I have always been intrigued by Hans Reichenbach’s pragmatic justification for induction (Reichenbach 1938; Salmon 1974). It is curiously compelling even as it leaves a lingering and unsatisfying aftertaste. The source for both its attraction and it aftertaste is its almost desperate appeal at the meta-argumentation level: we do not know if anything will work to give us knowledge of patterns in nature – we cannot even assume that there are patterns in nature – but if anything will work, inductive reasoning will work!

When the conditions are right, desperation arguments can be very strong. Reichenbach’s argument meets some of those conditions, but only some of them.

1. Measures for arguments
There is something exciting about desperation strategies like the “Hail Mary” passes on the last plays of American football games, when a team down to it last play throws caution to the winds and throws the ball up for grabs with hope and a prayer that it might be caught rather than dropped or intercepted, or the decision by a hockey team, down by a goal near the end of regulation time, to pull its goalie for a sixth attacking skater. The chances for success may be small and the risks may be high, but the potential payoff is great and they seem to be perfectly reasonable strategies in the circumstances. However, the reasoning behind those strategies is worth a closer look because not all structurally identical arguments are as compelling as Reichenbach’s appeal. We need the resources to tell them apart.

The primary resource is logic, but it only goes so far. Having been taught very well by a logician, we know that it is wrong to say that the present king of France is bald. He also thought it is wrong to say the past king of France was bald, but most of us never paid as much attention to that part of the lesson (Russell 1905,
pp. 484ff.). Extrapolating, I suspect that most of us would also shy away from saying that the future king of France will be bald.

Although both “The present king of France is bald” and “The past king of France was bald” fail to describe the situation, they miss the target in different ways, and the difference becomes immediately obvious when they are put into conversational contexts. Anyone asserting that the king is bald would be corrected: “There is no king!” In contrast, someone making the assertion about the past king would be met with a request for clarification: “Which one do you mean?” If the only yardstick available is a semantic taxonomy consisting of just the two values true and false, the difference is lost. Truth-values are not enough (Strawson 1950). The dialogical context makes that clear.

And, of course, the same thing applies to arguments: the semantic axis is not a sufficient yardstick for all the measures we need to take. Some differences are visible only in context through a dialectical lens.

The future king of France presents an entirely different set of problems but philosophers of language have a well-stocked toolkit at their disposal to account for the future French monarch’s shortcomings as a subject: we can identify non-rigid designation or non-attributive referential uses of descriptions (Kripke 1980, pp. 3-15; Donnellan 1966) along with the various speech acts that might be performed using that future indicative sentence (Austin 1975, pp. 4-7; Ryle 1953, Ch. 2). Are we making a prediction, claiming clairvoyance of a sort, or giving reassurances to the wig industry? Perhaps it is someone declaring his intention of seating Frans van Eemeren on the throne: “The future king of France will be bald!” Before we can decide whether the target has been hit or missed, we need to determine which of the many possible targets was in the sights. The pragmatic perspective has to be brought to bear here.

And, once again, the same thing applies to arguments: the logical and dialectical axes are not enough. We need all the conceptual apparatus we can get! We would be remiss not to exploit all the available resources. Pragmatic considerations are especially important for argumentation theorists because arguments are at least geometrically, if not exponentially, more complex than single, discrete speech acts, but also because there can be so many different purposes and functions and goals and desiderata for arguments – ranging over logical, rhetorical, and dialectical considerations but also including social, epistemological, emotional, political, and ethical factors, along with many others. There are many, many more
targets to hit or miss.

One particularly troublesome complication is that whatever the targets are for any given set of arguers, they are moveable targets. The possibility of hitting the target and achieving closure cannot be assumed. Arguments are open-ended in at least three ways, representing three ways in which the target can be moved out of reach. First, as Aristotle and Pyrrho pointed out, there is the danger of an infinite regress in seeking justification for one’s justifying premises. Second, procedural issues can always be raised, moving the argument to the meta-level. Going “meta” can be the first step in another sort of infinite regress (Krabbe 2007, p. 810 is a clever presentation of this). And third, stubborn or creative opponents can always raise new objections, press old ones, or simply refuse to acquiesce in any resolution by filibuster or turning a deaf ear (Cohen 1999). Together, they can be so densely intertwined that it is remarkable that closure is ever reached!

In practice, if the first concern is not put to bed in the opening stages of a critical engagement, it will be finessed further down the process as differences emerge from the common ground that makes argument possible.

The other two concerns, however, are less easily disentangled. The line between the dialectical tier and meta-level argumentation is permeable (Finocchiaro 2007). Ground-level objections to an argument can generally be recast as criticisms of the argument and comments about the argument. Conversely, much of what one might want to say on behalf of an argument can, and perhaps ought, to be included in the argument in the first place.

