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August 2005
Music and Emotion

Daisy Ko

Why do we continue listening to music that makes us feel sad, upset, or angry? Jerrold Levinson argues that although some types of music do cause negative emotions, we continue to listen to them in order to reap various benefits. Peter Kivy, on the other hand, circumvents the problem by arguing that it is not the music that is the direct cause of these negative emotions. In this paper, I offer an overview and a critique of Levinson’s arguments. I then explain Kivy’s theory, and attempt to validate it with examples of my own.

In Music, Art, and Metaphysics, Jerrold Levinson explains the paradox of music and negative emotion: why is it that we continue to listen to music that causes us to feel sad, angry, or any other negative emotion? Levinson argues that although these “sadness-reactions” are not up to par with “full-fledged emotions,” there are still various benefits that we reap from listening to music that makes us feel sad (Levinson 1990). In contrast, Peter Kivy explains in The Corded Shell that it is not the music itself that causes these emotions. Rather, our experience of these emotions is an identification of the type of emotion that music is being expressive of. He compares “being expressive of” and “expressing” to a Saint Bernard with its droopy face, and a person shaking their arms and shouting, respectively. The Saint Bernard is not always sad, but its face always appears sad in that it is always droopy, and the corners of its eyes are turned down. If a person were to be angered, and start shouting and waving their fists in the air, that person is said to be expressing anger, because the person actually is angry (Kivy 1980). Similarly, music is expressive of an emotion, rather than expressing that emotion. Kivy concludes

1This article includes some special features, which may be viewed on the UWUPR website: <students.washington.edu/jetsam/UWUPR/archive/vol2.html>.
and free will should also figure out luck while he’s at it. As it turns out, the Berber Chieftain thought that I had promised to marry his daughter, and came to the rescue of his future son in law. I, however, thought that I was merely trying to convince him not to kill me after he caught me in her tent. Either way, it would appear that we had some unfinished business and he wasn’t going to let the Legion interfere with it.

The next day, I found myself kneeling below the Berber Chieftain’s sword, and I could not help but think that there was no way any of this could have been avoided.  

FATE AND FREE WILL

DAISY KO

that since it is not the music that is causing these negative emotions in and of itself, there is no paradox.  

In the following pages, I will first summarize Levinson's explanation of why we still insist on experiencing these negative emotions, and then provide a rebuttal against it. After discussing Kivy's theory, I will then attempt to validate it through various examples. I hope to show the reader that it is Kivy's theory, rather than Levinson's, that more accurately explains our emotional experiences when listening to music and why we keep listening to music that makes us feel a negative emotion.

♫

When we listen to works such as Barber's *Adagio for Strings*, Monti's *Czardas*, or even Beethoven's *Moonlight Sonata*, we are left in a contemplative, melancholic state, or perhaps even moved to tears. But why is it that we still continue to listen to these works, experiencing these emotions over and over again? This is the question that is being addressed in Levinson's *Music and Negative Emotion*.

Although Levinson agrees that one could never experience a full-fledged emotion just by listening to music, “etiolated emotions” could still be experienced at a lesser degree. Even if I were to listen to the most heartbreaking melody coming from the weeping of a single, finely tuned violin, it could not fill me with grief as much as say, the loss of a loved one would. However, that still leaves the paradox unexplained because although that same emotion is not felt to such an extent, the same distressing emotion is still being experienced.

Levinson does not think that Kivy's theory, which implies that there is no such paradox, sufficiently addresses this paradox. Kivy holds that, “[w]hat occasionally seems to us to be the experiencing of something like sorrow, while listening in anything like a correct manner, is in fact always only the vivid grasping of sorrowfulness in music” (Levinson 1990). Levinson argues that, even if there is a difference between the experience of an emotional response and the identification of it, there is still the fact that through identifying and perceiving that emotion, that emotion is still being experienced.
Because the emotion is still being experienced, the paradox is still an issue that needs to be dealt with.

Levinson thus proposes his own theory, which begins by positing that there are three conditions by which to recognize and obtain an emotional response. A song must be familiar to the listener, but not to the extent that its effects have worn off. Also, one must adopt an “aesthetic attitude” by which to focus just on the music. A third condition is that the listener must be willing to identify with what he or she thinks is being conveyed in the music (Levinson 1990). If all three conditions are met, then there may be an emotional response in the listener. Although this emotional response is not a full-fledged response, Levinson claims that it still has some benefits in and of itself.

What are the reasons why we would continue to seek out these emotional responses? One is that an emotional response is actually an aid to our understanding of a particular song. Emotional responses would aid in forming emotive descriptions of a work. The other reason is due to catharsis: “negative emotional response to music is desirable because it conduces to mental health, improving the listener’s future self by administering momentarily painful doses of emotional medicine in the present” (Levinson 1990).

Levinson’s solution to the paradox thus amounts to the claim that there is an advantage to experiencing emotional responses to music that is not present in full-fledged emotions. Since they are experienced by listening to music, they do not come with any real-life implications. Levinson derives three benefits from this advantage. The Savoring Feeling allows us to savor these feelings, just for the sake of experiencing them. He likens it to wine-tasting. Each emotion is unique and would be a worthwhile endeavor to “sample” as many as one would like, especially with no repercussions. Another benefit is the Understanding Feeling, which allows us more exposure to, and thus more experience and understanding of, various emotions. The last is that of Emotional Assurance. That is to say, this is to reassure ourselves that we are still capable of feeling emotion, perhaps in an attempt to reassure our humanity.

Furthermore, Levinson suggests that, although emotional responses to music are not the same as real-life emotions, there are some benefits to imagining that music-emotions actually are on the

I would like to describe our relationship with fate and free will like playing a game of chess. Of all the possible ways to begin a game of chess, it normally starts with the movement of one of the white pieces. It can also be safely concluded that the players will alternate turns by moving pieces in an orderly fashion, as prescribed by the rules of the game. These are analogous to Propensity, since they are the natural limitations of the game. As a result, the amount of possible permutations of game-play is limited, but within the possible cases there remains a wide variety of potential game developments. As soon as the first move is made, the player has, in effect, eliminated all the possibilities of game-play that began with the movement of any other piece. Once the second move is made, the possibilities of the game are reduced even more. Furthermore, as moves are made certain pieces affect other pieces by placing them in danger, giving them opportunities, or creating patterns that are recognizable to the players.

Herein, Probability enters the picture. This is not probability in the mathematic sense, but it is similar. Mathematic probability calculates the likelihood of a single outcome based on the possible outcomes and their historical interactions, thus producing ratios of likelihood. Although we cannot form such calculations about the human will, we can create similar speculations about influences on the will. Although we can’t say for sure whether a player will respond to a threat to his or her queen, we can say that they probably will.

As the game progresses, more and more possible avenues of game-play are eliminated until, finally, there are no options left, and game-play ceases: either in a win for one player or the other, or in a stalemate for both. At this point, the game ends and its result passes into history. Checkmate, I thought to myself as I stared down the barrels of the rifles. Although I can’t say I had no say in the matter, there definitely isn’t anything I can do about it now. Eyes open, staring hard at Commandant, waiting for him to say the word, I see his lip quiver and he takes a deep breath. He almost shouts the final command when all of a sudden the fort is in chaos. The horses of the Berber tribesmen have broken into the courtyard of the outpost and are swarming all about; one swoops down, picks me up, and drags me back to the Berber camp. Admittedly, just when you think you have everything figured out, something strange happens. Anyone who is going to figure out fate
The answer may seem banal and obvious, but that only makes me wonder more at why no one has said so. Yes, we have a will—we guide our actions and make choices—but certain things are beyond our control, which accounts for our intuitions of fate. My last thought before the execution is that fate and free will actually converge to create *limited will*. In this limited will, there are four parts: Propensity, History, Probability, and Opportunity.

Propensity is a word I borrow from Karl Popper, although I will not restrict myself to his usage, but only to his suggestion, of this word. Propensity is the natural limitation of a situation. As I face the firing squad, it is unlikely that anything will occur to defy the laws of nature. In this circumstance, the bullets have a propensity to be propelled forward, and my body has a propensity to die when the aforementioned bullets perforate it. The possibility that my flesh resists the bullets is imaginable, but impossible, and thus there is no propensity for it to occur. By the same virtue, if I were to flip a two-sided coin, there are only three possible outcomes: it could land heads, it could land tails, or it could land balanced on its side. It is not, however, possible that the coin could land both heads and tails, or that it could not land at all. Thus, it can be said that the coin has a propensity for one of three outcomes. This proposal, in and of its self, is not that controversial. It is only in trying to add more to it that Popper and others drew criticism.

