

The Great Syntactic Divide

by R. Salvador Reyes [Excerpted from "Narrative Complexity: A Consciousness Hypothesis," Essay #5-Memory & Cognition, pp. 139-149.]

Despite their cognitive similarities, the differences in purpose between all those rules, vocabulary & beliefs leads to an important distinction in how these resources appear to be built. The distinction: rules & vocabulary are built (& applied) *pre-syntactically*, and beliefs are built (& applied) *post-syntactically*. (And inflection, which is an ultimate motor result of this construction, is handled after both of those processes.)

This means that rules & vocabulary are built from (& applied to) the patterns identified in emergent subconscious data (which leads to the application of syntax to that data, thus "pre-syntactically") and beliefs are built from (& applied to) patterns detected in those syntactically-constructed thought-parcels (thus, "post-syntactically").

This essentially means that rules are based on "facts": pure data that can be arranged & matched to an identified valid prediction-pattern, a pattern which is—or was at its root—derived from our inborn rules. In contrast, beliefs are based on our *interpretation* of those "facts"—in essence, what those facts *mean to us* (emotionally) according to the syntax in which they have been structured.

In other words, our beliefs (like *all* of our emotional mechanics) are behavioral guidance-&-prediction-patterns based on how we interpret the relationships between those "factual" data patterns. And these belief-defining behavioral patterns are *all* learned in some fashion or another over time (which is *different* from the rest of our emotional mechanics, whose behavior-influencing gain/loss equations & responses are all *inborn*—i.e., even our pre-toddler & belief-less selves *automatically* feel emotions like *anger* toward someone who just took our lollipop).

Now let me un-spin your head. First, here's a quick way to tell if your brain has constructed one of these high-level prediction patterns as a belief or a rule: *how do you feel when you violate this belief or rule?* When we violate one of our beliefs, we feel *guilty*. When we violate a rule, we just feel...*stupid*. Thus, when we cheat (if we *believe* cheating is bad or wrong) we feel guilty. But when we violate a rule of grammar, we don't feel guilty, we feel incompetent.

And this doesn't just apply to rules of grammar. If we fail to apply reliable rules of narrative causality or physicality—leading to a bad result or an incorrect prediction—we aren't likely to feel guilty. Rather, we're likely

to be dismayed or perplexed by our mistake, asking ourselves things like "*how did I not see that coming?*" In these cases, we don't feel that we *chose* our error; in fact, we probably *thought* we were applying our rules correctly at the time. Thus, the mistake merely makes us feel like a failure, not like a bad person.

Violating a belief, of course, makes us feel exactly that way: *like a bad person*. In this case, we feel that we *did* choose our error (or felt powerless to resist its temptation) *despite* the fact that we knew what we were doing was "wrong" (likely to lead to an ultimately bad result).

This pre- & post-syntactic application of rules & beliefs likely plays a key role in that way in which we consciously perceive these different kinds of "mistakes." Rules (pre-syntactic) are applied in that purely-subconscious part of the narrative-construction process—which is why overlooking or misapplying them feels like an unconscious mistake. But beliefs are applied in the earliest moments of a thought entering our consciousness: post-syntactically, just after our sentence of internal dialogue has been constructed & readied for our conscious roadway. Thus, we feel like we are *aware* of our belief violation at the time we commit it, and are therefore *guilty* of our mistake.

Which leads us to a probable truth that you aren't going to like—even though one of these actions (belief-application) feels more

"voluntary" than the other, they're both essentially the result of the same kind of mechanic. Another way to look at it: our belief-application system (which is at the root of most of the big decisions that we *feel* we make voluntarily) is not any greater an "agent of self" than our rule-application system. They play equally vital & very similar roles in the way our consciousness uses syntax to build predictions & make decisions. The main difference is that they happen on opposite sides of syntax construction within our internal dialogue loop.

Which is, come to think of it, actually a pretty *big* distinction—it's that *Great Syntactic Divide*. But is this distinction enough to say that our belief-application system is where the notion of "free will" might start to get a foothold in our consciousness? That's a delicious & dangerous question—and one that we'll save for our next (the *final*) essay. For now, it's more useful to focus on these systems' *similarities* in addition to their differences. The many similarities between beliefs & rules mean that we can often interchangeably use different combinations of both resources to arrive at or frame a decision. Examining an example of this should make everything here a lot more clear:

A high school student is taking a difficult test in a room full of other students. (The test is not graded on a curve, and no one powerfully admires the teacher—we'll note why these factors might be important later.) During the

test, the teacher is called out of the room on an emergency. She says she'll be only be gone ten minutes, and that she trusts no one will cheat in her absence. She is, of course, wrong. As soon as she leaves, everyone except for our one student immediately begins using their notes and books. Our student hesitates, then finally thinks...

