

“Ghost in the Machine, Part I”

The way out is through the door. Why is it that no one will use this method?

— Confucius (551 – 479 BC)

Tanzan and Ekido were once traveling together down a muddy road. A heavy rain was still falling. Coming around a bend, they met a lovely girl in a silk kimono and sash, unable to cross the intersection.

"Come on, girl," said Tanzan at once. Lifting her in his arms, he carried her over the mud.

Ekido did not speak again until that night when they reached a lodging temple. Then he could no longer restrain himself. "We monks don't go near females," he told Tanzan, "especially not young and lovely ones. It is dangerous. Why did you do that?"

"I left the girl there," said Tanzan. "Are you still carrying her?"

— Nyogen Senzaki, *"Zen Flesh, Zen Bones: A Collection of Zen and Pre-Zen Writings"* (1957)

In 1995, David Justice had a superior batting average to Derek Jeter (.253 to .250)

In 1996, David Justice had a superior batting average to Derek Jeter (.321 to .314)

In 1997, David Justice had a superior batting average to Derek Jeter (.329 to .291)

Yet from 1995 – 1997, Derek Jeter had a superior batting average to David Justice (.300 to .298)

— example of Simpson's Paradox, aka The Yule-Simpson Effect (1951)

A student says, "Master, please hand me the knife," and he hands the student the knife, blade first. "Please give me the other end," the student says. And the master replies, "What would you do with the other end?"

— Alan W. Watts, *"What Is Zen?"* (2000)

Such in outline is the official theory. I shall often speak of it, with deliberate abusiveness, as "the dogma of the Ghost in the Machine." I hope to prove that it is entirely false, and false not in detail but in principle. It is not merely an assemblage of particular mistakes. It is one big mistake and a mistake of a special kind. It is, namely, a category mistake.

— Gilbert Ryle (1900 – 1976)

The trouble with Oakland is that when you get there, there isn't any there there.

— Gertrude Stein (1874 – 1946)

Dr. Malcolm: Yeah, yeah, but your scientists were so preoccupied with whether or not they *could* that they didn't stop to think if they *should*.

— "Jurassic Park" (1993)

It's a big enough umbrella

But it's always me that ends up getting wet.

— The Police, *"Every Little Thing She Does is Magic"* (1981)

Everyone who lost money on the SNB's decision to reverse course on their three and a half year policy to cap the exchange rate between the CHF and the Euro made a *category error*. And by everyone I mean everyone from Mrs. Watanabe trading forex from her living room in Tokyo to a CTA portfolio manager sitting in front of 6 Bloomberg monitors to a financial advisor answering a call from an angry client. It will take me a bit of verbiage to explain what I mean by a category error and why it's such a powerful concept in logic and portfolio construction. But I think you'll find it useful, not just for understanding what happened, but also (and more importantly) to protect yourself from it happening again. Because this won't be the last time the markets will be buffeted by a forex storm here in the Golden Age of the Central Banker.

A year and a half ago, when I was just starting Epsilon Theory, I wrote a note called "[The Tao of Portfolio Management](#)." It's one of my less-downloaded notes, I think largely because its subject matter – problems of misunderstood logic and causality in portfolio construction – doesn't exactly have the sexiness of a rant against Central Bank Narrative dominance, but it's one of my personal favorites. That note was all about the *ecological fallacy* – a pervasive (but wrong-headed) human tendency to infer qualities about the individual from qualities of the group, and vice versa. Today I've got the chance to write once again about the logic of portfolio construction AND work in some of my favorite Zen quotes AND manage something of a Central Bank screed ... a banner day!

I've titled this note "**The Ghost in the Machine**" because it starts with another pervasive (but wrong-headed) human tendency – the creation of a false dualism between mind and body. I know, I know ... that sounds both really daunting and really boring, but bear with me. What I'm talking about is maybe the most important question of modern philosophy – is there a separate thing called "mind" or "consciousness" that humans possess, or is all of that just the artefact of a critical mass of neurons firing within our magnificent, but entirely physical, brains? I'm definitely in the "everything is explained by neurobiology" camp, which I'd say is probably the more widely accepted view (certainly the louder view) in academic philosophy today, but for most of the 19th and 20th centuries the dualist or Cartesian view was clearly dominant, and it was responsible for a vast edifice of thought, a beautiful cathedral of philosophical constructs that was ... ultimately really disappointing and empty. It wasn't until philosophers like Gilbert Ryle and Van Quine started questioning what Ryle called "the ghost in the machine" – this totally non-empirical but totally accepted belief that humans possessed some ghostly quality of mind that couldn't be measured or observed but was responsible for driving the human machine – that the entire field of philosophy could be reconfigured and take a quantum leap

forward by incorporating the insights of evolutionary biology, neurobiology, and linguistics.