I here leave propensity as establishing the strict physical parameters of possibility, and I will now move on to my other factors. Any possible choice to which we apply our will I shall call an Opportunity. There is a nearly infinite range of conceivable scenarios for any one situation. Only a fraction of these scenarios are realistically allowed by Propensity. Other scenarios are limited by interaction with History and Probability. History consists of the natural causes and effects that we are so familiar with. When I deserted from the Legion to join the Berber tribesmen, my actions eliminated the possibility that I have never deserted from the Legion. The consequences of these historical events create the influence that is Probability, which further restrains my opportunities to exercise my will. At present, it would appear that my opportunities have been narrowed down to only one grisly outcome.

What reason is there to want to experience a negative emotion when it is not necessary? Levinson’s claim about the reward of the Savoring Feeling fails to answer this. One could understand the desire to savor pleasant emotions, such as happiness and humor, but the desire to savor unpleasant emotions still remains unclear. Would we want to savor a bitter, distasteful wine for the sake of its bitterness or its distastefulness? Levinson claims that “in the detached context of musical response, it becomes possible for us to savor the feeling for its special character, since we are for once spared the additional distress that accompanies its occurrence in the context of life” (Levinson 1990). However, there is no detachment from “savoring a feeling” and the distresses that it causes. To know that a particular emotion is being experienced, it must be personally, not ostensibly identified. Take for example, anger. How would one know it is being experienced? It is through identification of one’s own anger, and displays of anger in other people. In time, one recognizes that anger is that state of mind which is accompanied by such feelings as frustration, angst, and rage. To savor anger then, is to experience the distresses that come along with it—the frustration, angst and rage, to name some.

Next, I believe that Levinson defeats his own suggestion for the reward of the Understanding Feeling. He states that “it is notoriously difficult to say what the knowledge of how an emotion feels consists...
in, but I think it is clear that such knowledge, whatever it amounts to, can be augmented by emotional experiences during or after occasions of music listening” (Levinson 1990). If we cannot identify what some knowledge consists of, how would we know that it will or will not be beneficial to us? In other words, if we are not able to identify something, it becomes virtually impossible to be able to apply that unidentified thing to any use. Furthermore, if we do not already understand that we are feeling a particular emotion at a given time, it is unlikely that we will be able to identify it as that emotion, whether it is perceived through music or through real-life. That is to say, if we do not already know that we are experiencing anguish (in real life or through music), how will we even be able to identify a particular emotional response to be that of anguish? For example, a piece of music could be interpreted as grief by one listener, and calmness by another listener. If these two listeners did not already know what grief and calmness are, then they would have agreed that music is expressive of one emotion. However, one would say it is grief and the other, calmness. The problem here is a misunderstanding, in that they are unable to correctly identify what it is they perceive. In incorrectly identifying it, the listeners would agree that the music is expressive of two different emotions, when in actuality there is only one. However, if the two listeners already know what grief and calmness are, then one can say that the music is expressive of grief, and the other that the music is expressive of calmness. In this case, the discrepancy is caused by the interpretation of the perception (as opposed to confusing terms and definitions).

Levinson’s third proposal, the Emotional Assurance, is likened to “giving our emotional engines a ‘dry run’. If there is something wrong with the plane it is better to find this out on the runway than in the air” (Levinson 1990). There are two points that I want to make in response to this. One is that even though it may make sense to make sure that one is still capable of feeling, is there not the danger of becoming jaded? For example, would Bordeaux from 1982 taste just as grand if a new one were opened once every week, as opposed to once every year? As pleasant (or unpleasant) as an experience may be, frequent exposure to that experience numbs its effects on us. The second point is that even if we do not feel emotion for a particular event, it does not necessarily mean that we are losing our capacity to

We have the amazing capability to abstractly formulate an intention (such as shooting a man at dawn), the ability to plan it, and, as I was discovering, the capacity to carry it out. This would suggest that our thoughts are conceived and organized, and that we can concentrate our efforts to achieve modest goals. How any of this could be possible without some sort of greater guiding force, such as human will, is just as baffling as the question of how the human will could exist in the first place. What is the probability that all our neurons would be so carefully organized that this whole scenario, which seems like we are deciding and acting on concepts, would be so carefully laid out, when we are really just following the causal chain of subatomic reactions to its conclusion? Why does it not happen, every now and then, that these reactions take our brains in unexpected directions?

Perhaps my court-martial could have gone something like this. I stand to have judgment pronounced upon me and the Commandant rambles on for quite some time before concluding: ergo, the fireman’s hat! At which point I rush up to the Commandant and give him a joyous kiss before proclaiming: My fish is medium rare; someone point me to a concierge! Of course, none of this makes sense. It would be front-page news if it happened in any court anywhere in the world. What makes this unexpected end to my court-martial not so likely in a probabilistically determined world? In order to convincingly argue that we do not think, but simply experience probabilistically determined fluctuations in our brain structure, one would have to also explain why those fluctuations adhered to the rules of grammar and did not diverge from one’s train of thought. To do that reaches far beyond what science currently knows and into the realm of faith-based speculation.

So in the end, as the soldiers raise their rifles and the command to fire is imminent, I will have to concede that perhaps there is something called will. I certainly do not claim to know what this will is or where it came from, but it seems that it is a necessary principle. It is necessary, not only in organizing our thoughts, but also in understanding our actions and thinking. After all, without it all human endeavors, including philosophy, become pointless. But suddenly it all becomes clear: we have will, but it is not free will.
live in a causal world. However, this is something of a tangent, since it does not realistically impact the discussion.

The long and short of Quantum (or Probabilistic) Determinism is that the world is made up of matter, matter is made up of atoms, and atoms are made up of subatomic particles. Subatomic particles obey certain causal (or at least probabilistic) laws. As a result, cause and effect, on a subatomic level, governs the behavior of all matter, which includes the nebulous gray matter from which our delusions of volition come. In this sense, when we believe we are making a decision, it is in fact simply a product of certain causes and certain effects among the subatomic particles in our brain. This is where physics dead-ends. It is the irreducible finale. For now, it is the last point that can be reached only with our logical tools and a belief in the material world. However, is a theory that amounts to a cosmic game of billiards enough? Is this a question that can be answered by science alone? I must admit, the force we would need to harness these subatomic particles with, in order to serve our will, is beyond my imaginative powers.

The Legion’s priest seems to sense my thoughts and solemnly walks out to me as the soldiers stand ready to fire. Have you changed your mind, my child? Do you have any sins you would like to confess before you are sent to meet with the Almighty? He asks me with the regal self-assurance of someone who does not have to put their convictions on the line. I look him square in the eye and grit my teeth. Not yet, Padre. Come back tomorrow and I’ll tell you for sure.

After all, I don’t need to make any leap of faith just yet. The problem with Quantum Mechanics, as well as with Quantum Determinism, is that it works well on a Quantum level, but transitions poorly to the macroscopic level. Quarks may jump in and out of reality and behave erratically, but things like chairs don’t. When I sit down, I presume that the chair I am sitting on will be there, and, most of the time, I’m right. When I’m wrong, very seldom is it because of quantum irregularity. What is more, it is easy to understand our mind as a product of reactions between particles in my brain, but then the nagging question remains: why are we so coherent?

1 Although, probability, used in a different sense, may well play a part later.

In *The Corded Shell*, Peter Kivy discusses his theory on the relationship between emotion and music. In the first chapter, he describes four ways to describe music. Two of them, the biographical and the autobiographical accounts, are irrelevant in that they fall back on describing the composer (instead of the music itself). Another, the technical account, leaves out the possibility for discussion among people that are not musically trained. The fourth option, the emotive account, remains as the best option available for everyone to be able to communicate about music.

First, Kivy explains the difference between expressing an emotion, and being expressive of that emotion. Expressing an emotion requires the expresser to be feeling that emotion in the first place. Being expressive of an emotion means that there is something portrayed that we perceive and interpret to be indicative of an emotion. When a song is said to be “sad,” is it expressing sadness (which Kivy refers to as an emotive expression), or expressive of sadness? If the song is expressing sadness, it could either mean that the song itself is sad, or that the composer is sad. Both options are implausible—a song is not sentient and so it cannot be sad, and to say that the composer is expressing his or her sadness through that song is
irrelevant to the discussion of music itself. “We came for a description of music, and we were given a description of the composer instead” (Kivy 1980).