Of course, the fact that many objections can be cast as meta-commentary, and vice-versa, does not mean that they should be (Cohen 2007). The dialectical tier and the meta-level of argumentation are useful analytic tools for distinguishing otherwise comparable arguments, and that provides a compelling reason why the distinction between these two dimensions to arguments should not be collapsed. The “desperation arguments” behind those last-minute desperation strategies provide cases in point.

2. Reichenbach’s “desperation argument”

What Reichenbach’s pragmatic justification for induction has in common with Hail Mary passes is that both apparently invoke an “It’s-this-or-nothing-so-it-might-as-well-be-this” kind of reasoning. The dialectical lens reveals some differences; taking a meta-perspective reveals others. There is nothing inherently irrational about going for broke. What would, in some
contexts, be a case of throwing caution to the winds can, in other contexts, be completely rational, a strategy sanctioned by all the resources of game theory. After all, there is nothing in the least bit desperate about opting for the optimum strategy - and when nothing else can possibly succeed, the one strategy with any chance at all is obviously the best. That is, the arguments in support of desperation strategies need not themselves be desperate in any sense of the word.

What distinguishes desperation strategies is the willingness to accept normally unacceptable risks. Sixth attacking skaters do increase the chances for scoring goals all the time, not just at the ends of games. The downside is that to a much greater degree, they also increase the chances of giving up goals, thereby making it an unacceptable risk. Accordingly, let us reserve the term “desperation arguments” for those arguments that employ inferences and appeals that would be unacceptable in less extreme circumstance. Reichenbach’s argument on behalf of induction is just such an argument. It also has some pretty illustrious company in the history of philosophy including Pascal’s Wager, James on the Will to Believe, and, in some renderings, Kant’s transcendental arguments.

The pivotal premise in Reichenbach’s reasoning is that whether induction works or not depends on the nature of the world, which is precisely what induction is supposed to discover. That is, the target conclusion of induction is that the world has discoverable regularities grounding our predictions about the world. The order of nature cannot, then, be a premise for justifying induction. Reichenbach’s insight is that if the regularity of nature is a sufficient condition for the viability of induction, the viability of induction is a necessary condition for the regularity of nature - where the sufficiency of the order of nature is causal while the necessity of the viability of induction is epistemological. As he phrased it, “The applicability of the inductive principle is a necessary condition of the existence of a limit of the frequency [of a probabilistic occurrence],” i.e., of our living in what Reichenbach calls a “predictable” world. Therefore, if the world is at all predictable, induction will work. Contrapositively, induction won’t work only if the world is unpredictable. But if the world really is completely unpredictable and induction won’t work, then nothing else will work either! In other words, if anything works, induction works.

The conclusion, then, is the modest one that we are justified in using induction,
not that induction works. What about our belief in induction; is the belief justified? As an act, yes, we are justified in believing that induction works. In terms of the content of the belief, no, the proposition that induction works is not justified. It is a pretty palatable argument with a pretty bad aftertaste.

The most striking difference between Reichenbach’s reasoning and the reasoning behind Hail Mary passes is urgency. The clock is running out on the football team but the problem of induction has been a philosophical staple for centuries and it will be around for centuries more. It is not going anywhere. We are not desperate for an answer. We are, as Reichenbach’s argument implicitly underscores, free to use induction even if it cannot be justified in the way that foundationalists would like or in a manner consonant with the Cartesian quest for certainty. The worst-case scenario in Hail Mary passes is what is already the almost inevitable scenario: losing the game. The worst-case scenario for Reichenbach would be either the dogmatism of insufficiently justified beliefs or the skepticism of only tentatively-held beliefs. Of course, there is no consensus as to how inevitable or how unobjectionable these positions are. Pragmatic fallibilism is, in effect, really just an amalgamation of the two. On even a modest externalist account of knowledge, we might not actually be deprived of any knowledge in this worst-case except possibly some of our second-order beliefs regarding which of our beliefs should be counted as knowledge – a fairly mild worst-case scenario by any reckoning!

3. Desperate circumstances

The decision to use a sixth skater at the end of an ice hockey game brings some additional factors into focus. As noted, it increases the chances of scoring a game-tying goal, but it also increases the chances of yielding a game-clinching goal for the other team even more, so it is not a very good strategy when down by a goal in the middle of the game when lower risk strategies are still available. The problem becomes one of figuring out at what point the balance scale between patience with persistent 5-skater attacks and resorting to 6-skater attacks tips in the other direction. While there is a very significant difference during the course of a game between being down by two goals rather than one, there is no real difference at the end of the game between having lost by one goal and having lost by two. At some point, the sixth skater becomes the best strategy.

