7. What is determinism? Do we have good reason to think determinism is true? If it were true, could we still have free will? What does it mean to have free will? Defend your answers.

Determinism is the philosophical position that every event has a cause, and can thus be causally explained by specific governing laws. As it relates to the mental events and choices of humans, determinism seems to stand as an ominous threat over free will, and the concern over its loss in light of advancing physical and psychological understanding, has resulted in philosophical papers addressing these concerns. One such paper by Ayer, in Chalmers' Philosophy of Mind text, will serve to launch my examination of the topic. I shall discuss the plausibility of determinism, explore what is meant by free will both from Ayer's perspective and my logically derived position, and reconcile what it actually means to have free will with the aforementioned developments.

Ayer's "Freedom and Necessity" begins on page 662, and opens with an overview of free will, describes its relation to determinism, goes on to discuss moral responsibility, wraps up with consequences and negation of strict determinism by relation to tautology, and introduces a new term to support his argued compromise. On pages 662 to 663, he states, "But why should it be supposed that every event must have a cause? The contrary is not unthinkable. Nor is the law of universal causation a necessary presupposition of scientific thought." Though assisting his probability-based defense of free will later, this position is insupportable as we will soon see. Ayer claims that, "the determinist must still justify their position of all human actions subject to causal laws." Must he justify it indeed? All else falls before inspection. So should increasing levels of complexity of cause and effect. Through science, we explore and attempt to understand the unknown. Science attempts to ascribe reasons for phenomena.

If unexplainable by science, then answers can only be vague descriptions, not actual quantifications. Passing probability descriptions as real theory is no theory, but simply descriptions of experimental data. Simply describing where a particle will probably be, as a common example in particle physics, can be a workable mathematical model, but it is not a valid theoretical description of reality. That such beliefs are common in modern physics is no justification for their veracity as real phenomena. As Einstein noted, "To the extent that mathematics describes reality, it is not certain; to the extent mathematics is certain, it does not describe reality." Repeatable groupings of data can certainly be extrapolated into theory if there are specifics and quantifications involved. The claimed impossibility of knowing a particle's position and momentum simultaneously, however, is due to an inability to measure properly using presently known detection equipment, and although experiments suggest surprise and bewilderment abound at every turn, history has shown that expanding complexities fall to simpler and more elegant theories given time. Tycho Brahe and Nicolaus Copernicus served to overturn the great complexities of Earth-centered celestial mechanics by proposing a much cleaner and simpler description - heliocentrism.

Although quantum mechanics has merit in probability calculations, it is an incomplete picture and will be overturned for a more elegant explanation of fundamental particle interactions, just as Einstein's relativity trumped Newtonian mechanics. By adhering to chance and claiming they can't know, and inventing new particles to explain away the increasing multitude of anomalies to their underlying theory, current particle physicists show that what they have at this point has become more belief than science. Thus, as with every other time in history

when this has occurred, an upcoming certainty will wipe away the ambiguities of quantum mechanics, and determinism will march on.

As this paper's topics are interrelated, to answer them properly requires a joint development, so I will here introduce some additional important points, and return to determinism shortly. Although Ayer's paper does discuss cause, chance, freedom of choice, and how events subject to chance may impose no responsibility, he does not really resolve the dilemma of free will and determinism. On page 664, he mentions, "it looks as if the admission of moral responsibility... tends rather to presuppose it [determinism]." And also, "to retain the idea of moral responsibility, we must either show that men can be held responsible for actions which they do not do freely, or find some way of reconciling determinism with freedom of the will." Ayer's freedom versus constraint discussion is resolved into a revised statement on free will, which can be summarized as, "You are free if your action was voluntary rather than compelled." Called Soft Determinism (Hard meaning no free will), this position is a matter of belief and perspective, but as I will show, there is a way of reconciling his positions.

Returning to determinism from the point where Ayer suggests that cause does not mean compel, I will say that this holds true only in the sense that we do not yet understand the complexities of choice for that person. He wraps up on page 666 by using the probabilistic nature of event determination to say that if there actually exists only the probability, not the necessity, then he is not the prisoner of fate. But Ayer goes on to conclude that this is still tantamount to a tautology of behavior prediction, "he will do as he will do." This attempt to invalidate Determinism weakly hinges on his adherence to the veracity of quantum mechanics' probability and thus apparent randomness, though he does use it as a valiant attempt to retain free will.