Throughout The Corded Shell, Kivy explores various theories and extrapolates from them the premises that have been verified through practice in an attempt to build up his own theory. He begins by discussing the limits of an early account known as speech theory. There are two different speech theories, both coming from a different interpretation of the involvement of emotion: the arousal theory, and the cognitive theory. The arousal theory suggests that emotion is aroused in the listener by a recognition and emotional response to music which resembles the speaking voice when it expresses that emotion—the music is sad because it arouses sadness, the music is happy because it arouses happiness, etc. The cognitive theory suggests that music signifies a particular emotion because it represents those tones that the listener recognizes as being indicative of a particular emotion. The cognitive theory is based on the recognition of emotion, whereas the arousal theory is based on reaction to hearing the music. The main point here is that “the major operator in musical expressiveness—or at least one major operator—is a musical resemblance of some aspect of human expression” (Kivy 1980). Musical resemblance must be a part of human expression because it is created by humans, and is being communicated to an audience. Societies all over the world, both past and present, have developed their own song and dance forms to represent and express certain aspects of a particular culture to foreigners (or to reaffirm the aspects among a people).

When the expressiveness of music became “diluted,” the speech theories became more and more obsolete. To make up for it, new, mechanistic models were proposed. Of these, there were two major ones: the association of ideas, and Cartesian psychology. The association of ideas is basically that if in the past, one particular event always occurred with another, then one will start mentally connecting those two concepts together. Cartesian psychology is the belief that there is an actual, physical medium between the mind and emotions. What can be drawn from the existence of these theories is that there actually is more than just a speech theory, that “music bears resemblance to the ‘structure’ of our emotions in a wider field than the external world. There may be no physical cause for my conviction, but the Commandant’s upbringing in an austere French boarding school, the pressure of generations of military tradition, and a deeply ingrained sense of propriety and duty could all be seen as the causes that left him with no choice but to convict me and sentence me to death. Just as my peace-loving, humanitarian upbringing on the American West-Coast left me with no choice but to desert. Certainly, our cultural backgrounds and personal psychological histories do form influences, sometimes even overwhelming ones, but are these causes in the technical sense? After all, if my liberal cultural paradigm predetermined my desertion, how was I ever able to overcome it in the first place and join the Legion? Or despite everything in his upbringing, would it not be possible for the Commandant to also be suffering from a mental illness that made him think he was in fact Mother Teresa and, as such, duty-bound to show mercy and grant me clemency?

In fact, asserting that his decision was predetermined would probably upset the Commandant more than anyone else. After all, if we reduced his act of judgment to a mere statistical inevitability, it would render pointless all the notions of chivalry, justice and nobility that influenced his decision. After all, how can we do good, or uphold ideals when we are helpless in our actions? What is more, how could we ever blame someone for doing something wrong if their actions were also predetermined? Moralists and idealists, and philosophers on the whole are all chained to the idea of free will, because otherwise their postulations, lamentations, and declarations are merely inevitable gesticulations in the great spasm of life. I was, by now, fairly sure that the Commandant believed in free will, and I was wondering if I should as well.

Still, there was one last hope for causal determinism, and that would be Quantum Determinism. In actual fact, this is better described as Probabilistic Determinism, instead of Quantum Determinism. This is because a caveat of quantum physics, grotesquely oversimplified, is that anything can happen, and does in some universe. However, some outcomes are more probable than others, and other outcomes are so improbable that it seems like they just don’t happen at all. This is a sneaky way of saying that we still
that events are determined by the effects of macroscopic chain of events, which I’ll call “Natural Cause and Effect.”

Considering these three hypotheses of causality, we can be sure that they all are at least partly true, but should we then be surprised if they all are at least partly wrong as well? While there can be no doubt that each of these plays some role in our world, the important question is: are any or all of these hypotheses true to the extent that they leave nothing to chance, and thereby completely determine the future of the entire world before it even happens? As I’m thinking, and waiting for the blast from the firing squad, that seems more and more like a tall order to fill.

The first of these, and most apparent, is indeed the Natural Cause and Effect. It is only natural that one week ago, as I put one foot in front of the other, the affect was that I became farther and farther away from the Legion outpost. Walking was the cause that created the effect of me no longer being in the Legion, just as ten big guys, eight feet of rope, and a truck were the cause for me returning to the Legion. However, how this amounts to a conviction for desertion seems obscure. Although I can see how it would influence the outcome of my court-martial, I do not see how the outcome was actually predetermined. After all, the Commandant could have just as easily decided the other way, and overlooked my actions, bent the rules, and let me off scot-free.

Perhaps we should consider the difference between two words here: influence and cause. An influence, as I would like to use it, would describe a fact or event that certainly shapes the outcome of subsequent events; it cannot be said to necessitate them. On the other hand, a cause, in my lexicon, would describe the repercussion of some fact or event that necessitates a single, inevitable outcome. Although I must admit my acquittal by the Commandant never seemed like a likely outcome, he couldn’t really say he had no choice.

Or could he? Natural Cause and Effect accounts fairly clearly for the physical relationships of objects in the world, but it struggles to account for the seeming phenomenon of human volition. To this end, we can explore the other two hypotheses of causality. Of these, Psychological Causation is the more intuitive. This is the idea that there are imaginative, emotional, or psychological chains of causation within our minds that picture the physical chains of causation in the

speech theory could accommodate ... they opened up the possibility that music could be thought of as, somehow, an emotive icon, rather than simply an emotive stimulus” (Kivy 1980). The speech theory was limited to music that was combined with speech that could be expressive of emotion. However, these mechanistic models opened up the possibility for there to be a theory that encompassed music without speech. Prior to these mechanistic models, the available theories were limited to those that explained music serving as a “backup” to speech which is then interpreted to be expressive of an emotion. After the introduction of these mechanistic models, the opportunity opened up to form a theory that allowed the explanation that music itself may be expressive of emotion.

Kivy’s primary point is that it is not true that whatever emotion the music is expressive of, is the same as that which the listener would express upon hearing it. This is because “the emotions music is expressive of are usually not the emotions it arouses (or is intended to arouse), any more than the emotions I express are usually the ones I arouse (or intend to arouse). Rather, it is that the aesthetic response to music is a response to, or recognition of what the music is being expressive of (Kivy 1980). This is the solution to the paradox of negative emotion. In other words, it is not the case that a song is expressive of say, anger, by virtue of the listener being angry; rather, it is that the experience of anger is his or her identification of what the song is expressive of. If it were the case that the expressiveness of a song is reflected in one's emotional response, then one would, for example, feel an empathetic murderous rage rather than fear when someone else is expressive of that rage, or that one would feel pain, sorrow or agitation when hearing a newborn baby's cry rather than joy; this is not normally the case.

Even though many other things can be experienced within the realm of music, one of the things that we as humans do experience in music is the possible expression of something that we could interpret as emotion. There is a biological basis to this: it is through evolution and natural selection that we come to assign non-human things qualities that are human. In the case of music, we assign human emotion to it. We must see a particular pattern as a vehicle of expression before we are able to see expressiveness in it, and we see these patterns in music (Kivy 1980). To sum it up, “music is
expressive of the emotions not just because it resembles expressive behavior, or that it, in addition, makes sense to say that something is expressive of emotions, but ... because we, for whatever reason, tend to animate our perceptions, and cannot but see expressiveness in them” (Kivy 1980).

How exactly, do we hear expressiveness in music? Kivy presents two additional theories for musical expressiveness: the contour model, and the convention model. The contour model explains that we are able to hear expressiveness by the “contour” or “feel” of the music. The convention model explains expressiveness as the result of the association of the ideas of certain types of music with certain types of emotions. Kivy argues for a combination of these two. He does so because there are different factors that favor both the contour and convention models. A factor he mentions that favors the contour model is tempo. On the one hand, it is not the case that fast beats are present (or appropriate) in times of sadness (like at funerals), or that slow beats are present in times of happiness and joy (like at parties). On the other hand, it is through convention that we have learned to associate things played in major to be happy, and things played in minor to be sad (Kivy 1980). But the origins of all expressiveness may be described by the contour model.