Now, our student could obviously think a plethora of things. But if they are going to eventually decide to use their notes or not (as opposed to the decision causing them to pass out from the pressure or run out of the room screaming) then their decision-making thought can likely be reduced to one of the following types of narrative constructions (essentially, types of belief- & ruled-based reasoning). I've labeled each example in order to help distinguish & define the different types of narrative constructions.

All of these constructions assume our student believes at some level that "Cheating is bad" & that everyone would benefit strongly from cheating (obviously, if they didn't think it was bad, they would simply cheat, and if there wasn't a benefit, they wouldn't have any need to cheat—except for a need, say, *to not look like a square*, which will also be covered). We'll start with the most-obvious construction...

BELIEF FAILURE: *I'm using my notes, which I know is totally cheating & I don't feel good about it, but I want a better test score—end of story.* There's not much to explain here. The potential gain was simply too tempting for

this person & their belief lost the decision-making neural war—which can happen for lots of reasons: weak beliefs, strong need, big potential gain, ingrained behavioral patterns, etc. This person is likely to feel a good dose of guilt (& it's probably a familiar feeling to them).

RULE-BASED RATIONALISM: *I'm using my notes, because everyone else is too, so it's not even actually cheating—it's basically an "open book" test now.* This person has found a way to avoid engaging their "Cheating is bad" belief by constructing & defining the narrative such that the act does not constitute cheating. This person is likely to feel little guilt about the act.

BELIEF-BASED RATIONALISM: *I'm using my notes, which yes, is technically cheating—but everyone else is doing it.* This person has defined their act as cheating, thus activating their belief that "Cheating is bad." But for them, this is not an iron-clad belief—and somewhere above it in their hierarchy is the belief that "Bad things aren't as bad when everyone else is doing them." This belief essentially gives their brain permission to cheat under these specific circumstances, even though they would agree that they're cheating & that cheating is generally bad.

This reasoning might be replaced in other versions of this belief-based rationalism by beliefs like "If it doesn't hurt anybody else, it's not wrong" (which *grading on a curve* or *admiration for a teacher* might negate) or

some version of the very simple & effective belief "I'm special—these rules don't apply to me." No matter how they rationalize it, this person is likely to feel at least some guilt over their act, but they can live with it.

BELIEF RELIANCE: *I'm not using my notes. I don't care what everyone else is doing—that would be cheating.* This person is likely confident enough in their belief system that they are less prone to use rule-based rationalization in order to achieve a short-term gain. This confidence also likely makes them less prone to have an imprecise, but convenient belief-hierarchy in which over-generalized beliefs like "Bad things aren't as bad when everyone is doing them" end up as top-level beliefs (which is potentially very dangerous).

This person has been conditioned to feel that the best strategy is the application of strong, specific beliefs to brutally-accurate narrative construction. Guilt obviously isn't a factor here—and neither is the pain that can sometimes result from the perceived "loss" of an unexploited value gain like cheating. As desirable as it seems, this belief-confidence (which often results in socially-constructive behavior) can also get...*ugly*. If your belief system has, for example, over time been able to convince you of the absolute inferiority of certain other races & you've developed a naive overconfidence in these beliefs—well, in these kinds of cases strict *Belief-Reliance* clearly begins to show some of its potential flaws.

BELIEF CONFINEMENT: *Cheating would totally help me, and everyone else is doing it, and it's not like it's gonna hurt anyone, but... what if I get caught? I'd feel too guilty. I just can't.* This person's brain (likely because of previous behavior-patterns) has used their narrative construction to give them several possible reasons to apply a higher level belief to the situation. Alas, their belief that "Cheating is bad" (and its prediction of possibly-dire consequences) is powerful, and it has confined their actions even in the presence of strong narrative motivations.

This is, of course, exactly what beliefs are supposed to do. Even though this person is likely to experience some of that "loss" pain from an unexploited gain, they're willing to suffer that pain instead of the guilt. And in more extreme versions these *Belief Confinement-based* inner-conflicts, an individual's capacity to overcome that predicted & ongoing "loss" pain—in order to "make the right choice"—is heavily influenced by those endorphin-based *willpower* mechanisms discussed in essay #2, which are designed to aid us in exactly these kinds of *opposing-impulses* scenarios.