With this background we can now address the issues head-on, in detail, and find the traction to arrive at sure footing at the conclusion. Starting with our perception of choice, we are indeed able to notice when we have an internal propensity to desire to choose an action, but through an act of determined will we decline to act upon that desire. However, can that not be explained as a level of propensity to act contrarily so as to test other options? As Millikan points out in her paper, "Biosemantics," one of an organism's methods of improving, genetically over time as a species upgrading survival ability, is to act or react according to the signals or signs from either their environment or other members of the species. To humans, this can also include individual choices as in learning behavior boundaries acceptable by peers or family or the society in which their genetic line has been for many generations.

Propensities towards behavior can become encoded like instincts, such that if that person is supplanted into a foreign culture, that person may function by choice, but influenced by genetic propensity. Are we to judge that person morally for acting by his or her "free will," if such was genetically driven? Propensity suggests a deterministic causal agent, yet the moral judgement could be justified in what is deemed, by consensus, to be a beneficial or detrimental behavior within the development of the host society. If their behavior is driven by a propensity to choose, is it still "choice?" Directly, yes, but these factors are determined by a complex conglomerate effect of physical experience, genetic propensity selected for over generations, current nutrition of the person, education, parenting, role model selection, and many other external factors, all of which cause considerations within the inner world of mental modeling, whether that modeling be simple (by relation to prior similar experience) or complex.

This mental modeling leads the person to appear to consider his or her choices, the winning decision being determined by the inner workings of the person's mental modeling system coupled with the prior-discussed experiences and beliefs. In many cases, the mental modeling and choice reflection seem to occur almost superficially when the tendency is for a reaction due to body memory in association with past-similar brain states or strong genetic tendency (e.g. jump or become hostile when frightened). But when not a reflex or habit, the mental modeling phenomenon does give the appearance of choice.

Until we can identify and compare the multiple complexities of a mental model, we can only deal in probabilities, just as in quantum mechanics. And though we have no guarantee of arriving there, our past performance suggests that we, or the tools we build, will certainly march forward to address this task. The advances in brain science and psychology continue to progress while it seems that mental events, modeling, and our choices, only grow in complexity with regard to the amount of data used to make our "choices," while the types and classes and biochemistry of interactions remain the same. In that light, the forward progress to understanding the mechanics of choice seems to be approaching the goal, and this suggests that Determinism is true. Were it not, the mechanics of choice would be receding at a similar rate. Our civilization's experience shows that anything which fails to continually evade scientific scrutiny eventually falls before it, and so our increasingly intricate understanding in fields from neurophysiology to biology to psychology, suggest that we can expect to understand choice-making mechanics, then as our comprehension expands, varying levels of dataset-driven choices. Thus, determinism is supportable, yet as we see in religion with God(s) being relegated into increasing levels of abstraction (God no longer controls the weather) as science advances, free

will seems to contain sufficient hierarchies of complexity to suggest that as we gain the abilities to deterministically explain varying levels of choice, so will we likely relegate our belief in free will to further levels of abstraction, appeasing our human need to feel we have control over our futures.

In that sense, free will may be as unquantifiable a belief as our belief in God, and may be linked. The crux of God is that he has, and enacts, his will. We act, or so we prefer, by our own will, which we call free. Both God's will, and our own free will, are unprovable abstractions, and it is therefore plausible to assert that free will in itself cannot be disproven, and is thus immune from destruction. Determinism and free will are thereby not incompatible after all, and science is free to explore the nature of choice without threatening our belief in free will.

Further, we can now propose that to have free will means to simply believe we have a choice. While the mechanics of choice are eventually explicable via determinism, increasing in detail as we progress our understanding, to the degree that we remain ignorant of the intricacies involved in a choice, then we feel it was self-derived and not compelled. Free will seems, then, to not actually exist, any more than an ant has free will, and just as we can understand all details involved in an ant's decision, a being with far superior capability would be able to predict our behavior. There is nothing existent biologically to suggest that we are immune from being understood by science. So, just as Ayer used the term Soft Determinism, I will propose the term Soft Free Will to indicate our actual situation. I hold that by Determinism, all is explicable, and while there is no support for Hard Free Will, it is certain that Soft Free Will does exist, and will continue to exist by virtue of our ability to believe in it.