Contrast the hockey situation with the following situation from a game of bridge. South, the declarer, has landed in a shaky contract. She is missing the king of
trumps, the evidence from the bidding strongly suggests that it is probably in the West hand, to her left, but her only chance of winning is if the king turns up in the East hand, to her right. Since that is her only chance, she adopts a line of play premised on the assumption that that is indeed where the king is. It is a risky strategy, the evidence is against the premise, but it is her only chance.

What differentiates this case from the hockey team’s sixth skater is the fact that the risky strategy based on an unlikely assumption is not merely her best chance, it is her only chance to make the contract. Surely, that would make it a good strategy, right? Not necessarily. Context matters. It might not matter much whether a team loses by one goal or two, but in rubber bridge it does matter whether one goes down by one trick or two, and in duplicate bridge or tournament play it matters even more.

There are several important points of contrast with Reichenbach’s argument. First, the bridge example was set up as a genuinely desperate situation because of the negative evidence against the king being on the right. The justification for the strategy relies on an unjustified premise! That premise is too improbable to use in less urgent circumstances, but desperate times call for desperate actions. The urgency justifies the strategy. In contrast, not only is there no comparable urgency in the case for induction, but neither are there any useful probabilities to go on, neither to respect nor to override, when it comes to the premises. Probabilities, understood as the limits of frequencies, are part of what is at stake in induction.

Second, when the circumstances are right, the argument supporting the strategy of playing west for the king is very strong, and what makes it strong, is that it is both the only strategy that can succeed and, a fortiori, the best strategy. That makes dialectical closure very easy: to any objection that the strategy probably will not work there is the ready answer that there is no other option.

Reichenbach’s argument has neither that source of strength nor the associated access to easy closure. He does not claim that induction is the only way to discover patterns in nature, and he does not conclude that it is necessarily the best way. All that is claimed is that if there are any ways to that knowledge, induction will be one of them. It could be that any world in which induction works will be a world in which other methods work even better. Consequently, Reichenbach cannot deflect objections the same way. The objections he can counter are those that question whether induction will in fact work (probability,
remember, is not the issue). His reply would simply be, well, in that case nothing will work. It is not so much an admission of defeat as it is recognition that the situation is desperate.

Third, the bridge game can be differentiated from the hockey case by context: in duplicate play, going down by two tricks might be significantly worse than going down by only one. There are still reasons for playing cautiously. There are no counterparts to degrees of defeat for induction, so any counter-considerations against throwing caution to the winds do not apply.

When it comes to induction, then, we find ourselves in a very curious spot: it is not a typical desperate situation because it lacks the urgency of, say, limited time, that characteristically licenses desperate action and it is not an appeal to the only or the best of a limited choice of options, but the usual constraints against acting desperately are also absent.

4. Arguments, strategies, and commitment
The resolution of the apparent paradox of permissible desperation in a non-desperate situation is, appropriately enough, pragmatist. What we need to do is subject Reichenbach’s argument, which is itself an explicit meta-argument, to a meta-level analysis of its own. What, for example, is it trying to establish? What are the conditions necessary for its success and what, if it is successful, are the conceptual consequences? Is it the appropriate kind of argument to use here? One final comparison case will bring some additional relevant issues into greater relief.

An alcoholic, having hit rock bottom in her life – failed marriages, a ruined career, alienated friends, etc. – turns to Alcoholics Anonymous as a last resort. She commits to the twelve-step program in its entirety. The program requires that she surrender her life to a higher power, and even though she had never been able muster up that kind of faith before, she does so now because nothing else has worked and she is indeed desperate. “At that point, I had nothing left to lose,” she later explained, “so it was either that or nothing.” (The example is from a story on All Things Considered on National Public Radio.)

As in the bridge game, there is only one option that is regarded as having any chance at a success. Also like the bridge game, the crucial premise initially had little or even negative credibility. Theism was never something she could credit in her earlier life but, as we know, desperate circumstances call for desperate measures. The situation certainly qualifies as desperate, so the woman’s post
facto explanation apparently could just as easily have been a prior justification.

This is where the analogy with the bridge game begins to fall apart. The bridge player can act as if the king is on his right even though when push comes to shove he believes that in all likelihood it is not there. At the card table, acts and beliefs do not have to be in full agreement. That disconnect is what makes the strategy possible, but it is not available to the alcoholic. An essential part of what it means to surrender to a higher power is to believe in that higher power. The act cannot be separated from the belief because the act is first and foremost an act of belief. She cannot act as if she is completely surrendering to a higher power while at the same time harboring serious reservations about it. It would fatally compromise the commitment.