Belief Confinement can also be at the root of a student's choice to cheat in order to *not look like a square* ("Being popular is more important than anything" or "Being unpopular leads to misery"). *Belief Confinement* might also lead you to cheat because to *not cheat* when *everyone else* is cheating might be viewed as being a

“teacher’s pet”—which might violate a belief that “Being a teacher’s pet is bad or disloyal to your fellow students.” The difference between this kind of narrative construction & *Belief Rationalization* or *Belief Failure* is the goal of the behavior that the belief is “confining” or “rationalizing” or “failing to mitigate.”

In our rationalization & failure scenarios earlier, the student wants the gain of *a better test score*; the rationalization allows them to use a higher level belief to achieve the desired gain & the failure allows them to essentially *ignore* their beliefs. In the confinement examples described in the previous paragraph, the student might actually prefer *not* to cheat (making the act of cheating feel more like a *loss* than a gain) and yet might still feel *compelled* to cheat (or *confined* to cheating behavior) in order to adhere to their powerful beliefs regarding what is socially acceptable in high school’s uniquely-convoluted communal structure.

In other words—Belief Failure, Belief-Based Rationalization & Rule-Based Rationalization are all ways in which our brain chooses to violate a belief in order to pursue a gain (or avoid a loss). Oppositely, Belief Reliance & Belief Confinement are ways in which our brain chooses to adhere to a (usually strong) belief in order to refuse a gain (or accept a loss). Basically, in the properly “confining” hierarchical combination—beliefs can be used to *make us* do pretty much anything (just as *Belief & Rule Rationalization* can be

used to *allow us* to do pretty much anything).

This does not mean, however, that in those confinement scenarios our beliefs are an essentially uselessly-relative & socially-manipulative tool. In truth, I think most of us make our most-difficult “correct” (most ultimately-beneficial) choices in this *Belief-Confinement* way—not in the swaggering, defiant fashion of the *Belief-Reliant* person. (And in human behavioral terms, flexibility is often the *most preferred* trait in a system or the state in which its “equilibrium” is most sustainable—*adaptability* being our primary evolutionary advantage.) Usually, when caught in the grip of a “tough call,” we are wanting oh-so-badly that delicious in-our-reach gain, and are only kept from it by some annoying, nagging *behaviorally-confining* belief.

Which sometimes makes us wish that we *didn't have* those annoying beliefs hanging around and killing our buzz. But after this final example, you might feel differently. This one doesn't really *belong* in our examples (because it's based on a brain with an inborn deficit) but it *does* occur in some cases. And this outlier powerfully demonstrates the importance of beliefs. Plus, it's pretty fascinating—in a somewhat *disturbing* way...

PSYCHOPATHIC BEHAVIOR: *I'm obviously using my notes, because it'll help me & I probably won't get caught, and if I do get*

caught, I'll just point out that everyone was doing it, so she'll have to punish all of us, which is almost the same as punishing none of us. This is what you get when you don't have a functioning belief system *at all*—which likely leads to the development of a more-robust rule system (in order to help create more-reliable complex predictions in the absence of prediction-aiding beliefs). Our theory hypothesizes that this non-functioning belief system is the primary neural deficit that is at the root of most psychopathic behavior.

A psychopath's lack of belief-invoked guilt or remorse, their tendency to be capable manipulators (a likely result of that over-compensating rule-development) and their focus on the pure value-propositions in every situation regardless of the situation's societal (belief-defined) "moral" constraints—these are all hallmarks of psychopathic behavior. And you can create all of those effects simply by shutting off someone's belief system.

Thus, it's a mistake to call psychopaths emotionless (as they are often described). Even without beliefs, the rest of their emotions can still function. This means that they can use them to make calculations about value gain/loss, predictions, and Agents of Value—which are crucial to that effective manipulative streak. And they display (and appear to feel) plenty of emotions: anger & rage (often apparently uncontrollable) over a loss, animosity

towards potential Agents of Loss, gratitude for a gain provided, selfishness surrounding their own resources, pleasure over some machiavellian success, excitement over anticipated gains.

And it makes sense that some of the more evolutionarily-weighted emotions (like anger) would be expressed most readily & perceivably—considering these individual's lack of behaviorally-calibrating beliefs. Additionally, emotions (& brain areas) that are closely related to & often accompany disgust (like fear) might grow generally weaker in psychopaths—like a muscle that *under-develops* due to the total absence of those frequent disgust-related usages. (Keep in mind that *every time* we experience the disgust or guilt of belief violation, that judgement is predicting that the behavior is likely to lead to an eventual *loss*—which automatically triggers *fear*.) Regardless of how outwardly muted or powerful these emotions may appear in any particular psychopath at any particular moment, it's likely the emotions (and their necessary calculations) are in there somewhere.