Kivy also provides a summary of four different “types” of music. There is one type that directly provides contour. Examples of this include rapid, powerful beats of a drum that could be expressive of anger, or the chords on a piano gradually fading to illustrate a sigh. Another type, which includes music that aids in forming contour, can be seen as “backup” sounds played by one hand on the piano while the melody is expressed by the other hand. Yet another type is expressive through culture, much like the aforementioned major and minor pieces played at happy and sad events, respectively. Last, but not least, is the type of music that at one time contributed to the expressiveness of a work by the association of ideas, but has since broken away from that association and instead is expressive by way of custom and culture. An example of this would be the part of Beethoven's Für Elise played in the major, which once was expressive of negative emotion by virtue of association with the beginning notes of Für Elise. Assuming that this piece is widely recognizable, the part played in the major may still bring to mind the

Now, there are varying accounts as to what such “other forces” might be. Some say it is predestination by God. Although I can’t say for sure that they are wrong, it seems to me that this hypothesis is more a matter of faith than philosophy, and reason has little affect either way on whether or not a person chooses to believe it. It is a theory founded on deep, inexplicable intuitions that one either accepts or doesn’t. Philosophy will never disprove God to the believers, nor will it prove God to the disbelievers, and trying to do so will divert the entire debate to a different issue. Instead, I will respectfully agree to disagree with those who believe in divine predestination, and, for the rest, I will continue my line of reasoning.

As I said before, I am a man who firmly believes in logic and causality, but this is not because I know them to be true or real in a metaphysical sense. Honestly, it seems to me that metaphysical judgments, in general, are speculations affirmed by faith, and are nothing more than reasoning in a vacuum. Instead, I believe in logic and causality because I know no other way to live my life. I presume that putting ink in a dry pen will make it write again--cause and effect. What is more, as I live my life based on these principles, I haven’t yet encountered a crisis that would cause me to question them. That is to say, I live my day-to-day life presuming that the world is logical and causal, and, thus far, I have never encountered a situation that acted against my presumptions by behaving illogically or non-causally. Until that day, I will continue to safely presume that the world is a logical and causal place.

However, questions remain. How far does causality reach into our world? How much of our lives are determined by cause and effect? And what is more, what kind of causes are we dealing with? In an exploration of the extent of causality in our lives, we should consider that there are different kinds of causes. On the most radical end of the spectrum, some would argue that all events, even the experience of the illusion of volition, are caused and therefore determined by microscopic phenomena in our brain and elsewhere—I’ll call this “Quantum Determinism.” In a more practical sense, some might argue instead that our actions are caused by the effects that our experiences and social conditioning have had on our judgment—I’ll call this “Psychological Determinism.” Finally, there is the possibility
that just because I wasn’t aware of something didn’t mean it wasn’t very painfully real.

After all, this whole adventure began with me insisting, as many drunken people do, that I wasn’t drunk at all. In hindsight, my friends were probably right at the time, and perhaps my judgment was a little clouded, when I signed up for the Foreign Legion, since I threw away a promising career in academia for a life of adventure in the deserts of North Africa. But not being able to see the big picture beyond one’s narrow personal experience is not a problem unique to myself. After all, how many centuries did man go on presuming that the earth was flat because its curvature was too subtle to be easily observed? How arrogant would it be to presume that in all of reality, I was the supreme perceiver? Was it safe to assume that if I could not sense something, then it must not exist? No, that would be absurd. All told, just because I wasn’t aware of it was no reason to presume that there was no force shaping my actions.

At this point, though, I was fairly certain that I didn’t have free will, since I stood tied to a stake while my fellow Legionnaires loaded their rifles. At least, I didn’t possess free will in an absolute sense of the word. If I were really capable of imposing my will on the world around me, then I would be sitting on a beach in the Caribbean sipping a fresh Mojito, but as they say, you can’t always get what you want. Still, isn’t that an abrogation of free will? If my will really does determine my actions, then why can’t I fly? Why can’t I will myself away from this desert outpost? Or will the bullets turn to flowers? Even if I only control my own body, why must I allow it to become riddled with unsightly bullet holes? Why can’t I will my heart to keep beating or my brain to keep thinking? Most reasonable proponents of free will will concede at least these limitations. In this way, no one actually advocates that we have complete free will. Of course! They say, you can’t defy the laws of nature! But if you can’t defy the laws of nature, then where do we draw the line that divides the things we can control and the things we are helpless against? How do we know that the laws of nature are not so tightly knit that they dominate every detail of our lives? Or what is more, if “The Laws of Nature” can limit our will, or occlude it entirely, how are we to say that there are not other forces, as of yet unknown, that can limit and control us as well?

Overall emotion that is obtained when listening to the whole piece (Kivy 1980).

Kivy conducts a thought experiment in order to test out the notion of whether or not expressiveness is biologically (contour) or sociologically (convention) based. If expressiveness were based solely on human nature, then different cultures could listen to the same piece and experience the same emotions brought on by expressiveness. If expressiveness were based solely on convention, then upon listening to some foreign music, no expressiveness will be perceived. Both of these hypotheses, on an independent basis, can be disproved.

For example, when I, a frequent listener of electronica, listen to trance (a subgenre of electronica), I feel uplifted. On the one hand, playing this same piece to someone unaccustomed to listening to this type of music would more than likely result in his or her feeling anything but uplifted. On the other hand, there are instances in which one could listen to something that is completely alien to one’s ears, but still be able to perceive the same category of emotion that this new music is expressive of. I am convinced that someone never exposed to electronica would have the same general idea of trance and drum’n’bass, although it may not be as refined as one who has had more exposure to electronica. Trance, with its steady beat, uplifting synths that blend together into a crescendo, is significantly different from the hard bass lines of a typical drum’n'bass track, that are so low that one feels it more than hears it. It is like comparing a soft, surreal dream state to the nitty-gritty life of living in an urban jungle where the canopy is made of smog and skyscrapers.

Although there may be variation in one’s ability to perceive the type of expressiveness, the general differences are clear enough to the inexperienced electronica listener to be able to tell that the expressiveness of trance music is different from the expressiveness of drum’n’bass. An experienced listener can listen to trance and identify positive feelings such as hope, unity and joy; she can also listen to drum’n’bass and identify negative feelings such as chaos and frustration. Although an inexperienced listener may not hear all those things, it is still possible to hear the climax of a trance song, and feel the unrelenting bass. The climax is still translated into something positive, and the bass into something negative.
Since contour seeks only to describe emotion and does not itself cause emotion, and since all types of music either conform to the actual contour model itself, or began that way before evolving into something else, music does not cause emotion in and of itself. Furthermore, it has been shown that since it is not the case that the music actually possesses an emotion to express, the most it could ever do is display qualities that are then perceived by the listeners. It is actually that to identify what a piece is expressive of, one must interpret the perception of these qualities. In other words, it is through interpretation of a perception that one is able to identify the type of expressiveness. This is distinctly different from the notion that music directly causes emotions. Because music is not the direct cause of emotion, the paradox cannot exist.

Listening to different types of music does not necessitate a specific response. Rather, it is through culture that we have learned to associate a particular emotion to specific types of music. The way we identify these emotions is by feeling it, and applying these emotions that we feel to the emotive description of music. There is no “emotional response” because it is not the music that is causing us to feel these emotions—it is ourselves that is the cause, the contour we perceive and the cultural conditioning that we receive. Thus, there is no paradox.

References


Fate and Free Will
A Memoir of my Adventure in the Foreign Legion

Austin M. Kramer

Loosely based on true events, this story chronicles this UW undergraduate’s thoughts on fate and free will after his narrow escape from a strange and unfortunate incident in Algeria.

Years later, as I faced the firing squad, I could not help but think there was no way any of this could have been avoided. By then, I was about to be shot for espionage, desertion, and fraternizing with the enemy by a squad of Legionnaires in a lonely outpost on the Algerian frontier, and, for the life of me, I could not think of a single thing I could have done differently. After all, as a firm believer in logic and causality (which I may explain later, if the Commandant will give me the time) it only made sense that the ultimate end to my life was causally determined long ago. Or was it? Actually, the more I thought about it the less sure I was, and when the Foreign Legion plans to shoot you at dawn, you realize an amazing capacity to do a whole lot of thinking in a short amount of time.

