entire past experience. The 22,440 trials in this experiment are nothing like a randomized clinical trial with 22,440 unrelated people who do not interfere with each other. It is, nonetheless, a randomized trial and randomization can form the basis for inference, as it did in Fisher's (1935, §2) prototype trial of one lady tasting eight cups of tea.

The trial has a second important feature. Not all trials are "successful." In the first instance, in a stop trial, the subject is instructed first to "go" — press the button — and then the instruction is cancelled. In a stop trial, if the random time between the circle and the X is longer than usual and the subject is quicker than most, then she may press the button before the instruction is cancelled. In this case, even though the trial is randomized to be a stop or treated trial, her brain should exhibit the response typical under the control condition, because nothing she experienced distinguished the trial from a go trial. In addition to the situation just described, it may also happen that the subject is unambiguously told to press the button but does not do so, or is unambiguously told not to press the button but does so anyway, perhaps because the subject is momentarily distracted. Also, a subject may exhibit correct behavior with erroneous thoughts, say failing to press the button because of distraction or fatigue rather than inhibition. Expressed differently, whether or not a trial is successful is not generally a visible property of the trial, yet we are confident that human subjects do not always think the thoughts an experimenter requests. If a trial is not successful in any of these senses, then the requested cognitive activity may not take place, so there may not be the change in blood oxygenation that would typically accompany the requested cognitive activity. Although a stimulus asks for a cognition, we cannot tell whether the cognition took place or not, because we see only behavior and neurological response, but it is unlikely that every stimulus elicits its intended cognition. We might think of responses as a mixture of successful and unsuccessful trials, where successful trials produce a specific pattern of