Jamesian Free Will

The Two-Stage Model of William James
The History and Status of an Idea

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A Short Poll

How many of you think that science can find causal laws for everything, including our minds, so that a super-intelligence would be able to predict our futures?

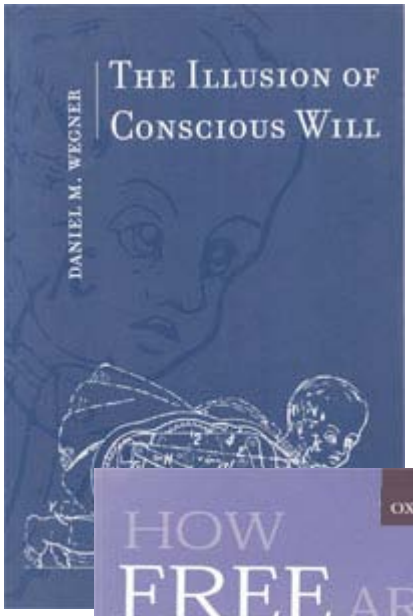
Why William James?

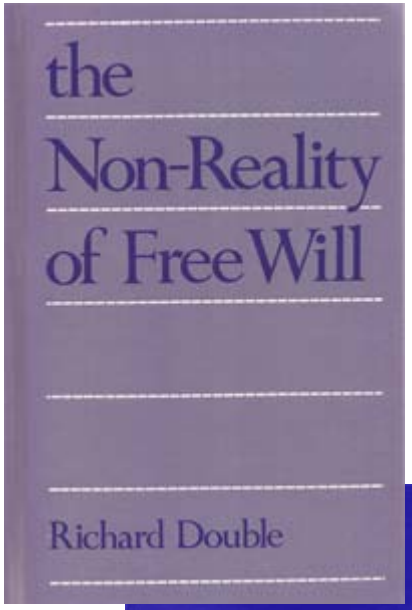
140 years ago, William James simply asserted that his will was free. As his first act of freedom, he said, he chose to believe his will was free. In his diary entry of April 30, 1870, he wrote,

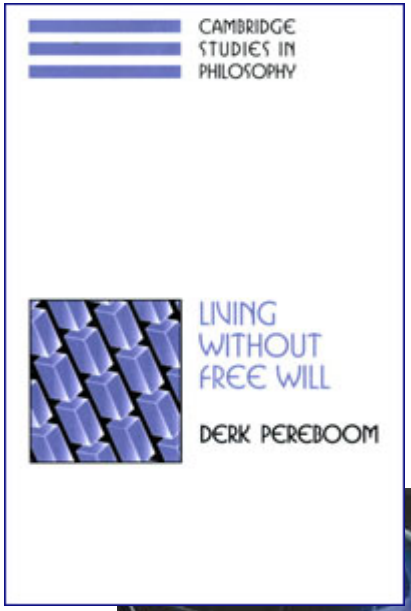
"I think that yesterday was a crisis in my life. I finished the first part of Renouvier's second *Essais* and see no reason why his definition of free will — 'the sustaining of a thought *because I choose to* when I might have other thoughts' — need be the definition of an illusion. At any rate, I will assume for the present — until next year — **that it is no illusion**. My first act of free will shall be to believe in free will."

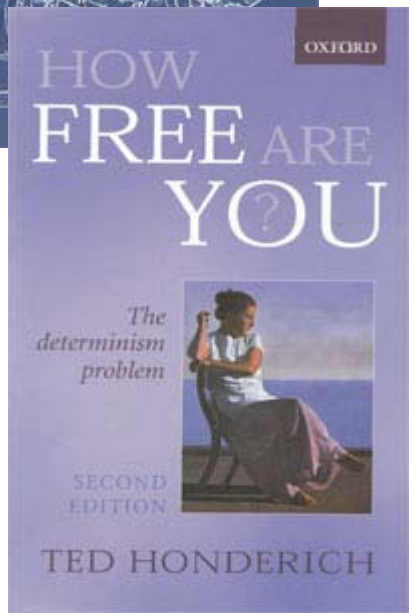
(*The Thought and Character of William James* (Boston, Little, Brown, 1936) vol.1, p.323)

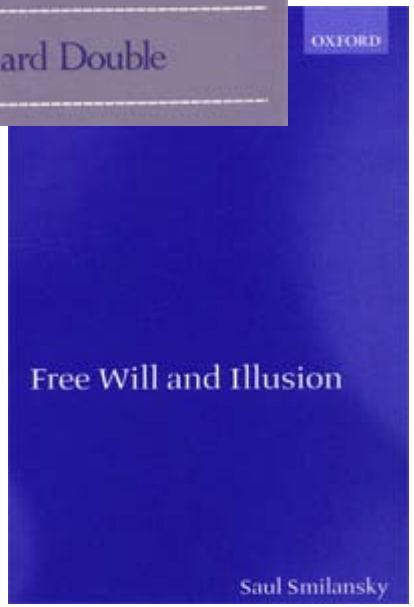
Most Books On Free Will Deny That It Exists

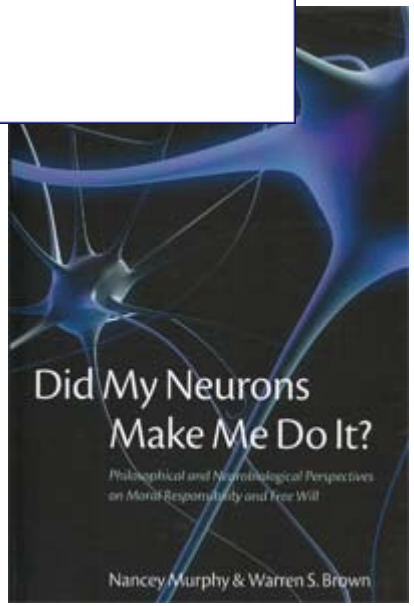












Information Philosopher

William James Symposium

The Will to Believe – in Free Will

William James thought that an individual act of will could make a difference in a causal and deterministic universe.

That the strength of his beliefs increased the chance of their being true was perhaps wishful thinking.

But James was not just a believer. He had an idea of how free will actually worked – as opposed to what he called *hard* determinism and *soft* determinism.