Therefore, they're not always "faking" these emotional displays (although they often likely are). But—although psychopaths can judge & feel these things—much of our *behavior* is learned through our belief systems. (Look at how people from the same culture, but different families or genders, *believe* that affection is shown in different ways—which is the source of much marital

distress.) Thus, despite feeling the emotion, a psychopath may show no outward display at all if they don't deem that behavior as helping them to get what they want in the moment.

They could calculate this decision using advanced rules, which—unlike beliefs—would only likely orient the behavior from the perspective of the individual's personal gain. In other words, a psychopath's human interaction is primarily a result of a pure self-value-based emotional calculation; the attendant behavior may or may not be necessary in their rule-based view.

And their success in manipulating others—in "playing" people to achieve their gains—directly contradicts another common misperception about psychopaths: that they lack empathy. Empathy is a function of our mirror neurons, and our mirror neurons play a key role in our ability to manipulate others. In addition, mirror neurons play a key role in lots of other *and much more fundamental* processes—like *language acquisition*. This means that if psychopaths were really suffering from “abnormalities” in those *mirror-neuron-based* empathy mechanisms, they'd display a lot of other much more apparent & developmentally-altered behavior than simply *behaving like assholes*.

Narrative Complexity actually hypothesizes that mirror-neuron-related dysfunction is at

the root of two closely-linked¹⁹—but according to our theory, oppositely-caused—neural conditions that we'll discuss in more detail later: autism (overstimulated & indiscriminately-applied mirror neurons) and Asperger's (non- or low-functioning mirror neurons). Because mirror neurons (when properly functioning) are devoted to specifically identifying & analyzing other “like entity” data input, effectively perceiving how someone is reacting or feeling and then faking the appropriate response to achieve your gain *requires* empathy (in addition to strong rule-based prediction skills).

Unfortunately, even if you still have the ability to feel someone else's loss—but you're good at rationally understanding that their loss *isn't* actually your loss—and if you don't have any beliefs that define pain-infliction as bad, then empathy can't make you a “better” person. (Even healthy, empathy- & belief-capable people who simply don't *believe* pain-infliction is always bad can make great & almost-guiltless torturers.)

In addition—in situations like cheating or stealing or murdering—beliefs are what help us to know when an obvious value gain or loss avoidance is better to be left alone (for some bigger reason than our own individual benefit). And beyond just teaching us *when & how* to express emotions like affection, beliefs are also what *compel* us to behave in those ways that express our

affection (because we are normally driven to avoid the guilt of non-compliance).

We all learn how to best show our affection through whatever social group we are in, and we feel compelled to behave accordingly — judging how much affection we have for someone and calibrating what has been learned to be the *expected* response. Thus, we hug someone we view as a high potential Agent of Gain because that's what our beliefs tell us we *must* do if we've defined that person in this way (*if you don't hug your mom, you feel guilty*).

A psychopath can still judge someone as a potential Agent of Gain, but if there is no purely narrative reason to hug them at that moment (i.e., I want them to give me a cookie right now and hugging will help) then they aren't compelled to hug that person because they have no behavior-guiding belief that compels them to hug them *just because they have "affection" for them*.

Furthermore, even though they can technically have that affection for a person, they don't *feel* it in the same way that most of us do. That's because most of us accompany our pure potential-value-based affection with something else: *admiration*, which is an emotion that relies on beliefs.

Consider this: *a son has a father who gives him everything he wants, but the son knows that his father murders innocent people to earn a living. If this son is disgusted by his father's*

behavior and thus, does not admire him, the son's overall feeling of affection is likely not very high (or at least it's conflicted)—despite his dad being a high-value potential Agent of Gain. It seems that without admiration, a child's love just doesn't have that same shine. Which is good description of how psychopathic children appear to feel about their parents. (In addition, since we learn so many of our beliefs from our parents' behavior, we are more likely to admire them—and acquire that shine—due to those common beliefs.)

This diversion into our darker brethren tells us one thing above all: beliefs are fundamental to a healthy human existence. But I think it also tells us something else: psychopaths are not inherently "evil" individuals. They haven't replaced healthy, productive, non-violent beliefs with some opposite, socially-destructive set of beliefs (which is a case for epidemiologically separating the now-synonymous terms psychopath & sociopath—since the latter well-describes individuals whose systems all function, but whose beliefs are simply *totally screwed up*).

Psychopaths merely view the world as truly self-centered beings. All gains & losses are about *them*. And as they grow older, they essentially remain an emotional infant, but achieve the logical & perceptive capacities (and needs & desires) of an adult. Combine this with other aberrant behaviors that are likely to result from an out-of-control rule

system (grown hulk-like in its lifetime of overcompensation & overuse) and you have the blueprint for *dangerous* psychopaths like serial killers.