On its most fundamental level, it was an easy question, but very often it is the easy questions that require the most thought. Do I control the course of my life, or are the events around me—and even my own actions—controlled by a force beyond my influence? Traditionally put, do we have fate or free will? Intuitively, if we ask ourselves, the immediate response is that we are in control of our actions. After all, I had just been offered a blindfold and a cigarette. I took the cigarette and declined the blindfold. But I didn’t feel there was anything preventing me from taking the blindfold and declining the cigarette, or any other possible combination of the two the imagination allows. If there was something affecting my decisions, I certainly wasn’t aware of it. On the other hand, I had learned by now
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References


Salvaging the Hempel Theorem

Ryan Dreveskracht

In this paper I argue that Carl Hempel’s theory of historical explanation ultimately fails in his goal of explaining History II. However, with a slight modification to Hempel’s Statistical-Inductive model—an adaptation, if you will—I maintain that we may infer a History I explanation of events that, although it is not always as foolproof as History II, offers an explanation containing enough accuracy to satisfy most, if not all, historical inquiries.

Current philosophers of history generally concur that in order to discuss history at all we must first reach a consensus as to what “history” actually is. Although theorizing about history has been presented in somewhat general and ambiguous terms throughout the past, a present day definition of comprehensive history consists of two subsets of particular definitions.\(^1\) The first of these, speculative history, is used to refer to history as a meaningful story, often times consisting of a narrative or an agenda. This definition is focused upon history as an event which allows us to acquire a pattern that may be either deterministic and teleological, or simply a dialectical synthesis, potentially allowing us to understand an event. Well-known proponents of this type of history are philosophers like Hegel, Marx, and Toynbee. Critical history, on the other hand, is used to refer to history as a mere chronicle of events. This definition is analytical in that it must be devoid of everything but empirical facts and verifiable explanations, and must lead to genuine knowledge (a justified true belief) about an event. Throughout the rest of this paper I will adopt Michael Stanford’s model in referring to these two definitions as History I and History II respectively.\(^2\)

History II is what concerns most historians today. Likewise, because History I is potentially subjective and dependent upon the historian’s interpretation and motives, much of philosophy of history has dealt with the metaphysical and epistemological worries of History II; one of the most notable being Carl G. Hempel. Hempel sights two central human concerns which provide our motivation for all scientific research: (1) prediction and control of the future whenever possible, and (2) an intellectual curiosity to know, explain, and understand a “flow of phenomena” as it is presented to him. Hempel then goes on to state, “[i]n times past questions ... were often answered by myths ... But gradually, the myths are displaced by concepts, hypothesis, and theories developed in the various branches of empirical science”. In other words, Hempel believes that all pervasive human concerns can be satisfied by “concepts, hypothesis, and theories” of the “natural sciences.” Furthermore, Hempel believes that models of explanation which are derivative of the “natural sciences” may be applied to History II, and in doing so one may overcome all logical worries which philosophers of history predominately concern themselves with. In this paper I will argue that Hempel’s theorem of historical explanation ultimately fails to model History II beyond a mere description of scientific events. However, with a slight modification to Hempel’s Statistical-Inductive model, I maintain that we will be able to deduce a History I explanation which, although is not as foolproof as History II in all cases, does predict a historical explanation containing enough accuracy to sufficiently model most historical phenomena.

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4Ibid., 95.
5Ibid., 123.
6Ibid., 123.
7By using the term modification I am referring, specifically, to the adaptation of Hempel’s Statistical-Inductive model to the more immanent context of History I.
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up is cooled, and that what has been cooled and become water comes down. (Irwin 114)

A key premise in Meyer’s argument is that coincidence is the focus in this example and in examples like it. However, that conclusion should not be taken as obvious. Aristotle describes people as referring things to necessity and saying that things develop out of a background of necessity. From this it seems more reasonable to conclude that Aristotle is not in fact concerned with coincidental results, as much as he is concerned with phenomena resulting from the necessity of material elements. Hankinson further supports this conclusion in his description of Aristotle’s types of necessity.

Hankinson’s interpretation of Aristotle’s inclusion of types of necessity into the explanation of the rival thesis goes beyond showing that hypothetical necessity is compatible with teleology. For Hankinson, Aristotle’s distinction is meant to show that his opponents believe in the necessity of enforced motion. Hankinson shows this with his explanation of Democritean atomism as was described above. Although Aristotle does not reference Democritean atomism himself in the relevant chapter, upon examining the text surrounding Aristotle’s explanation of hypothetical necessity, it can reasonably be concluded that Hankinson is correct in his interpretation; Aristotle’s opponents are, in fact, advocates of the thesis of necessity. Aristotle states: “the sort of necessity that is ascribed nowadays to things that come to be is the sort there would be if someone supposed that a wall came into being by necessity. On this view, heavy things naturally move downward, and light things upward” (Irwin 118). Aristotle is pointing out that his opponents believe the necessity of material-efficient causes is enough to construct things with form. This passage sufficiently supports the rival thesis as being material necessity.

As was stated in each case, Aristotle’s text fully supports each author’s conclusion. This is not as problematic as it seems, however, because I think that Aristotle would have agreed that his opponents are advocates of both of these interpretations of the rival thesis. Its not that his opponents were inconsistent, but, to Aristotle, these authors may be explaining essentially the same rival thesis. Hankinson has proved that Aristotle is addressing a reductive rival thesis which states that material elements cause outcomes. Meyer has proved an

Hempel believes that all historical explanations will fit into either one or the other of his scientific models. The first of these is his Deductive-Nomological explanation (DN). This model of explanation is in essence a deductive proof consisting of nomological laws (which are uniformities that can be expressed by general laws) and a set of antecedent conditions (that is, particular facts about a given event), as illustrated in figure 1. Furthermore, this explanation will also consist of a descriptive statement which is itself the conclusion of the proof. This descriptive statement will also be the particular fact that we are trying to explain. Hempel refers to the premises (nomological laws and antecedent conditions) as the *explanans*, and the conclusion (the descriptive statement) as the *explanandum*.8

According to Hempel, the majority of scientific explanation is explained using this model. For example, this model can be used in the simple scientific explanation of a rainbow where; light (C1) + water (C2) + the laws of refraction (G1) + the laws of reflection (G2) = a rainbow (D).9 As noted, Hempel believes that this model can also be used to derive historical explanations. However, in applying this model to historical inquiry, Hempel makes distinctions between its proper use in both fields, resolving that deriving a historical explanation using this model requires four additional criteria. First, whereas the general laws of science, which are derived from a like model, do not necessarily contain antecedent facts, a historical

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8Ibid., 96-97.
9By (C1, C2, C3, etc.) I am referring to conditions/facts. By (G1, G2, G3, etc.) I am referring to general laws. By (D) I am referring to the descriptive statement as deduced from (C)x + (G)x.
For example, scientific laws such as Galileo’s are not causal in the sense that a conclusion can be reached without appealing to antecedent facts; it can be derived merely from appealing to the laws of mathematics (G) and physics (G). However, when concerning history, these explanations must be causal. For example, stating the law of gravity (G1) together with the theory of relativity (G2) by no means explains John’s suicide. However, if we add in the antecedent fact that John voluntarily jumped off of an extremely tall building (C1) together with (G1) and (G2) we can accurately explain John’s suicide (D). Secondly, in explaining history the explanans “must precede the explanandum”. In other words, the facts presented must be antecedent to the descriptive statement of inquiry. For example, it would make no sense to use the fact that John made the sidewalk bloody as a premise for explaining John’s suicide. To do so is to simply confuse the explanans with the explanandum. John’s blood is an effect of the event, not the cause of it. Third, the general laws must be universal; that is, they must be applicable and true regardless of time, circumstance, or situation. Finally, and most importantly, a Deductive-Nomological explanation must be an unquestionable “universal deductive” argument; the conclusion (explanandum) must be a necessary truth which is logically implied.

Thus, there must be no possible way that, given the premises (explanans) of the explanation, the conclusion be anything other than what is proposed.

Although there have been many epistemic as well as metaphysical critiques of Hempel’s DN model, at this point I will primarily be focusing upon the one that I deem the most detrimental, and one that Hempel in fact addresses himself. Unarguably, not all fancy-cook is healthy is a coincidence without an explanation. Material, formal, and final causes cannot explain the food’s being healthy, and neither can the efficient cause because the cook did not make the food qua doctor, he made it qua fancy-cook. Meyer is correct to point out that according to Aristotle, occurrences with accidental causes are occurrences with no explanation (821).