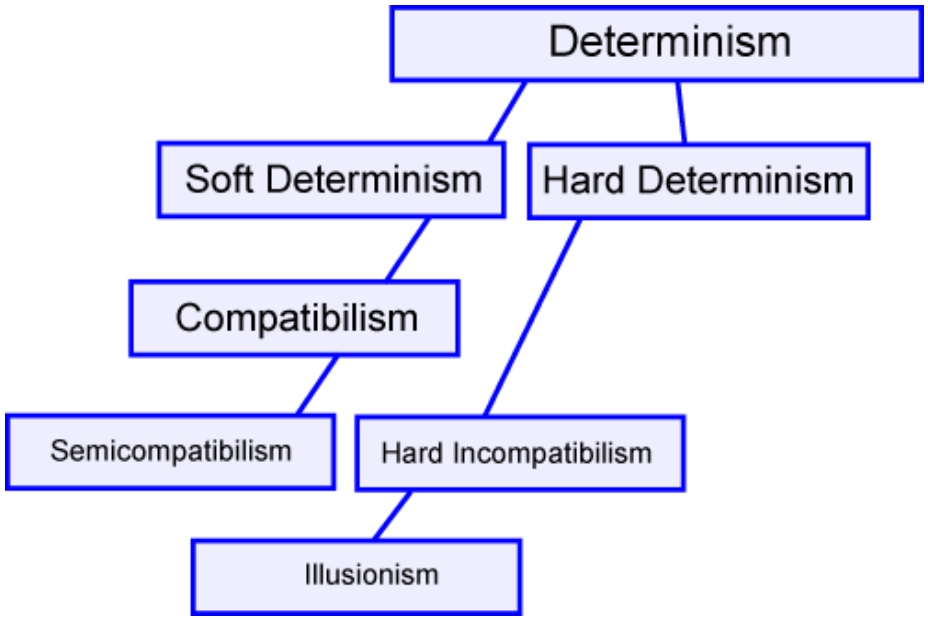
Hard and *Soft* Determinism

"Old-fashioned determinism was what we may call hard determinism. It did not shrink from such words as fatality, bondage of the will, necessitation, and the like. Nowadays, we have a soft determinism which abhors harsh words, and, repudiating fatality, necessity, and even predetermination, says that its real name is freedom; for freedom is only necessity understood, and bondage to the highest is identical with true freedom."

("The Dilemma of Determinism," *The Will to Believe* (New York, Dover, 1956), p. 149.)

Today, Soft Determinism is called *Compatibilism*

Hard and Soft Determinism Today



Compatibilism and *Voluntarism*

Thomas Hobbes and David Hume defined *freedom of action* as the absence of external coercion. It's called "negative freedom."

Though the will be determined, as long as the will is one of the causes in the great causal chain, that would be enough freedom for them. They found “free will” to be compatible even with a complete *pre-determinism* since the beginning of time.

Hobbes said “the cause of the will is not the will itself, but something else not in his own disposing …voluntary actions have all of them necessary causes and therefore are necessitated.” For Hobbes, talk of free agents was nonsense - if free means uncaused and random.

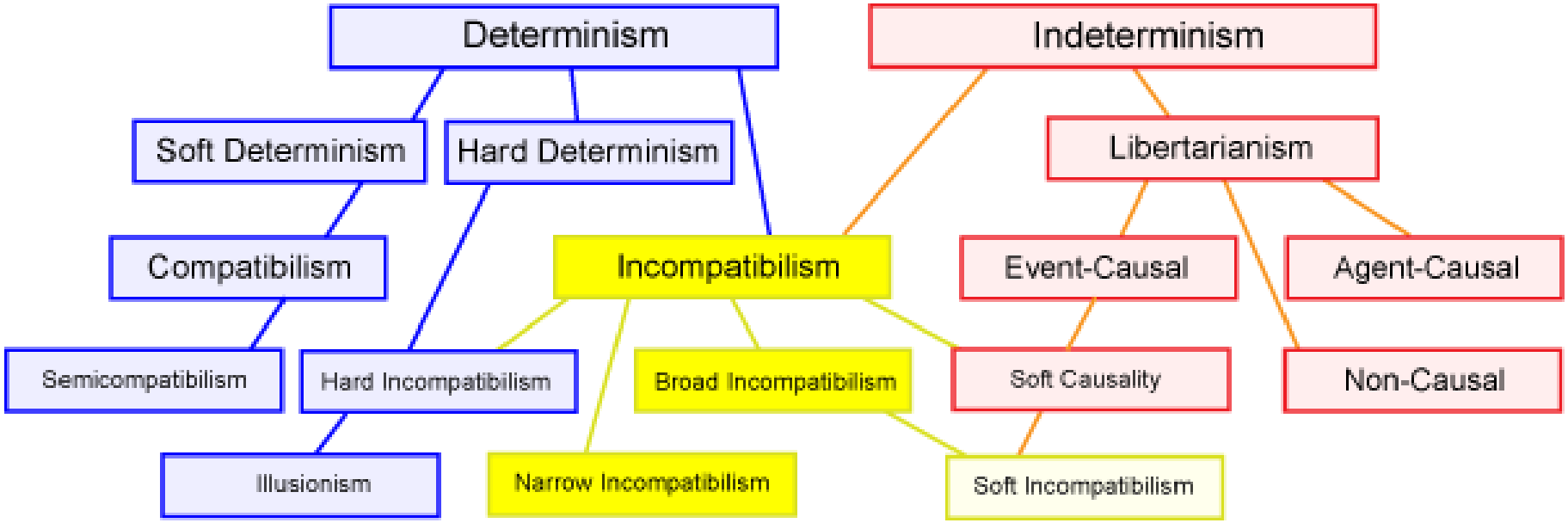
Hume said "tis impossible to admit of any medium betwixt chance and an absolute necessity."

William James Embraced Chance

"The stronghold of the determinist argument is the antipathy to the idea of chance. As soon as we begin to talk **indeterminism** to our friends, we find a number of them shaking their heads. This notion of alternative possibility, they say, this admission that any one of several things may come to pass is, after all, only a roundabout name for chance; and chance is something the notion of which no sane mind can for an instant tolerate in the world. What is it, they ask, but barefaced crazy unreason, the negation of intelligibility and law? And if the slightest particle of it exists anywhere, what is to prevent the whole fabric from falling together, the stars from going out, and chaos from recommencing her topsy-turvy reign?"

("The Dilemma of Determinism," *The Will to Believe* (New York, Dover, 1956), p. 153.)

Indeterminism Today



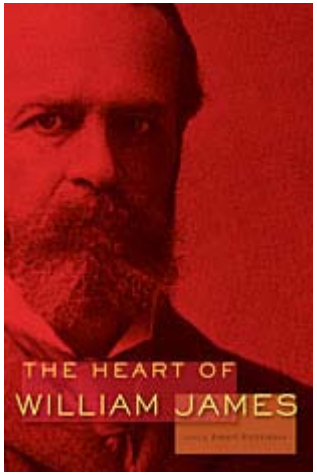
Again, Why William James?

James was the first thinker to enunciate clearly a two-stage decision process for free will, with *chance* in a *present* time of random alternatives, leading to a *choice* which *grants consent* to one possibility and transforms an equivocal *ambiguous future* into an unalterable and simple *past*.

James described a temporal sequence of *undetermined* alternative possibilities that "present themselves" followed by adequately determined choices and decisions.

And James saw a strong similarity between genetic evolution and the evolution of ideas.

The Heart of William James



In his new book, Bob Richardson says James gives us "a clever and hard to dislodge argument that in many, perhaps most, of our life situations, we are free to choose between alternatives."

James attacks "all forms of determinism, such as the philosophic-theological, the behavioural, or genetic."

"Accepting the possibility of chance does not mean accepting a world that is random. It means realizing that chance is another word for freedom."

William James and Darwin

James's two-stage model was clearly inspired by Darwin.

In 1880 James suggested a strong similarity between Darwinian evolution and the evolution of ideas.

