terms of either non-routine or routine processing of the relevant data.

Furthermore, there is no fundamental incompatibility between the TL theory and higher order theories, in that some might argue that TL voluntary selection of non-routine processing for data would occur just in case the data became the object of a higher-order thought or perception. But presumably the matter is an empirical one that further experimentation should be able to resolve. On the other hand, if it turns out that higher-order processes are not always involved in conscious states--or even that they never play a role in explaining conscious states--then presumably there would be room for alternative one-level theories of consciousness, such as those of Thomasson and Kriegel,<sup>38</sup> which are also compatible with the TL theory.

Nevertheless, if the TL account of the nature of consciousness is correct, then presumably its explanation of consciousness would be more fundamental than that of other compatible theories. Thus, even if it is true that consciousness occurs when and only when a state becomes the object of a higher order thought, it could still be the case that this is so only because higher-order thoughts induce non-routine processing of the relevant data, in conformity with the TL theory. But this is not to deny that the explanatory value of the TL theory would be enhanced if it could be shown that it can function in close tandem with some currently better-known theory of consciousness.<sup>39</sup>

## References

Baker, L. (2006). Moral Responsibility Without Libertarianism. *Noûs*, 40, 307-330.

Carruthers, P. 2000. *Phenomenal Consciousness: A Naturalistic Theory*. Cambridge: Cambridge University Press.

Chalmers D. 2003. Consciousness and its Place in Nature. In Stich, S. & F. Warfield,

---

<sup>37</sup> Lycan (1996).

<sup>38</sup> Thomasson (2000) and Kriegel (2006).

<sup>39</sup> My thanks to the Editor, and to an anonymous referee, for very helpful comments on an earlier version.

- (eds.), *Blackwell Guide to Philosophy of Mind*. Oxford: Blackwell.
- Clarke, R. (1993). Toward a Credible Agent-Causal Account of Free Will. *Noûs*, 27, 191–203.
- Dilworth, J. (2007). Conscious Perceptual Experience as Representational Self-Prompting. *Journal of Mind and Behavior*, 28, 135-156.
- \_\_\_\_\_. (2008, under review). Voluntary Control of Consciousness and its Cognitive Basis.
- Fischer, J. (1994). *The Metaphysics of Free Will*. Oxford: Blackwell.
- \_\_\_\_\_. (2006). *My Way*. Oxford: Oxford University Press.
- Frankfurt, H. (1969). Alternate Possibilities and Moral Responsibility. *Journal of Philosophy*, 66, 829-839.
- \_\_\_\_\_. (1971). Freedom of the Will and the Concept of a Person. *Journal of Philosophy*, 68, 5-20.
- Kane, R. (1996). *The Significance of Free Will*. Oxford: Oxford University Press.
- \_\_\_\_\_. (ed.), (2002). *Oxford Handbook on Free Will*. New York: Oxford University Press.
- \_\_\_\_\_. (2005). *A Contemporary Introduction to Free Will*. Oxford: Oxford University Press.
- Kriegel, U. (2006). The Same-Order Monitoring Theory of Consciousness. In Uriah Kriegel & Kenneth Williford (eds.), *Self-Representational Approaches to Consciousness*. Cambridge, MA: MIT Press.
- Lewis, D. (1983). Postscript to “Mad Pain and Martian Pain”. In *Philosophical Papers*, Vol.1, Oxford: Oxford University Press.
- Lewis, D. (1990) “What Experience Teaches,” in *Mind and Cognition: A Reader*, ed. by W. Lycan. Oxford: Blackwell.
- Libet, B. (1996). Commentary on “Free will in the Light of Neuropsychiatry”. *Philosophy, Psychiatry, and Psychology*, 3, 95-96.
- \_\_\_\_\_. (2002). Do We Have Free Will? In Kane, ed., (2002), 551-564.
- Nemirow, L., 1980, “Review of Thomas Nagel, *Mortal Questions*,” *Philosophical Review*, 89, 473-477.
- \_\_\_\_\_. (2007). So This is What it’s Like: A Defense of the Ability Hypothesis. In



- Phenomenal Concepts and Phenomenal Knowledge: New Essays on Consciousness and Physicalism*, Torin Alter & Sven Walter (eds.), Oxford: Oxford University Press, 32-51.
- Pereboom, D. (2001). *Living Without Free Will*. Cambridge, Cambridge University Press.
- Rosenthal, D. (1997). A Theory of Consciousness. In N. Block, O. Flanagan, and G. Güzeldere (eds.), *The Nature of Consciousness*, Cambridge, MA: MIT Press.
- Searle, J. (2001). *Rationality in Action*. Cambridge, MA, MIT Press.
- Thomasson, A. (2000). After Brentano: A One-Level Theory of Consciousness. *European Journal of Philosophy*, 8, 190-209.
- Wegner, D. (2002). *The Illusion of Conscious Will*. Cambridge, MA: MIT Press.
- Wiener, N. (1965). *Cybernetics*. Cambridge, MA: MIT Press.