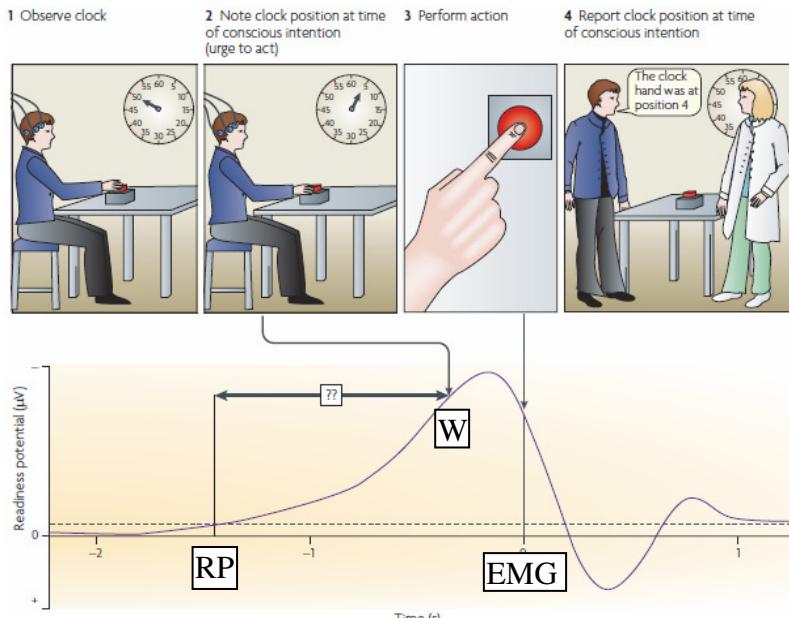


## Libet, Brain 1983



“Clock visible ticks spaced every 107ms  
 → press “at any time when you feel like doing so”  
 → Electrical activity of muscle measured  
 → continuation interval 500-800ms (discrete to 15ms)  
 → “within a few seconds” report clock as they remember it at an event

- 2 modes of reporting:
- absolute (number)
  - order (earlier/later than a given position)

## Results

- Type I: -700ms. preplanning was reported
- Type II: -500ms, spontaneous/capricious instructions
- Type III: -250ms

## Conclusion

1. “It is clear that neuronal processes that precede a self-initiated voluntary action, as reflected in the readiness-potential, generally begin substantially before the reported appearance of conscious intention to perform that specific act.”
2. “some neuronal activity associated with the eventual performance of the act has started well before any *recallable* conscious initiation or intervention could be possible.”
3. “the brain evidently ‘decides’ to initiate, or at least, prepare to initiate the act at a time before there is any reportable subjective awareness that such a decision has taken place. It is concluded that cerebral initiation even of a spontaneous voluntary act... can and ***usually does begin unconsciously***” (1983)
4. “We do not hold people responsible for actions performed unconsciously, without the possibility of ***conscious control***.” (1999)

## Libet's own considerations

**Consideration 1:** simultaneity of urge and clock position. Ss “observe simultaneously, for later report, the appearance of a mental event” & the clock. Prior entry for attending is ‘compensated’ by the S task

## Premises

1. subjective event in question is only introspectively accessible to the S himself, and this requires report
2. Each subject was instructed to “watch for” and report the earliest appearance of the awareness in question

## Readiness Potential

- Skull electrical potential
- proportional to sum of many thousands of neurones firing synchronously
- averaged across ~40 trials (nothing visible on single trials)

## Events:

- **W:** when you first felt the urge to move
- **M:** when you were first aware of actually moving
- **S:** time of a tactile near-threshold stimulus

$$\begin{aligned}
 (W - EMG) &= -204\text{ms} \\
 (M - EMG) &= -86\text{ms} \\
 (S - \text{stim}) &= -47\text{ms} \\
 (RP - EMG) &= -550\text{ms} \\
 (RP - W) &= -350\text{ms}
 \end{aligned}$$

**Consideration 2:** we can conceive/postulate conditions that might introduce discrepancies with actual-vs-reported times of awareness:

- it is possible only the end of the mental event is accurately judgeable though subjectively no difficulty was raised and Efron 1973 found perceptual onset latency is constant wrt length of stim and perceptual offset latency varies when stim duration < 150ms
- ‘preawareness’ that one is preparing to perform the voluntary act “would mean that the reported W times were earlier than they should have been” and W-RP is even more negative.
- Possible earlier nonrecallable phase of conscious urge – not stored in STM. but Ss don’t need to store event itself; just clock position (S controls for this) and would be hypothetical and ***not testable***.