"A remarkable parallel, which I think has never been noticed, obtains between the facts of social evolution on the one hand, and of zoölogical evolution as expounded by Mr. Darwin on the other… "

"I can easily show...that as a matter of fact the new conceptions, emotions, and active tendencies which evolve are originally produced in the shape of random images, fancies, accidental out-births of spontaneous variation in the functional activity of the excessively instable human brain."
*("*Great Men, Great Thoughts, and the Environment", *Atlantic Monthly*, vol.46, p.441)

In the Footsteps of William James

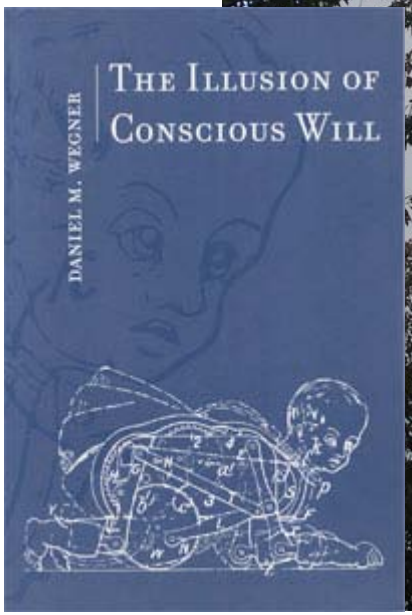
"What is meant by saying that my choice of which way to walk home after the lecture is ambiguous and matter of chance?... It means that both Divinity Avenue and Oxford Street are called but only one,
and that one *either* one, shall be chosen."

("The Dilemma of Determinism," *The Will to Believe* (New York, Dover, 1956), p. 153)

William James Hall

The occupants of William James Hall today, with the notable exception of Stephen Kosslyn, who occupies the William James chair, are determinists and compatibilists.

They are the hard and soft determinists of James's 1884 "Dilemma of Determinism" lecture, given just one block away.



The Standard Argument *Against* Free Will

Either Determinism is True or Indeterminism is True.

1) If Determinism is True, We Are Not Free.
2) If Indeterminism is True, our Will is Random,
so we cannot be responsible for our actions.

Logical philosophers conclude that Free Will is *Incompatible* with *both* Determinism and Indeterminism.

No Free Will either way.

The Standard Argument is Old

William James quoted his determinist contemporary, John Fiske (1842-1901), in the *Principles of Philosophy*.

" Volitions are either caused or they are not. If they are not caused, an inexorable logic brings us to absurdities… If they are caused, the free-will doctrine is annihilated." (*Principles*, vol.2, p.577.)

Here is Harvard psychology professor Steven Pinker today,

"A random event does not fit the concept of free will any more than a lawful one does, and could not serve as the long-sought locus of moral responsibility." (*How The Mind Works*, 1997, p.54)

Flaws in the Standard Argument

First, Free Will is NOT *Incompatible* with Indeterminism.

For James, some indeterminism is a requirement, needed to break the causal chain of determinism.

And we will see that time matters. Another flaw in the simple logical argument is that it has no time in it.

Indeterminism comes in the early stage of decision making.

The later stage can be adequately determined, even though physics now shows us that the universe is fundamentally and irreducibly indeterministic at the microscopic scale.

James on Indeterminism

Free Will would be Incompatible with any *Indeterminism or Chance that directly caused* a decision of the will.

If our decisions are random, they are not caused by our reasons and desires and we are not responsible for them. (Robert Kane's "torn decisions" are an exception)

The genius of William James was to *limit the indeterminism* to the generation of *alternative possibilities* for thought and action that "*present themselves"* for evaluation.

In the later evaluation stage *we need some determinism*.

James on Determinism

The incompatibility is not with "determinism" or some determination, according to James, but with *Pre-Determinism*.

Pre-determinism means that our actions are determined by causal chains from the ancient past long before our births.

But Free Will is not incompatible with our actions being *determined* by our motives, reasons, desires, and feelings.

An effort of will, James says, *grants consent*, to one of the *alternative possibilities*, answering the question –

Will you or won't you have it so?

The Two-Stage Model for Free Will

Since William James in 1884, Henri Poincaré (1905), Arthur Holly Compton (1931, 1955), Karl Popper (1965, 1977), Henry Margenau (1968, 1982), Daniel Dennett (1978), Robert Kane (1984), John Martin Fischer (1995), Alfred Mele (1995), Stephen Kosslyn (2004), Bob Doyle (2005), and most recently Martin Heisenberg(2009), have discussed *Jamesian* two-stage models.

They all include:

Stage 1) *Alternative possibilities* generated by chance.
Stage 2) An *adequately determined* evaluation of those alternatives resulting in a willed decision.

Two Distinct Temporal Stages

I would like to separate "free" from "will."

Can we say - first a “free” stage, then a “willed?”

First spontaneous generation of possibilities, then selection.

First *chance*, then *choice*.

Our thoughts *come to us* freely. They "*present themselves*."

Our actions *go from us* willfully. We are the authors of our lives.

Free Will on InformationPhilosopher.com

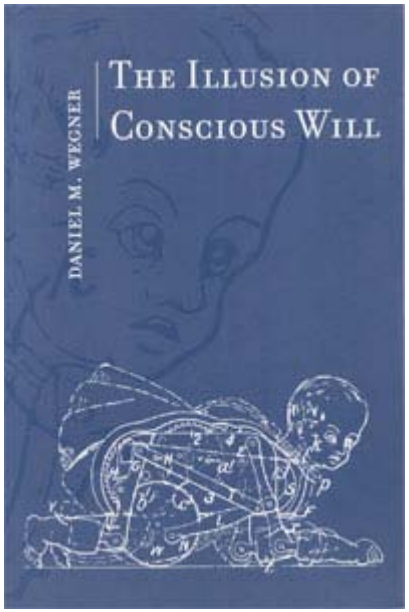
On my informationphilosopher.com website, you will find extensive web pages on 130 philosophers from *Democritus* to *Robert Kane*, editor of the Oxford Handbook of Free Will, and *Alfred Mele*, director of a $4.4 million Templeton Foundation project called "Big Questions in Free Will."

You will also find pages on 60 scientists, from *Pierre-Simon Laplace* to *Martin Heisenberg*, son of Werner Heisenberg, the creator of quantum mechanics and the uncertainty principle.

Blue hyperlinks in this presentation open my web pages.

Is Free Will an Illusion?

In an essay in the May issue of Nature magazine last year titled "Is Free Will an Illusion?," Martin Heisenberg challenged the premise of Harvard psychology professor Daniel Wegner's book "The Illusion of Conscious Will."
(Wegner the APS William James Fellow for 2010!)



Heisenberg proposed a two-stage model of *random* plus *lawful* behavior in animals as primitive as bacteria and fruit flies.

Nature then published a letter from me, pointing out that Heisenberg was just the latest of a dozen thinkers since William James with the idea of a two-stage model.

The Barcelona Meeting on Free Will

In October, the Social Trends Institute of New York and Barcelona will hold an "Experts Meeting" on the question – "Is Science Compatible with our Desire for Freedom?"

Four of the five leading thinkers who have seriously discussed two-stage models will be there, including Robert Kane, Alfred Mele, Martin Heisenberg, and myself.

Only Daniel Dennett of Tufts will be missing. Dennett is perhaps the most famous living compatibilist/determinist.

Bob Kane is the leading free willist. Al Mele is agnostic.

Help Me Prove Priority for William James?

My *William James Studies* paper on "Jamesian Free Will" aims to establish priority for James's two-stage model.

I need research help to show that *no one before James* had the idea for this most plausible and practical model for free will.

Few philosophers think that this 2400-year old classic problem will be solved in our lifetime. Yet my goal is to show that William James had the best solution over 125 years ago.

Reviewers for *WJS* asked me how I could be sure some other thinker did not anticipate James. Let's review what I know.