Those aforementioned out-of-control-rule-system-based aberrant behaviors can include troubling stuff like: *ritualism*—ingrained & repeated rule-based behavioral “causal sequences” containing excessive, non-essential actions that are incorrectly perceived to be necessary in order to achieve the sequence’s intended result; *fetishism*—ingrained & persistent need for specific pleasure-seeking acts (like sex) to be accompanied by highly-specific rule-based criteria in order for those acts to produce actual pleasure; and *extreme behavioral rigidity*—ingrained, persistent & inflexible adherence to one’s personal rules regardless of the behavior’s impact on others, and a rigid unwillingness to violate or compromise one’s personal rules at the request of others, regardless of circumstance or social expectation.

So, *yes*, this is a combination that’s very likely to very quickly produce very undesirable results, but that is not *necessarily* pre-destined based on the neural deficit. I believe that early intervention (toddler-age) with a focused program of rigorous, specifically-applied rule-building would help to make these people much more functional in society. Unfortunately, it would be awfully hard to be certain that undesirable results wouldn't eventually emerge. In the end,

without our beliefs, human brains just don't work very well (that is, if a healthy social fabric is one of your goals).

Leaving behind our tangent into strangeness, and returning our discussion to *all* of the belief- & rule-application examples above—what do they *collectively* ultimately tell us? They tell us that when it comes to decision-making, our use of beliefs & rules to structure or frame that decision is highly flexible. They also tell us that *how* we structure that narrative and *how* we've prioritized our beliefs ultimately define every conscious (or *non-reflexive*) decision we make.

But a cognitive process like the one presented here also raises a question about those beliefs & syntax: if our belief resource is applied *after* syntactic narrative construction, how can we include conscious & verbalized consideration of those beliefs in that *pre-belief-resource* narrative-construction location in our loop? In the view of our theory, the answer to this is reflected in the way that we build our vocabulary resource from other occurrences of those words stored in our memory (& from the emergence of those words & their associated data in our "working" memory).

This kind of "dual-presence" in our right-brain memories & our left-brain cognitive resources is also true of beliefs. Those experiences in which we've been told a

belief by others or thought about it ourselves is the data that's the *root source* of any belief that ends up in our cognitive belief resource. And some of those experiences (& thus the word-based narrative parcels that express those beliefs) are recorded long-term in our memories, making them available to be used in our narrative construction when situationally appropriate.

But merely *expressing* a belief in this way does not mean our behaviors or actions will automatically adhere to or be impacted by this *expressed* belief. That's because that behavior is determined by where this expressed belief *actually resides* in our belief resource hierarchy—aka, the belief's *strength*. This means that if our action or our syntactic definition of that action actually violates a belief that is *stronger* than the one we internally or verbally expressed, we might still hesitate to act or might feel guilty about the act even though it does not violate the *expressed* belief (which was expressed *instead* of the stronger belief merely because it was the first related emergent data to earn a slot in that particular round of narrative construction).

For example: *In the middle of a chaotic & unpoliced protest march, your anarchist buddies urge you to throw the rock through the bank window, and you yell, "You bet I'm throwing this rock! The plutocracy must be attacked at*

every opportunity!" But in this same moment, as you cock your arm to throw the rock, you feel the urge to hold back, and suddenly your internal dialogue is filled with thoughts about what your mother would think. Next thing you know, you're dropping the rock.

Theoretically, the rock-throwing hesitation could occur before the thoughts of your mother emerged (that momentary pause was what gave you the time to generate them). Thus, the pause was actually the result of your intended action *violating* a very high level (but not yet consciously contemplated) & *bourgeois* belief like "Vandalism is wrong"—causing you to hesitate even though the action was strongly supported by your actual syntactic construction & your *expressed* belief (and your desire to look cool in front of your fellow anarchists).

Basically, we can *say* that we believe anything that we want or think we ought to believe, but beliefs are a *very real* thing—a specific & powerful element of our cognition. In other words, for our brains to actually guide our behavior according to a belief (i.e., produce guilt when it's violated) that belief *must have*—through experience or study—actually *earned* its place in our belief resource hierarchy. Thus, your capacity to identify & articulate a belief via memory-based data is not the same thing as

actually having that belief filed & applicable within our belief resource.

This capacity to identify & articulate a belief via memory-based data *does*, however, explain how can we include conscious & verbalized consideration of those beliefs in that *pre-belief-resource* narrative-construction location in our loop.

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FOOTNOTES:

19. Oberman, Lindsay M., et al. "EEG evidence for mirror neuron dysfunction in autism spectrum disorders." *Cognitive Brain Research* 24.2 (2005): 190-198.