The analogy further deteriorates with respect to voluntarism. Perhaps the Red Queen can believe six impossible things before breakfast, but we cannot always simply choose to believe whatever we want, the way that we can adopt a strategy or a course of action. Some beliefs, at least, are more like events that happen to us than actions on our part. The difference is important because in the alcoholic’s case it is a belief that is being justified, not merely a course of action – and a belief that she could not really credit. Still, even if faith involves incredible beliefs and is not something that can in the normal course of events be willfully chosen, the “miracle of theism” does happen, and it happened to the woman in question.

Finally, the comparison completely collapses with respect to when and what kind of justification is possible. The norm of antecedent justification was ruled out for this particular woman by everything in her world-view, thereby creating a dilemma. Analytically, the decision to adopt an unjustifiable strategy is itself unjustified. The decision to embrace an unjustifiable premise, if that were even possible, would be similarly unjustified. However, we cannot rule out the possibility that an antecedently unjustifiable, but momentous, choice will radically alter the agent’s circumstances or her epistemic landscape, thereby becoming justifiable, albeit only in retrospect. In the alcoholic’s case, we can say that since what was for her an antecedently unjustifiable choice did pay off, the decision became “retroactively justified” in the sense developed by Bernard Williams (Williams 1976).

Because of these three factors – the clear possibility of a disconnect between thought and action, the possible impossibility of being able to choose belief, and the problematic possibility of retroactive justification ¬– the bridge player and the
alcoholic are in radically different epistemic situations. How do things stand with Reichenbachian inductivists? Are they more like the bridge player or the recovering alcoholic in regards to their epistemic and strategic situations? 

Prima facie, it is belief, rather than action, that is at stake. The context is epistemology, after all, and the focus of Reichenbach’s discussion is explicitly the “principle” of induction, rather than any specific inductions. The practice of induction is not really the issue: it is a fact of our lives. We will continue to make inductions regardless. What is at question is its epistemic status.

Reichenbach’s pragmatism is both more consistent and more extensive than the argument so far reveals. It extends beyond the consequentialist reasoning of desperation arguments to the nature of belief, and it dissolves the boundary between belief and action: “We do not perform... an inductive inference with the pretentions of obtaining a true statement. What we obtain is a wager” (Reichenbach in Pojman p. 500). That is, what gets justified is our expectations, attitudes, and behavior, not merely an academic’s commitment to an abstract proposition. The content of the principle of induction is defined by the contours of the practice. Incidentally, this vitiates, but does not completely eliminate, the specific problem of voluntarism with respect to beliefs.

Since extreme desperation entails acting against our best beliefs, does that mean Reichenbach’s pragmatism precludes the necessary and enabling disconnect between belief and action that we found in the bridge game? As is so often the case with pragmatism, the answer has to be a nuanced Yes and No because the constitutive concepts are evolving along with the discussion. Thus, Yes, Reichenbach’s approach does get in the way of dissociating belief and action because he so conscientiously conflates them. It would be disingenuous of a Reichenbachian inductivist to say that he does not really believe the principle of induction but is just acting that way. When a pragmatist says he believes something, we must be careful in interpreting what he means by believing. What justifies action, justifies belief. There is, then, a new concept of justification in effect. Unlike its verificationist cousin, Pragmatist consequentialism is based on reasons for actions, broadly understood, rather than just evidence for propositions, very narrowly understood (Locke 1935).

Reichenbach is fully aware that no accumulation of evidence from the past could ever suffice close the book on justifying induction, so retroactive justification is
not a possibility here, not even in the looser pragmatic sense of justification. But perhaps even that kind of justification is unnecessary. We already are inductivist beings, and there is a lower bar for existing beliefs (Harman 1984).

On the other hand, we can also say No, Reichenbach’s pragmatism is not inconsistent with distancing oneself from one’s own beliefs because there is a new concept of belief in effect, too. The “principle” that Reichenbach is arguing for is a rule for action, not an abstract proposition. The goal of his argument is actually very modest, namely, that we agree to accept this guide to action at least on a trial basis. The lack of supporting evidence or the presence of undermining evidence is not a deal-breaker.

Pragmatist belief is characterized by fallibilism. While that serves to immunize pragmatists from dogmatism, it also acts as a damper on commitment. Pragmatist beliefs are held, if not at arm’s length, then at least at a finger’s breadth remove. If we wanted to put it ungenerously, we could say that pragmatists don’t really believe their beliefs, at least not with the complete dogmatic conviction demanded by the 12-step recovery program of Alcoholics Anonymous. Thus, even though the argument is presented as “It’s this or nothing,” it really isn’t desperate in the same way as the other arguments. If successful, the conclusion is a pragmatically justified pragmatist’s belief, i.e., the provisional adoption of a proposed course of action. It is not something that would satisfy hyper-cautious epistemologists, including both Descartes at one end and skeptics at the other, viz., a discrete proposition conclusively supported by a foundationally grounded proof. But neither does it qualify as epistemically reckless – or even particularly desperate.

REFERENCES