(My thanks to Mark Moller, editor of *WJS*, and anonymous reviewers.)

Who Else Before William James?

The ancients? Epicurus and Lucretius said the atoms swerve to make room for freedom. The Stoics said chance was atheistic.

I think no one for a couple of centuries after Newton's Laws, which imply complete causality and physical determinism.

Charles Darwin? - he introduced chance and indeterminism.

Charles Sanders Peirce? – the champion of tychism.

Charles Renouvier and Alfred Fouilleé advocated absolute chance and free will, and were known influences on James.

Epicurus/Lucretius

The ancients? Epicurus and Lucretius said the atoms *swerve* to make room for freedom, but they could not defend themselves against the randomness objection in the standard argument.

The Stoics said chance was atheistic, and the Stoic Chrysippus said a chance event would destroy the cosmos…

> Everything that happens is followed by something else which depends on it by causal necessity. For nothing exists or has come into being in the cosmos without a cause. The universe will be disrupted and disintegrate into pieces and cease to be a unity functioning as a single system, if any uncaused movement is introduced into it.
> (Cicero, *De Fato*, X, 20)

For more, see my web page on Free Will in Antiquity.

Charles Darwin

Could Darwin himself have seen that his two-step process of evolution – spontaneous variation plus natural selection - might be applied to "mental evolution?"

Robert J. Richards says no:
"Darwin, rather like Huxley, considered mental faculties to be completely determined by brain patterns."

"But James could not have known this, since Darwin expressed this interpretation only in his private notebooks."
(*Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*, p.435)
(This reference thanks to Jim Kloppenberg's *Uncertain Victory*, p. 39)

Charles Renouvier

Renouvier's five-volume *Essay on General Critique* was inspired by Kant's three great critiques of Reason. But unlike Kant's noumenal freedom, Renouvier's was in the phenomenal world, with contingent events. Absolute chance was a requirement for human freedom.

Renouvier's ultimate foundation for free will was based, like Kant's analysis of practical reason, on a moral requirement for freedom. And like Kant, he connects freedom to God and immortality.

Renouvier's "proofs" of liberty and free will turn out to be formal "antinomies," equally applicable to "proving" determinism.

Renouvier lacks James's practical insight that chance must be limited to generating alternative possibilities.

Alfred Fouillée

Alfred Fouillée's 1872 book *La Liberté at le Determinisme* made a powerful claim for the existence of absolute chance (*hasard absolu*) in the universe, and for the importance of chance in human free will.

Fouillée's influence on Charles Sanders Peirce and William James is well known. Peirce credited Fouillée and Charles Renouvier with the origin of his ideas for Tychism. And William James' personal copy of Fouillée's book (now in Harvard's Houghton Library, perhaps thanks to Eugene Taylor) is well-marked with passages he found important.

But Fouillée was not specific about how chance could help (beyond breaking the causal chain of determinism), nor did he address how chance would be prevented from making our decisions random.

Charles Sanders Peirce

More than any other philosopher, Peirce understood that determinism was a hypothesis that cannot be proved by error-prone experiment or observation. And Peirce, following Renouvier and Fouillée, embraced absolute chance in his theories about tychism.

But tychism was only one-third of the story. For Peirce, there was also anancasm (determinism) and agapasm (or synechism) .

Peirce tried to force Darwin's *two-step* evolutionary process of random spontaneous variation followed by natural selection into the Procrustean bed of a *three-step* process –

"first, the principle of individual variation or sporting; second, the principle of hereditary transmission, which wars against the first principle; and third, the principle of the elimination of unfavorable characters."
("A Guess at the Riddle," *Collected Papers of C.S.P.*, vol.I, p.214.)

Peirce's Triads

Like Hegel, Peirce arranged his arguments in triads.

Peircean evolution has three levels, the Darwinian (random and indeterminate), the Spencerian (mechanical and determinate), and Peirce's synechism (union of the two first levels).

	Chance Indeterminism	Mechanism Determinism	Continuity and Community Synthesis and *Aufhebung*
Peirce on evolution	Tychism, Darwin theory	Necessity, Spencer theory	Synechism, Peirce theory
Peirce three levels of thought	Tychastic, Purposeless and unconstrained	Anancastic, Determined by causes	Agapastic, Continuity, sympathy, with others and God
Hegel on Free Will	Indeterminacy, subject	Determination, object	Unity of first two moments

Peirce on Free Will

Necessitarianism cannot logically stop short of making the whole action of the mind a part of the physical universe. Our notion that we decide what we are going to do, if, as the necessitarian says, it has been calculable since the earliest times, is reduced to illusion.
("The Doctrine of Necessity Examined," *The Monist,* vol.2, pp.321-337 (1892))

[T]he question of free-will and fate in its simplest form, stripped of verbiage, is something like this: I have done something of which I am ashamed; could I, by an effort of the will, have resisted the temptation, and done otherwise?... it is perfectly true to say that, if I had willed to do otherwise than I did, I should have done otherwise. On the other hand, arranging the facts so as to exhibit another important consideration, it is equally true that, when a temptation has once been allowed to work, it will, if it has a certain force, produce its effect, let me struggle how I may.
("Synechism and Agapism," *The Monist*, vol. 3, pp 176-200 (1893))

After James…

So I have been able to find no one before William James with a two-stage model for free will.

Let's look at thinkers after James with a two-stage model and see if we can detect any influence of his thought.

Few of these thinkers give any explicit credit to their immediate predecessors, let alone going back to James.

I find it hard to believe that they would not have known about the author of the source article for hard and soft determinism, the "iron block" universe, and the "quagmire of evasion."

The Strange Case of R.E.Hobart

R.E.Hobart is the pseudonym of Dickinson S. Miller, who was a student of William James around 1892 and later his colleague in the philosophy department.

Hobart published an article in Mind in 1934 that Is often cited by determinists as establishing the need for determinism.
('Free Will as Involving Determination and Inconceivable Without It'. *Mind*, 43, p.1)

"We say,' I can will this or I can will that, whichever I choose '. Two courses of action present themselves to my mind. I think of their consequences, I look on this picture and on that, one of them commends itself more than the other, and I will an act that brings it about. I knew that I could choose either. That means that I had the power to choose either." (p. 8)

"I am not maintaining that determinism is true...it is not here affirmed that there are no small exceptions, no slight undetermined swervings, no ingredient of absolute chance." (p. 2)

Henri Poincaré

Poincaré speculated on how his mind works when he is solving mathematical problems. Random combinations and possibilities are generated, some unconsciously, then they are selected among.

"In the subliminal ego, there reigns what I would call liberty, if one could give this name to the mere absence of discipline and to disorder born of chance."

"It is certain that the combinations which present themselves to the mind in a kind of sudden illumination after a somewhat prolonged period of unconscious work are generally useful and fruitful combinations."

"A few only are harmonious,…useful and beautiful, and they will be capable of affecting the geometrician's special sensibility [and] will direct our attention upon them, and will thus give them the opportunity of becoming conscious."
(Science and Method, chapter 3, 1914, pp.58)

Arthur Holly Compton

In 1931, just a few years after quantum theory, Compton proposed that there might be a way that the nervous system acts to amplify quantum events so as to break the causal chain of determinism.
(*Science*, 74, p.1911)

In a 1955 *Atlantic Monthly* article, Compton saw randomness as producing a "range of events" – from which a choice is made.