Aristotle proves his theory of natural teleology by arguing: (a) there is a disjunction, where either natural things develop out of coincidence, or there is teleology in nature, (b) natural things cannot develop out of coincidence because there is regularity in nature, and therefore (c) teleology exists in nature. After explaining that there is regularity in nature, because parts of animals develop either always or usually, Aristotle states: “[i]f, then, these seem either to be coincidental results or to be for something, and they cannot be coincidental or chance results, they are for something” (Irwin 115). Aristotle’s rejecting accidental causes, that is, coincidental explanations, in nature can be understood to mean that Aristotle is rejecting the negative claim that there are no explanations in nature. Thus, since Aristotle rejects the rival thesis to prove teleology, the rival thesis must be the negative claim that there are no explanations in nature. Meyer is correct to argue that the opponents are, therefore, eliminativists. On this point, it seems that Hankinson is wrong in explaining Aristotle’s theory as anti-reductionist because Aristotle is in fact rejecting the thesis that there are no explanations, and not a thesis of reduced explanations.

Meyer is certain that the examples Aristotle gives focus on coincidence. The fact that Hankinson seems equally certain that necessity is what is at issue provides good reason to return to the text and see what Aristotle actually says with the surrounding text. Again, here is the example of why the rain falls:

For everyone refers things to necessity, saying that since the hot, the cold, and each element have a certain nature, certain other things are and come to be of necessity … A puzzle now arises: why not suppose that nature acts not for something or because it is better, but of necessity? Zeus’s rain does not fall in order to make the grain grow, but of necessity. For it is necessary that what has been drawn
background is one lacking an explanation, which is very different than material determinacy.

Meyer and Hankinson have two different ideas of what Aristotle’s rival thesis actually is. To Meyer, Aristotle’s opponents present a theory of accident, and what is important in the interpretation is what “simply results” from circumstances. In this interpretation, Aristotle’s distinction between intrinsic causes and accidental causes is paramount, because it is the denial of instability that Aristotle uses to prove the existence of teleology in nature. To Hankinson, Aristotle’s opponents present a theory of necessity, where what is important is the reduction of final causes to material-efficient causes. In this case, the rival thesis is material sufficiency, and the important distinction is types of necessity. In the remainder of this paper, I will evaluate the best evidence in each argument, and I will conclude that Meyer and Hankinson are actually arguing for a similar rival thesis.

Reduction is a common theme in Hankinson’s section because Aristotle’s opponents are interpreted as providing a new explanation for the development of natural organisms. Instead of material-efficient and final causes doing the work, the final cause part of the explanation is reduced to a supposedly further understanding of material-efficient causes. But Meyer’s account makes no use of reduction. She nowhere states that Aristotle’s opponents wish to reduce final causes to accidental causes, or that accidental causes can actually provide an adequate account of the regularity of complexity in animals. In fact, Meyer gives a strong argument that the rival thesis is not a reductionist thesis at all.

Meyer argues against a reductionist rival thesis by stating: “[e]ven though Aristotle’s defense of natural teleology commits him to the rejection of the reductionist thesis generally attributed to his opponents, it does not follow from this that he attributes the reductionist thesis to his opponents” (Meyer 821). As a consequence of denying his opponent’s actual position, Aristotle denies reductionism as well. What I believe Meyer correctly argues is that the opponents must be eliminativists. For Aristotle, to say that something lacks an intrinsic efficient cause is to say that it lacks an explanation (821). The fact that the food created by the fancy-cook is good tasting has an explanation. The fact that the food created by the

general laws are universal, and therefore not all laws fit into the DN model. In fact, only a very select few, namely those derived from “physical science and physics” (although this is even very debatable), conform to the DN criterion. We are then faced with the question; what does fit this DN criterion? Is it universally true that, even given the laws of gravity and relativity, that John died from his plunge? What about the many people who have survived from much higher free-falls with no injury? As Hempel himself admits, “[m]any an explanation offered in history seems to admit an analysis of this kind: ... it would state certain initial conditions, and certain probability hypotheses, such that occurrence of the event to be explained is made highly probable by the initial conditions”. Thus, given that all we can possibly do with the DN model is to describe strictly scientific events, Hempel seems to satisfy our standards for History II, but only in the most elemental of (scientific) inquires.

However, as W.H. Dray states, “[i]n history ... limited-law and individual character explanations are often the goal of inquiry”. In other words, much of the goal of history is not the description of scientific events, but the explanation of social and psychological affairs. Furthermore, as noted by Michael Stanford, “[laws of nature] are, for the historian, almost beyond question. Although they can be tacitly assumed, they rarely function in historical explanation”. For example, if John’s wife asked for an explanation of John’s suicide, a physical description of the act would by no means give an acceptable explanation of the event. This is plainly because she is not asking for an explanation of the act itself, but an explanation of John’s motives. These cannot be deduced within the DN model because they are dependent upon a different type of science (namely psychology and sociology), and the laws of these sciences are not universal but statistical. This is where Hempel’s DN fails in explaining history;
are not enough in themselves to account for the emergence of form: matter on its own, then, is insufficient to explain the regularity and repeatability of large-scale formal complexities such as animals” (134). The rival thesis, thus, would be that elemental properties are enough to account for the regularity and repeatability of the complexity in animals. Again, the evidence provided by Hankinson shows that the rival thesis to Aristotle’s teleology would be the thesis of material sufficiency.

The most important evidence of what the rival thesis is in Hankinson’s chapter can be found in his comments on Aristotle’s distinction between types of necessity. The three types of necessity are: absolute and natural necessity, necessity of enforced motion, and hypothetical necessity (134). Aristotle explains that hypothetical necessity is compatible with natural teleology, so that the rival thesis cannot be hypothetical necessity. However, Hankinson claims that “Democritean atomism errs in thinking that structurally complex, regular outcomes can be accounted for solely on the basis of the second type of material necessities” (135). From this, and assuming that Hankinson did not randomly bring up Democritean atomism, we can conclude that Hankinson thinks the opposition is Democritean atomism, and that the rival thesis is that regularity can be explained by material causes.

The curious part of “Teleology and Necessity” is Hankinson’s conclusion, because it is seemingly similar to Meyer’s conclusion. Hankinson states:

Herein lies Aristotle’s reason for rejecting a picture of the universe as the macroscopic outcome of fundamentally random (although causally determinate) microscopic processes, and consequently for rejecting full-scale reductionism … : no satisfying account can in principle be given, he thinks, for the pure emergence of form from a random background. (135)

For the conclusion to remain consistent with, and follow from, the rest of this section, what Hankinson must mean by a “random background” is material determinacy, and not Meyer’s notion of instability. It is necessary to make this distinction because in this paper I will argue a point Meyer introduces that a truly random

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18Ibid., 100.
“deers’ antlers fall off because of their weight, but the shedding is also to their advantage,” and “humans have hair on their heads of necessity (because the moisture of their brains naturally produces residues that form hair), but also for the sake of protection” (129). In response to these examples, Hankinson claims: “[i]f antecedent material factors necessitate (that is, are sufficient for) a particular result, how can a final cause also play a role in the outcome?” (130). Although it appears as though this is Hankinson’s own criticism of Aristotle’s examples, it is safe to conclude that Hankinson believes the rival thesis is that material factors necessitate results, because the criticism perfectly matches the opponents’ position as was found in the last paragraph.

If Hankinson is correct that final causes would be explanations in addition to the opponents’ explanations, then we can conclude that Aristotle’s opponents would claim whatever is left over if we subtracted the teleological element in each of the examples. What is left over in the first example is that antlers fall off because of their weight. What is left over in the second example is that humans have hair of necessity. Again, if Hankinson is correct, then we can conclude that Aristotle’s opponents were reductionists because in each of these cases, without Aristotle’s teleological addition, the explanations of the occurrences are reduced to their material-efficient causes.

Another way Hankinson displays what Aristotle believed the rival thesis of natural teleology to be is through the explanations of Aristotle’s natural teleology. Since final causes are explanations in addition to material-efficient causes, Hankinson explores what cannot be reduced to the material-efficient causes. He states: “final causes are ‘irreducible potentialities for form’, irreducible just in that they cannot be attributed to the matter of which things are made up” (132). All that needs to be noted of this quote is that Aristotle’s opponents would, therefore, claim the antithesis: that final causes are reducible to the matter of which things are made up.