**Consideration 3:** Reasons for believing valid

- 2 converging methods
- subjective and objective ability to distinguish W from M
- similarity of RP in different blocks

### Experimental Inadequacies

- Suggestive force of the experimenter (**Gilberto Gomes** (Brasil) *Consc&Cog* 1998)
  - Breitmeyer: performed the experiments “without awareness of intent to act. By requiring subjects to attend to awareness of intent, Libet may have imposed intention artificially.”
  - Scheerer 1985: “In introspection we often find those events that we have been led to expect”
    - Libet justifies with subjective reports – occasionally some Ss are “taken by surprise” as if the movement had arrived “on its own”
    - Libet says subjects had no difficulty in distinguishing W and M moments.
  - But this does not mean that the decision to act and the act itself are experienced as discrete events.
  - And some Ss felt a difference in “mental set” for W and M tasks
  - **Hacker:** PFN → finding is merely that, people can find feelings of intention/urge to move, when they are asked to, though such things don’t actually occur normally. “The feeling reported is not what makes their movement voluntary”
- Extensive training: cites differences between subjects who did M then W, vs W then M
- Latency → can’t be certain of times; in particular simultaneity
  - S is near threshold → the latency for awareness of S probably >> latency for perceiving the clock face.
  - Clock is a complex shape → latency for perceiving clock position >> latency for simple S
  - “Since the reported clock-times are somewhat unprecise assessments done by the subject, to which we should add an unknown value, we conclude that we can attach no value at all to such reports as an indication of the real time of occurrence of the conscious experience”

### Interpretational and Logical problems

#### Alternative Explanations

- Is it problematic that W occurs after RP onset? Haggard & Libet 2001:
  - “an unconscious gap of ~400ms between onset of the cerebral process and when the person becomes consciously aware of the decision or wish or intention to act. If the ‘act now’ process is initiated unconsciously, then conscious *free will* is not doing it”
- **Gomes:** RP is for all spontaneous acts, whether conscious or not.  
Libet’s **Divided attention** + spontaneous movt experiment: Comparisons of trials on which Ss reported being *not conscious of having moved* → similar RP.
  - But Libet explains it as amnesia
  - Amplitude greater & onset later for conscious movts., and there is dip at +10ms.
- RP represents urge, not decision/intention: **Alfred Mele** 2005  
Libet’s **Veto experiment**: Ss plan to press at a given time, but veto it
  - Veto RPs are type I until 150-250ms before preset time

- Concludes RP associated with preparing/initiating an action at -500ms, but Ss can still exercise free will in cancelling it ~-200ms.
- Mele on Vetoing: one cannot “intend to A” and “not intend to A” simultaneously. Perhaps they have an urge. → what is vetoed is not an “intended motor action”
- Unconscious events tracked by RP are better identified with urge/desire, not intention/decision.
- Final phase of RP could correspond to proximal intention – absent in veto
- Proximal intention is apparently formed between RP onset and action, and “for all Libet’s data show, those intentions may be consciously formed or acquired”.
- “Who would have thought that conscious free will has the job of producing urges?” – the early part is not a decision; → Libet has not shown that *decisions* are not consciously made
- the time of ‘act now’ is like when you start baking a pizza.
- Processes have parts: the ‘act now’ may have an early, distal, unconsciously initiated component – and a later, more proximal, consciously initiated component.
- “that urges to do things arise unconsciously – urges on which the agent may or may not act about half a second after they arise – is no cause for worry about free will”
- **Clark** 1999: “If unconscious RP must precede initiation of action, why does it not equally need to precede the vetoing of an action?”
- **Hacker**: reductio “Libet’s theory would in effect assimilate all human voluntary action to the status of inhibited sneezes, or sneezes which one did not choose to inhibit.”
- Is it sufficient that *distal intentions* are conscious?
  - **Mele**: Intentions can form as close as 230ms before act (e.g. simple RT), if there is no decision (no uncertainty). Stimulus + Conditional intention to act on stimulus → intention. Alternately, there may be no proximal intention, and Stim + conditional intention → action. So in Libet, maybe urge + conditional intention → action
  - If intention is at work, then it’s “a good bet they are acquired around time W”
  - **Flanagan** 1996: ‘big picture’ decisions may be consciously initiated, while details may be left to subpersonal processes. → responsibility tracks back to Ss “setting themselves” to respond as asked
  - **Haggard** + Libet JCS2001: “Though we do not consciously initiate actions, conscious intention may coincide with the *specification* of action.” (LRP) → a role for free will?
  - **Hacker**: going along with preplanned intentions is voluntary, even without proximal intent
  - **Schlosser**: Moving to a distal intention only “pushes the problem one step backward” – distal intention may also have an unconscious precursor.