"A set of known physical conditions is not adequate to specify precisely what a forthcoming event will be. These conditions, insofar as they can be known, define instead a range of possible events from among which some particular event will occur. When one exercises freedom, by his act of choice he is himself adding a factor not supplied by the physical conditions and is thus himself determining what will occur."
(*The Cosmos of Arthur Holly Compton*, p.121)

Karl Popper

In 1965, Popper gave the Arthur Holly Compton Memorial Lecture. He objected to Compton's ideas about amplified quantum events.

In 1977, Popper compared free will to evolution, as James had done.

"New ideas have a striking similarity to genetic mutations. ..they are also probabilistic and not in themselves originally selected or adequate, but on them there subsequently operates natural selection which eliminates inappropriate mutations. Now we could conceive of a similar process with respect to new ideas and to free-will decisions."
(Popper and Eccles, *The Self and Its Brain*, p.540)

"The selection of a kind of behavior out of a randomly offered repertoire may be an act of free will. I am an indeterminist… A choice process may be a selection process, and the selection may be from some repertoire of random events, *without being random in its turn*. "
(The Darwin Lecture, Darwin College, Cambridge, November 8, 1977)

Henry Margenau

In 1968, Margenau lectured on *Scientific Indeterminism and Human Freedom*. He accepted indeterminism as the *first step* toward a solution of the problem of human freedom.

Then in 1982, he offered his "solution" to what had heretofore been seen as mere "paradox and illusion."

" Our thesis is that quantum mechanics leaves our body, our brain, at any moment in a state with numerous (because of its complexity we might say innumerable) possible futures, each with a predetermined probability.

“Freedom involves two components: chance (existence of a genuine set of alternatives) and choice. Quantum mechanics provides the chance, and we shall argue that only the mind can make the choice by selecting…among the possible future courses. "
(*Einstein's Space and Van Gogh's Sky*. p.240)

Daniel Dennett

In 1978, Dennett wrote most clearly and convincingly on the strength of a two-stage model for free will. *Sadly, he did not endorse it*.

"The model of decision making I am proposing, has the following feature: when we are faced with an important decision, a consideration-generator whose output is to some degree undetermined produces a series of considerations, …those considerations ultimately serve as predictors and explicators of the agent's final decision."
(*Brainstorms*, p.295)

Dennett gives six excellent reasons why this is the kind of free will that libertarians say they want. He says,

"First...The intelligent selection, rejection, and weighing of the considerations that do occur to the subject is a matter of intelligence making the difference."

"Second, I think it installs indeterminism in the right place for the libertarian, if there is a right place at all."

Daniel Dennett's Six Good Reasons

"Third...from the point of view of biological engineering, it is just more efficient and in the end more rational that decision making should occur in this way."

"A fourth observation in favor of the model is that it permits moral education to make a difference, without making all of the difference."

"Fifth - and I think this is perhaps the most important thing to be said in favor of this model - it provides some account of our important intuition that we are the authors of our moral decisions."

"Finally, the model I propose points to the multiplicity of decisions that encircle our moral decisions…the decision, for instance, not to consider any further, to terminate deliberation; or the decision to ignore certain lines of inquiry.

("On Giving Libertarians What They Say They Want," *Brainstorms*, p.295-7)

Robert Kane

Kane is the editor of the *Oxford Handbook of Free Will* and the world's leading libertarian or free willist. In 1984, Kane focused on the role of indeterminism in the free actions that form our character:

"Indeterminism does not have to be involved in all acts done "of our own free wills" for which we are ultimately responsible, only those acts by which we made ourselves into the kinds of persons we are — namely, the "will-setting" or "self-forming actions" (SFAs) that are required for ultimate responsibility."
(*Free Will and Values*, 1984, p.144-6)

"Our thoughts, images, memories, beliefs, desires, and other reasons may be causes of our choices or actions without necessarily determining choices and actions…Such a view, for example, provides for an "open future," such as we think we have when we exercise free will. We would not have to think that our choices and the future direction of our lives had somehow been decided long before we were born."
(*A Contemporary Introduction to Free Will*, 2005, p.64-5)

Alfred Mele

In his 1995 book *Autonomous Agents,* Mele proposed a "Modest Libertarianism" for consideration by libertarians. He himself did not endorse the idea. Following Dennett's model, he says that the indeterminism should come early in the overall process. He describes the latter - decision - part of the process as compatibilist (effectively determinist). This of course could only be adequate determinism.

Then in 2005, he says:

"The modest indeterminism at issue allows agents ample control over their deliberation…That a consideration is indeterministically caused to come to mind does not entail that the agent has no control over how he responds to it…And given a suitable indeterminism regarding what comes to mind in an assessment process, there are causally open alternative possibilities for the conclusion or outcome of that process. "
(*Free Will and Luck*, p.11)

Stephen Kosslyn

Kosslyn is the John Lindsley Professor of Psychology in Memory of William James at Harvard University.

In a foreword to Benjamin Libet's 2004 book *Mind Time*, Kosslyn notes that the opposite of being "determined" is not necessarily being "random," - a distinct departure from the standard logical argument.

"one constructs rationales and anticipated consequences, as appropriate for the specific situation at hand. This construction process may rely in part on chaotic processes. Such processes are not entirely determined by one's learning history (even as filtered by one's genes). "

"Given the choices, rationales, and anticipated consequences, one decides what to do on the basis of …one's knowledge, goals, values, and beliefs."

(Foreword to *Mind Time*, by Benjamin Libet, 2002, Harvard U. Press), pp.xii-xv)

Martin Heisenberg

Heisenberg says that the debate on free will…

"has focused on humans and 'conscious free will'. Yet when it comes to understanding how we initiate behaviour, we can learn a lot by looking at animals… The idea that animals act only in response to external stimuli has long been abandoned, and it is well established that they initiate behaviour on the basis of their internal states, as we do. "
(*Nature*, vol. 459, 2009, p.164)

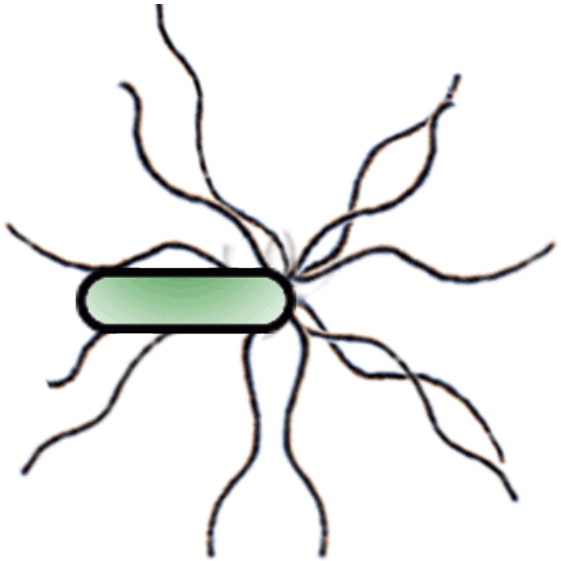
Heisenberg proposes a two-stage model of random plus lawful behavior, even in animals as primitive as bacteria (actually prokaryotes) and fruit flies.

"As with a bacterium's locomotion, the activation of behavioural modules is based on the interplay between chance and lawfulness in the brain…Their brains, in a kind of random walk, continuously preactivate, discard and reconfigure their options, and evaluate their possible short-term and long-term consequences." (p.165)

Behavioral Freedom in Bacteria

Heisenberg identifies two states for bacteria:

1)Random tumbling motion when the flagella rotate clockwise.