Hankinson also explains Aristotle’s belief in natural teleology through the direct denial of Aristotle’s opponent’s claim. Thus, again, we can gather what the rival thesis is by figuring out what the antithesis is of Hankinson’s interpretation of Aristotle’s claim. Hankinson states: “crucially for Aristotle, those elemental properties proposed by Alan Donagan.19 In vindication of this IS model Hempel states, “probabilistic explanation is eloquently attested to by the ... highly successful explanatory use that has been made of fundamental laws of statistical form in genetics, statistical genetics, and quantum theory”.20 Although this may be true, Donagan points out a relatively undisputable flaw; “[i]t is harmful to ... mutilate research into human affairs by remodeling the social sciences into deformed likenesses of physics”.21

This criticism seems to point out two major errors in Hempel’s IS reasoning. First, history does not look at what is statistically likely (and in fact is most interested in the opposite). Because an inductive proof requires a majority statistic, most IS explanations are of no use to historical inquiry. In other words, to employ our felo de se example again, historians would not typically be inquiring about an explanation of John’s suicide had he been successful in the act. However, if he had jumped off of an extremely tall building, with a statistical probability of 99% that he would die, and lived, this event would be much more likely to evoke a historical inquiry. Thus, in utilizing the IS model we would have a proof which would be 1% accurate; this is not an inductive explanation at all. Moreover, in utilizing laws of the social sciences, given that they rest upon statistical assumptions which are not as precise as those of the natural sciences, this explanation becomes even more subject to misplay. Secondly, because an IS explanation must employ statistical laws, which are necessarily universal, this model does not in fact explain “particular moments” in history.22 Here, Donagan maintains that, not being able to read his mind, we cannot ever know what made John

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19Although there may be better critiques of Hempel’s epistemic concerns, these do not play a part in my main argument. At this point I will be focusing upon these two objections because they are the strongest logical arguments against Hempel’s IS model. Likewise, because Hempel’s model rests upon much of the same epistemic and metaphysical claims as science, I will leave these concerns up to the philosophy of science. Here I am focusing upon the logical arguments which the philosophy of history most commonly concerns itself with.

20Ibid., 103.

21Ibid., 157.

22Ibid., 147.
commit suicide.

At this point I would like to offer a defense of Hempel’s explanatory models by offering a slight modification to Hempel’s Statistical-Inductive model which defeats the objections made above by Donagan, as well another made by Nagel, when adapted to fit into another, more subjective context. 23

First, although Donagan may be right that most historical inquiries do involve statistical abnormalities to some extent, it is important to keep in mind that these events are still not beyond scientific explanation. The conflict is essentially epistemic. For example, what if John had only jumped off of a three story building (C), and, based upon statistical laws, only 10% of people who jump off of three story buildings die (S). 24 John’s suicide (D) would then qualify for historical inquiry, but not an inductive explanation. However, what if we found out, through historical inquiry, that John was 80 years old and weighed 800 lbs? What if we knew also that, statistically, 90% of people who are 80 and over die when they fall off of three story buildings (S2), and likewise applying to people 800 lbs and over (S3)? John would then be 90% likely to die, a number that any historian would be happy with. But what about the 80-year-old, 800 lb man that jumped off of a three-story building and lived? According to our statistical analysis this would still be possible, but nonetheless very highly improbable. Thus, given that the IS model possesses enough particular facts which correspond to statistical laws, through a series of statistical proofs we can deduce a large (or small) enough percent about a given event to produce an adequate (or inadequate) explanation. 25 It is the primary job of historians to produce the particular facts and the job of the comprehensive sciences

23 Basically, what this will accomplish is to take Hempel’s IS model out of its History II theoretical context, and adapt it as to fit within a History I framework.

24 By (S) I am referring to statistical laws.

25 If, by employing this proof, we discover that the allowed premises do not equate a large enough percentage to result in an explanation which we may deem adequate (such as 80-100%), we must conclude that this proof does not merit enough statistical evidence as to hold an explanation fair to middling.

emphasis in the examples Aristotle gives is on the “coincidence,” what “just happens,” or what “simply results” (795-796). Next, she introduces Aristotle’s concepts of intrinsic and accidental causes, and she claims that the rival thesis must be one of accidental causes. Finally, she supports this claim by showing that Aristotle’s argument (that is, there are final causes in nature because there is regularity in nature) proves that the rival thesis must be one of irregularity, instability, and, therefore, must support accidental causes.

The other work that I will be using in this paper is a section of a chapter titled “Teleology and Necessity” by R. J. Hankinson. The argument presented by Hankinson is that Aristotle thought material causes are insufficient to explain regularity in nature. For the purpose of this paper, I will not present the argument given, but, instead, I will extract from the article what Hankinson believes the rival thesis to be. What is shown in this article is how the rival thesis states that material causes are sufficient to explain regularity in nature. In other words, the rival thesis is that teleology can be reduced to material causes.

Hankinson first shows Aristotle’s opponents to be reductionists by stating that in attempting to prove the existence of final causes in nature, the goal is to show what further explanatory work is done by final causes in nature (Hankinson 130). He states:

Only if we can make sense of the notion that, had the final cause not been the way it is, then precisely these material-efficient conditions would have failed to bring about the result, does it seem as though the final cause genuinely has a role to play. Yet that is precisely what the thesis of material sufficiency denies. (132)

If there were final causes in nature, then the same material conditions would be able to yield different results. Aristotle’s opponents could then be understood to believe that the same material conditions would always yield the same results. Due to the fact that this belief is material determinacy, Hankinson is right to claim that the rival thesis would be the “thesis of material sufficiency.” Therefore, Aristotle’s opponents would believe that final causes are reducible to material causes.

Further evidence that Aristotle’s opponents are reductionists can be found in Aristotle’s examples that Hankinson uses. Aristotle states:
animals and plants would come together in an unstable way. If one condition had been different, then the animal, plant, or part would not have occurred (803).

The last point in Meyer’s article that will be discussed here is the evidence that the rival thesis is one of accidental causes, based on the disjunction argument given for the truth of teleology. Meyer states:

Aristotle attributes to the opponents of natural teleology the denial of a slogan that is ubiquitous in his discussion of teleology: “man generates man, and because the parent is so, so is the child” (PA 640a25-27; cf. 640b1-4, Ph. 193b8, 194b13). We therefore have good reason to believe that Aristotle thinks the truth of this slogan (or at any rate its generalization to cover all animals and plants) is sufficient for the truth of his thesis of natural teleology. (811)

The disjunction argument is fairly simple: either there are intrinsic causes in nature (and, thus, natural things are overdetermined), or there are accidental causes. Aristotle argues the denial of the latter by showing that efficient causes overdetermine the development of offspring. Man generating man always, or for the most part, is enough to prove that there is regularity in nature. And, since the efficient causes of natural things cause offspring of their kind regularly, it follows that there are intrinsic efficient causes in nature (811). Aristotle proves that there is teleology in nature because he has proved that natural organisms are overdetermined, which is all that his theory of teleology claims.

Meyer explains Aristotle’s proof of teleology to point out that the rival thesis is one of accidental causes, because the denial of any other thesis, such as the theory of necessity, would not yield the conclusion that there is teleology in nature. The denial of accidental causes in nature necessitates intrinsic causes in nature. The denial of solely material causes in nature would seem to allow Aristotle to conclude only that. Since Aristotle does prove his theory of natural teleology based on the denial of the rival thesis, it follows that the rival thesis is necessarily one of accidental causes.

Meyer’s overall claim in “Aristotle, Teleology, and Reduction” is that Aristotle’s rival thesis must be that there are only accidental causes in nature. She argues this claim by first showing that the

to produce the statistical laws.26

Secondly, although we can never really know for sure what made John want to jump off of a building, we do know that there is an S% chance that he will. Likewise, although we can never know for sure what was going through John’s head at the time, (for example, whether or not it was his overly inquisitive wife, his obesity, or inability to deal with old age which finally pushed him to commit the particular act), we can say that people with John’s problems (C1+C2+C3) are 95% more prone to develop severe cases of a particular type of depression (S1) which, 90% of the time (S2), results in suicide (D). Then, although we are not as sure exactly why John committed suicide, the odds are pretty good that we will guess correctly that it was the depression. Here, it is the job of the historian to find out more particular facts about John and to apply their corresponding statistical laws, which may (or may not) move the degree of assurance towards an acceptable end of the statistical spectrum. Although this will not give us an explanation as sure as a History I explanation, it does give us an explanation which will satisfy most historical inquires, given that there are enough particular facts about the event available.