### Interpretation With Respect to Free Will

**Searle**: “there’s no mental reality to the formation of a RP” – it does *not* indicate an unconscious mental phenomenon

**Gomes**: Allows that RP is “a consequence of neural processes that correspond to mental events” (may be subconscious) → “one would be inclined to consider it as the *cause* [of a movement]”

“but the cause of a voluntary movement is usually considered to be a conscious decision”  
 – What is the relation between decision & awareness?  
**“conscious decision”** = 2 senses:  
 conscious because  
 1) it results from conscious awareness of something  
 2) one is conscious of *it*

Conscious (1) control functions may occur at first nonconsciously (2), after conscious awareness of intention to act, and then become conscious themselves.  
 1) nonconscious decision to act  
 2) consciousness of decision to act  
 3) nonconscious veto (this is conscious control because it results from 2)  
 4) inhibition of movement  
 5) consciousness of veto

**Neil Levy** (Oxford Centre for Neuroethics), JCS 12 p67, 2005

Libet's impossible demand: **If we do not exercise conscious control, we do not exercise free will.**

- “[Libet’s] challenge to free will is a challenge to compatibilists and libertarians alike” – “he is claiming that, in some sense, we do not originate our actions at all”
- “If we are not conscious of at least some of our decisions to initiate an action at the very moment of initiating it, we do not exercise free will in initiating it”. But:
- **Rosenthal**: volitions need not be consciously caused in order for them to count as free. (e.g. as long as they fit with our conscious self-image). But
  - My act “not fitting with my self-image” can’t defend against being responsible for the act
  - Simply accepting I have Tourettes does not make me responsible.
- **Dennet** 2003 defence: self should not be identified with brain parts, or the conscious subsystem; rather, “the entire set of cognitive processes, personal and subpersonal”. “You are not out of the loop; you *are* the loop”. But
  - passing thoughts and sudden urges don’t fit. Utilisation behaviour, Tourettes, states of automatism/disinhibition } not considered as free.
  - **Freeman** 1999: It is valuable for me to hold myself responsible for all my actions, but it seems unjust for others to hold me responsible for actions over which I had no control

Requirement that we need to consciously initiate our actions, to be free: impossible to fulfil

Levy argues we can **deduce** that, if conscious decision-making is a condition for free will, we can’t have it.:

- **Phenomenology**: Dennet “We do not witness [our decision] being *made*; we witness its *arrival*”
- **Exclusion** of what conscious deliberation could be like. If deliberation occurs consciously (eg choosing a job), the information upon which deliberation operates (*weightings* of favouring particular reasons) must come either from either
  - subpersonal processes, independently of deliberation. We consciously ‘recognise’ the subpersonally generated weights.
  - higher-level reasons – but then these reasons need weights too, which must be independent of conscious deliberation.
  - if they are neither reasoned nor unconscious, they could only be arbitrary
- → “If there were conscious will, it would not be free will; it would be mere random chance”
- Infinite **regress**: “the demand that we exercise conscious will seems to be the demand that we control our controlling. And that demand cannot be fulfilled.”
  - the actual decision is not made consciously “the conclusion that the first or second set of reasons is weightier – is simply reported to consciousness”
  - Saying we can decide to veto these is subject to same issue
  - Conscious deliberation can help to select motivations: deliberation as ‘realising’, ‘comprehending’. But then, I only control it “inasmuch as I can cease to engage/persist in it”

➔ Our failure or success at being conscious of our decisions as we make them is irrelevant to our freedom, since those decisions must be the product of unconscious mechanisms in any case.

**Hacker**: “Saying that someone did something because they wanted to is not to give a causal explanation”. William James is confused: ‘willed action’ as ‘action performed when we consciously pay attention to its selection’

- It is neither necessary nor sufficient for an act to be voluntary that it be preceded by a feeling of want/urge/intention
  - a. not necessary: e.g. picking up a pen to write is voluntary;
  - b. not sufficient: e.g. sneezing is involuntary (can be inhibited but not caused by volition)
- “a movement that is *caused* by an urge is precisely *not* a voluntary action” – e.g. I phi’d because I had the urge to: the ‘because’ is not causal

**Schlosser**: Return to analytic definition of freedom = (1) Absence of constraint & (2) Ability to do otherwise. Schlosser argues that (2) can be expressed in a form compatible with determinism, using counterfactual conditionals: “S can do otherwise  $\Leftrightarrow$  S would do otherwise, if S *<had chosen/wanted>* to do otherwise” + reason-responsiveness. He claims it is immune to Libet expt.