Behavioral Freedom in Bacteria

Heisenberg identifies two states for bacteria:

1) Random tumbling motion when the flagella rotate clockwise.
2) Lawful forward motion when the flagella rotate counter-clockwise and wrap together.

Behavioral Freedom in Bacteria

After a random tumble, which generates alternative possibilities, the bacterium moves forward and evaluates the gradients of temperature, nutrients, toxins, etc, along its body.

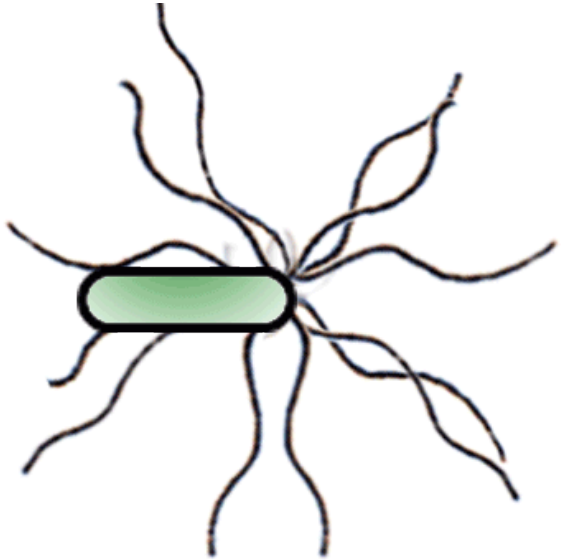
If things look good, it "decides" to continue in that direction.

Behavioral Freedom in Bacteria

After a random tumble, which generates alternative possibilities, the bacterium moves forward and evaluates the gradients of temperature, nutrients, toxins, etc, along its body.

If things look good, it "decides" to continue in that direction.

If not,
it tumbles again



How Behavioral Freedom Evolves To Free Will

Indeterminism is always the source for first-stage spontaneous variations, whether it is bacteria tumbling or the human mind generating new ideas.

In biological evolution, the second stage is *natural* selection.

But unlike biological evolution, in behavioral freedom it is the organism itself that "purposefully" does the second-stage selection according to its goals.

The means of selection is what distinguishes behavioral freedom in lower animals from free will in humans and higher animals. We see four levels of selection.

The Four Levels of Second-stage Selection

Instinctive selection - by animals with little or no learning capability. Selection criteria are transmitted genetically.

Learned selection - for animals whose past experiences guide current choices. Selection criteria are acquired through experience, including instruction by parents and peers.

Predictive selection - using imagination and foresight to evaluate the future consequences of choices.

Reflective (normative) selection – in which conscious deliberation about values influences the choice of behaviors.

"Free Will" as first "Free," then "Will."

All our thinkers separate free and will into two stages.

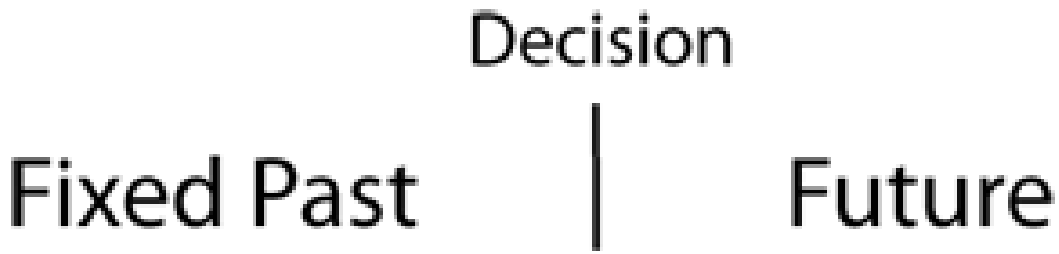
1) *Freedom* arises unpredictably from the creative and indeterministic generation of alternative possibilities, which present themselves to the will for evaluation and selection.

2) *The Will* is adequately determined by our reasons, desires, and motives - by our character - but it is not *pre-determined*.

Note that already in 1690, John Locke had separated free from will, because the adjective "free" applies to the agent, not to the will.
"I think the question is not proper, *whether the will be free*, but *whether a man be free*."
(*Essay Concerning Human Understanding* , Bk. II, Ch.XXI, On Power, section 14)

What If We Had Just One Stage?

Determinist philosophers say an *action could not have been otherwise*, given the "laws of nature" and the "fixed past," i.e., the exact circumstances immediately preceding the decision.



This is because their decision is a single point in time.

We Need Time To "Do Otherwise"

In a two-stage model, the decision is a process with a temporal sequence, first "free," then "will."

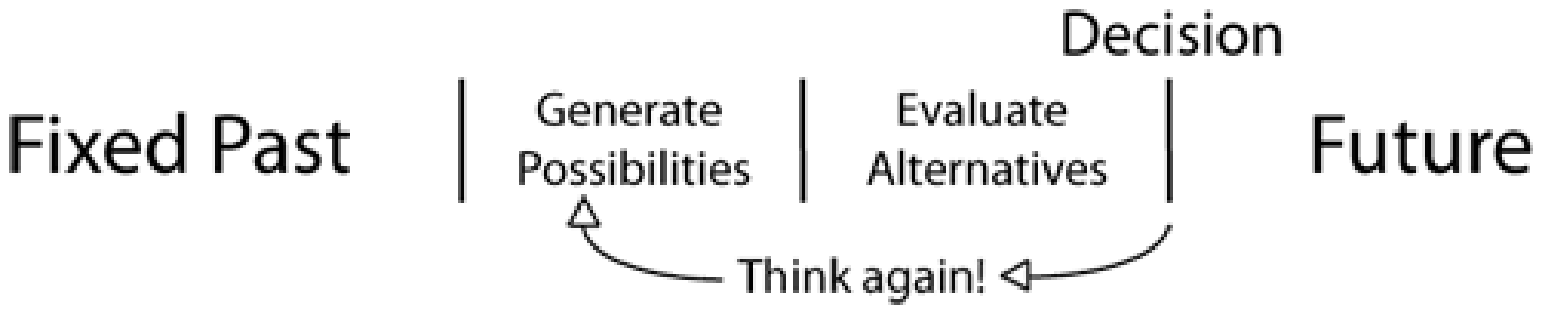
Our thoughts *come to us* freely.

Our actions *go from us* willfully.

We Can Even Have "Second Thoughts"

Note that a decision is not determined once we generate the alternative possibilities.

If our evaluation finds the alternative possibilities unacceptable, and if time permits, we can always go back to generate more creative ideas.