Finally, according to Nagel the value scheme of the historian is “logically involved in ... his standards of validity”.27 Thus, as noted above, since History I contains so much potentially subjective material, the idea of objectivity and whether or not it can be derived from the IS model needs to be addressed. According to Nagel it cannot. Although I will admit some validity to Nagel’s having this claim, I believe that it can be refuted. It can be noted, however, that by using the IS model one may begin a historical inquiry with a

26When I refer to the comprehensive sciences I am also including social sciences such as psychology and sociology. There is no reason why, given that their studies are statistically accurate, their statistics would not produce the same results. If 60% of convicted murderers eat cereal on Saturdays, and if you are a convicted murderer, then there is a 60% chance that you are the type that eats cereal on Saturday. However, getting the statistics right (maybe by conducting more in-depth studies over longer periods of time) is the job of other social sciences, not history.

27Dray, 1966, 36.
particular goal in mind, and by doing so deduce a claim which is 99% accurate, but not true. For instance, if John had jumped off of an extremely tall building (C) with a 99% likelihood that he would plunge to his death (S), an explanation confirming his suicide (D) would most plausibly be satisfactory. However, what if John had a parachute on? Once we add this factor in the chances of John’s death dramatically disappear. Thus, our 99% certain proof has proven fallacious. How do we get around this? I believe that we can get to an objective description using this model if we simply stick to a scientific method. Just like any scientific inquiry, the initial explanation (hypothesis) was a good place to start. Furthermore, it may even be a good idea to search for more particular conditions which support this hypothesis. However, at some point we will also have to search for counterfactuals, or conditions which are potentially injurious to the explanandum. If we cannot find any then this even further justifies our explanation. If we can our explanation needs altering.

Although History II may be what most historians are searching for, it is undisputedly hard to come across. However, I believe that this is derivative of History II having such a strict definition, which is focused upon scientific rather than historical explanation, that leads to this problem, not the act of historical explanation itself. Of course, history is somewhat unsure; it doesn’t exist empirically and therefore we have nothing to verify it against, even if we were 100% right all of the time. In light of these worries, I am satisfied with the simple high likelihood of an historical explanation—we can come to odds that, if applied to a History II framework, I would bet on any day.

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28By this I mean a scientific method of advancing an explanation, not a strictly scientific explanations for an historical event, as Hempel’s DN model does. Such a method would resemble the following: (1) Discover some aspect of the universe. (2) Invent a tentative description, called a hypothesis, that is consistent with what has been observed. (3) Use the hypothesis to make predictions. (4) Test those predictions by experiments or further observations (historical facts) and modify the hypothesis in the light of the results. (5) Repeat steps (3) and (4) until there are no (or not too many) discrepancies between the theory and experiment and/or the observation.
The Opposition to Natural Teleology

Shane Eubank

Despite Aristotle’s critique of the “opponents” to his natural teleology, the actual claim that he thinks they are making is somewhat nebulous. Do natural things occur by accident or of necessity? Here, two opposing accounts are reviewed, interpolated, and finally shown to be compatible.

It is currently disputed among scholars what exactly Aristotle’s opponents of natural teleology claim in Book II, Chapters 8 and 9 of Physics. In this paper I will first provide the necessary background information for the debate, which will consist of a brief explanation of the four causes and what it means to have teleology in nature. Next, I will provide one side of the dispute by explaining an article by Susan Sauve Meyer titled “Aristotle, Teleology, and Reduction.” According to Meyer, Aristotle’s opponents believe “accidental causation” is responsible for the development of natural things. I will use the section titled “Teleology and Necessity” of the essay “Philosophy of Science” by R. J. Hankinson to show the other side of the dispute, which is that Aristotle’s opponents are advocates of the thesis of necessity.

Following these explanations, I will take the best evidence provided by each author for his or her interpretation of the opponents, and evaluate it based on what Aristotle actually wrote in the relevant section of Physics. In both cases I have found the authors’ positions to be well supported. In conclusion, I will argue that the well supported premises in Meyer’s article do not contradict the well supported premises in Hankinson’s article, and that it is these parts that correctly represent Aristotle’s opponents.

Aristotle’s four causes can be understood as four types of explanations that can be given for something. The first has to do with what something is composed of, and has consequently been named the ‘material cause’. Aristotle states: “[t]hat from which, as a <constituent> present in it, a thing comes to be is said to be that
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things cause—for instance, the bronze and silver” (Irwin 102). So, an explanation of a table could be that it came to be out of wood. The second type of explanation has been named the ‘formal cause’. The formal cause is the explanation of the essence of something. The formal cause of a table would be that it has a flat top and four legs, because that is what it is to be a table (Cohen 1-2).

The third cause is explained by Aristotle as being “the source of the primary principle of change or stability…and in general the producer is a cause of the product, and the initiator of the change is the cause of what is changed” (Irwin 102-103). This explanation of something is whatever produced it or caused it to change, and it has been named the ‘efficient cause’. In the case of a table, the efficient cause would be a carpenter. The last explanation has been named the ‘final cause’. Aristotle describes this cause as “something’s end–i.e., what it is for” (103). In the case of the production of artifacts, such as a table, the ‘what it is for’ is whatever the producer’s intentions were in creating the object (Cohen 1-2).

Notice that with artifacts the ‘what it is for’ comes from outside the object itself. This is known as ‘directed teleology’ (Hankinson 127). For the purposes of this paper, it is sufficient to say that Aristotle did believe there were final causes in nature, but he rejected that they were the type that are directed and come from a source external to the natural object (127). In his proof of the existence of teleology in nature, Aristotle repeatedly gives a counterargument to natural teleology that he claims is held by other people (Irwin 114-118). It is the goal of this paper to find out exactly what these people believed. I will be referring to the people in opposition to Aristotle’s natural teleology as the “opponents,” and their thesis as the “rival thesis.”

In her article, titled “Aristotle, Teleology, and Reduction,” Susan Sauve Meyer argues that the rival thesis on which Aristotle bases the truth of natural teleology is actually a thesis of accident and not of necessity. First, Meyer shows the possibility of her claim by giving examples that could be interpreted as Aristotle opposing a theory of accident. Next, she introduces the idea of ‘intrinsic causes’, and explains that a theory of accident would be one which claims nature lacks intrinsic causes. Finally, Meyer argues that Aristotle’s opponents must hold a theory of accident, because the denial of the lack of intrinsic causes in nature would prove natural teleology.

The first example of Aristotle’s that Meyer uses is about the rain falling. In trying to explain the position of his opponents, Aristotle states: “Zeus’s rain does not fall in order to make the grain grow, but of necessity. For it is necessary that what has been drawn up is cooled, and that what has been cooled and become water comes down, and it is coincidental that this makes the grain grow” (Irwin 114). Meyer explains that in this passage it is easy to misunderstand Aristotle’s objector to be a proponent of the thesis of necessity. After all, the passage states that the rain falls of necessity, because it is necessary that it do so (Meyer 796). However, Meyer claims that the focus of this example is not supposed to be on the rain, but, instead, on why the grain grows. Aristotle’s point with the example is to show that his opponents would believe the grain to grow coincidentally, and that it is an accidental occurrence (796).

The second and third examples Meyer uses are Aristotle’s explanations of his opponent’s position on the development of the parts of natural organisms. Aristotle states: “[o]n this view, it is of necessity that, for example, the front teeth grow sharp and well adapted for biting, and the back ones broad and useful for chewing food; this <useful> result was coincidental, not what they were for” (Irwin 114). Again, Meyer emphasizes that the development of teeth happen of necessity, but that the results are the important part, and they are accidental (Meyer 796). For the rest of the parts of animals, Aristotle states: “[o]n this view, then, whenever all the parts came about coincidentally as though they were for something, these animals survived, since their constitution, though coming about by chance, made them suitable <for survival> (Irwin 115). Because necessity is not even mentioned here, this is Meyer’s strongest example to prove her point that Aristotle’s opponents thought that the development of natural things is an accidental occurrence (Meyer 796).

Having shown that the rival thesis is likely to be a theory of accident, Meyer continues by introducing an important distinction Aristotle makes between intrinsic causes and accidental causes (798). She explains this distinction with several of Aristotle’s examples. The first is of a housebuilder and the building of a house. A person can be