But We Are Not *Always* "Free"

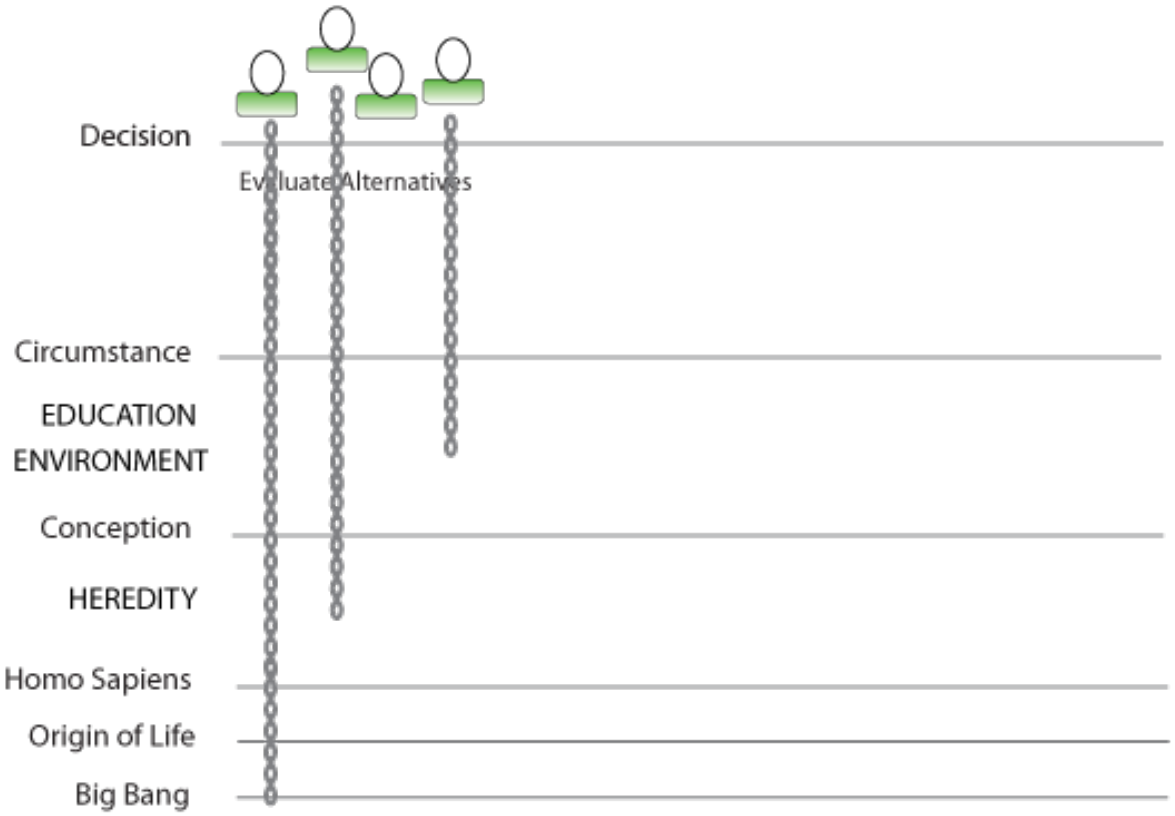
Daniel Wegner is right that many of our decisions are made automatically and for reasons we may not understand.

Our "conscious will" often makes up reasons for our actions, after the fact. There are always many possible causes for any event in the world, and human actions are no exception.

But we can identify the kinds of causes, and see how the two-stage model leaves room for creativity and free will, despite the existence of causal chains that go back to our childhood and even before we were born.

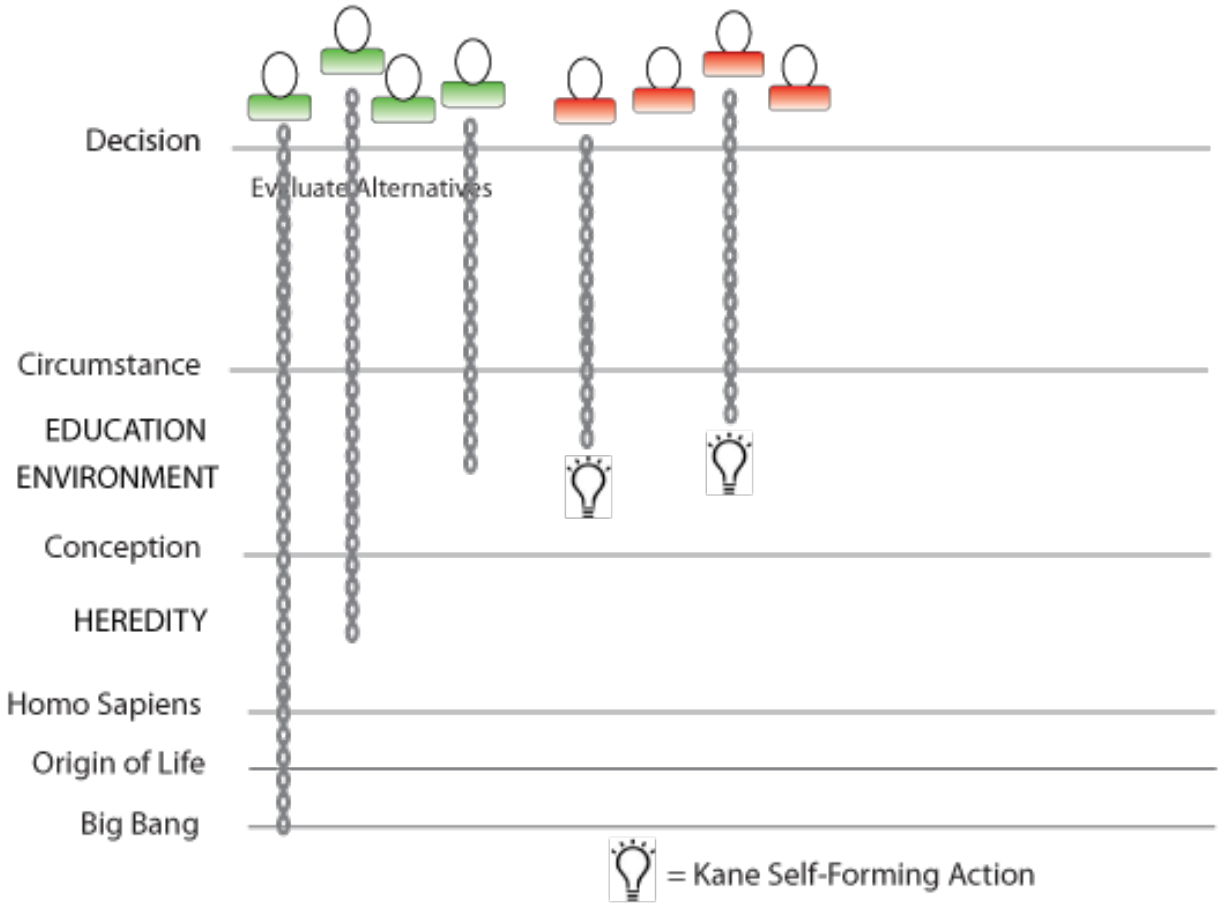
Multiple Causes in the Mind

Bernard Baars' audience in his Theater of Consciousness ≈ Dan Dennett's functional homunculi with their causal chains



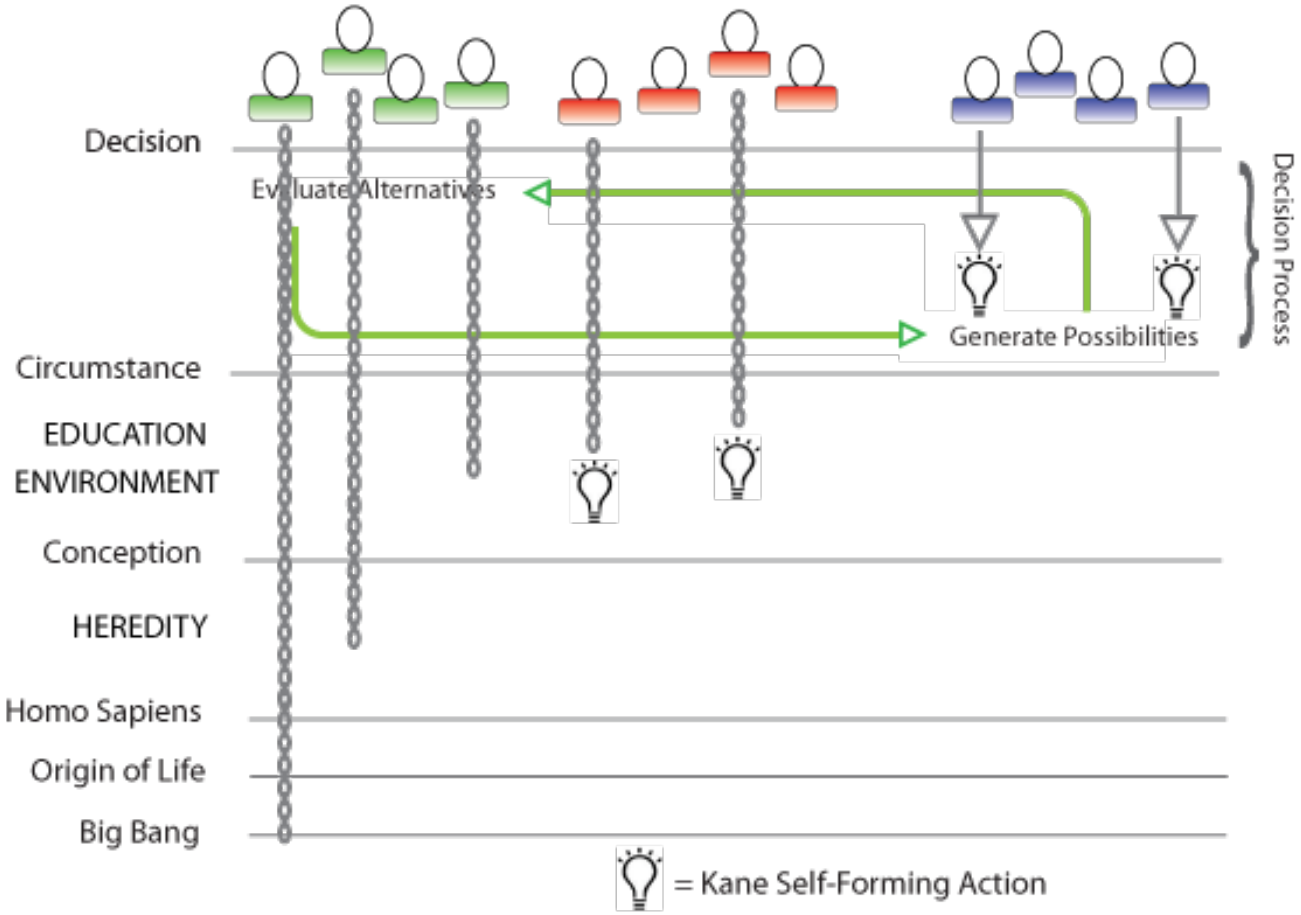
Multiple Causes in the Mind

Bob Kane's Self-Forming Actions add their own causal chains



Multiple Causes in the Mind

The Two-Stage Model adds new alternative possibilities,
- after the Circumstance and before the Decision



How I Improve the Two-Stage Model

Previous two-stage models could not locate a single quantum event in the brain or synchronize it to make a decision free (uncaused) yet provide agent control.

My model does not rely on a single quantum event for each willed decision. That would make the decision random.

The source of randomness in my model is the ever-present quantal and thermal noise that affects the creation, storage, maintenance, and retrieval of information in the mind, as it does in any information-processing system.

Compare James's "blooming, buzzing, confusion"

Random Quantum Events in the Brain?

Molecular biologists are understandably very skeptical about quantum indeterminacy in the brain-mind. Neurons are macroscopic objects with the order of 10^{20} atoms. How could one random atom affect anything?, they ask.

One answer is that there are trillions of quantum events in the brain every second. Another is that biological systems have evolved to the quantum limit. An eye can detect a single photon. A nose can smell a single molecule.

We argue that the brain has found an evolutionary advantage in quantum indeterminacy and thermal noise.

Creativity and Free Will

Normally random noise is the enemy of information, but it can be the friend of freedom and creativity.

Noise generates alternative possibilities that are the source of human creativity. They make us the authors of our lives.

We normally suppress this creative noise.

But we are perhaps most *free* when we let the noise in, when we *dream*, when we *imagine*, when we *create*.

To Sum Up

Free Will is ***Incompatible*** with *Pre-determinism* and with *Indeterminism* in the Choice itself.

Free Will is ***Compatible*** with a *Limited Indeterminism* and with an *Adequate Determinism*
(*i.e.*, *determination* by reasons, values, and desires).

Might compatibilist philosophers accept the model?

On Giving Compatibilists What They Need

Given the stark choice between determinism and indeterminism, compatibilists understandably choose determinism,
so that their decisions are "determined" by evaluations of their reasons, motive, and desires, in short, by their character.

The Two-Stage Model provides all the "determination" of the will the compatibilist wants and needs, but none of the "pre-determinism" that threatens agent freedom.

But can compatibilists accept the *limited indeterminism that* we have in quantum physics and the real world? It provides the creativity without threatening agent control and responsibility.

Compatibilism Corrected (1)

Free Will is Compatible with what I call *Adequate Determinism*, the everyday determinism of classical physics, by which I mean the Newtonian mechanics that we use to send men to the moon, with no concerns about quantum indeterminacy.

Adequate determinism provides the *determination* (but not pre-determination) of the will required for responsibility.

R. E. Hobart's 1934 Mind article was actually titled
"Free Will as Requiring Determination and Inconceivable Without It."

Compatibilism Corrected (2)

Free Will is also Compatible with some *chance*, the *Limited Indeterminism* that is required for the generation of new ideas.

Indeterminism provides *alternative possibilities*, one of which can be selected by a will that is *adequately determined* by our reasons, motives, and desires.

Comprehensive Compatibilism?

Compatibilists might like to call this model *Comprehensive Compatibilism* because it is compatible with *both…*

the *Adequate Determinism* they always wanted - to provide *determination* by our motives, reasons, values, and desires,

but also the *Limited Indeterminism* we need to generate *alternative possibilities*.

The *Question* of "Free-Will"

In the chapter on Will in the *Principles* (which Bob Richardson described so well this morning), James said: (*his italics*)

Free will, "if it existed, could only be to hold some one ideal object, or part of an object, a little longer or a little more intensely before the mind. Amongst the alternatives which present themselves as *genuine possibles*, it would thus make one effective."

"And although such quickening of one idea might be *morally and historically momentous*, if considered *dynamically*, it would be an operation amongst those physiological infinitesimals which calculation must forever neglect."
(Principles of Psychology, vol.2, ch.XXVI, p.576)

The *Answer* for "Free-Will"

The *Will to Believe in Free Will* of William James may have been physiologically infinitesimal *dynamically*, but it was indeed *morally and historically momentous*.

Amongst the many free-will alternatives which present themselves as *genuine possibles*, it is my hope that members of the William James Society and others here will help me to make his two-stage model "effective."

Thank you.

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