Unfortunately, most economists and investors still believe in ghosts, and we are a long way from taking that same quantum leap. [There is an edifice of mind that dominates modern economic practice](#) ... a beautiful cathedral where everything can be symbolized, where everything can be securitized, and where everything can be traded. We have come to treat these constructed symbols as the driver of the economic machine rather than as an incomplete reflection of the real world things and real world activities and real world humans that actually comprise the economy. We treat our investment symbols and thoughts as a reified end in themselves, and ultimately this beautiful edifice of symbols becomes a maze that traps us as investors, just as mid-20th century philosophers found themselves trapped within their gorgeous constructs of mind. **We are like Ekido in the Zen koan of the muddy road, unable to stop carrying the pretty girl in our thoughts and trapped by that mental structure, long after the far more sensible monk Tanzan has carried the girl safely over the real world mud without consequence, symbolic or otherwise.**

The answer to our overwrought edifice of mind is not complex. As Confucius wrote in *The Analects*, the door is right there in front of us. Exiting the maze and reducing uncompensated risk in our portfolios does not require an advanced degree in symbolic logic or some pretzel-like mathematical process. **It requires only a ferocious commitment to call things by their proper names.** That's often not an easy task, of course, as [the Missionaries of the Common Knowledge Game](#) – politicians, central bankers, famous investors, famous economists, and famous journalists – are dead-set on giving things false names, knowing full well that we are hard-wired as social animals to respond in ant-like fashion to these communication pheromones. **We are both evolved and trained to think in terms of symbols that often serve the purposes of others more than ourselves, to think of the handle rather than the blade when we ask for a knife.** The *meaning* of a knife is the blade. The handle is not “the other end” of a knife; it is a separate thing with its own name and usefulness. The human animal conflates separate things constantly ... maybe not a big deal in the kitchen, but a huge deal in our portfolios. Replace the word “knife” with “diversification” and you’ll get a sense of where I’m going with this.

Here’s what I mean by calling things by their proper names. The stock ticker “AAPL” or the currency ticker “CHF” are obviously symbols. Less obviously but more importantly, so are the shares of Apple stock and the quantities of Swiss francs that AAPL and CHF represent. Stocks and bonds and

commodity futures and currencies are symbols, not real things at all, and we should never forget that. **The most common category error that investors make (and “category error” is just a \$10 phrase for calling something by the wrong name) is confusing the symbol for what it represents, and as a result we forget the *meaning* of the real world thing that’s been symbolized.**

A share of stock in, say, Apple is a symbol. Of what? A limited liability fractional ownership position in the economic interests of Apple, particularly its free cash flows.

A futures contract in, say, copper is a symbol. Of what? A commitment to receive or deliver some amount of real-world copper at some price at some point in the future.

A bond issued by, say, Argentina is a symbol. Of what? A commitment by the Argentine government to repay some borrowed money over an agreed-upon period of time, plus interest.

A currency issued by, say, Switzerland is a symbol. Of what? Well, that’s an interesting question. There’s no real world commitment or ownership that a currency symbolizes, at least not in the same way that stocks, bonds, and commodity contracts symbolize an economic commitment or ownership stake. **A currency symbolizes government permission. It is a license.** It is an exclusive license (which makes it a requirement!) to use that currency as a medium for facilitating economic transactions within the borders of the issuing government, with terms that the government can impose or revoke at will for any reason at all. That’s it. There’s no economic claim or right inherent in a piece of money. As Gertrude Stein famously said of Oakland, there’s no there there.

Why is this examination of underlying real world meaning so important? **It’s important because there is no positive long-term expected return from trading one country’s economic license for another country’s economic license.** There is a positive long-term expected return from trading money for stock. There is a positive long-term expected return from trading money for bonds. There is a positive long-term expected return from trading money for commodities and other real assets. But there is no positive long-term expected return from trading money for money.

Unfortunately, we’ve been trained and encouraged – often under the linguistic rubric of “science” – to think of ANY new trading vehicle or security, particularly one that taps into as huge a market as foreign exchange, as a good thing for our portfolios. We are deluged with the usual narratives that alternatively seek to tempt us and embarrass us into participation. On an individual level we are told stories of savvy investors who look and act like we want to look and act, taking bold advantage of the

technological wizardry (look! it's a heat map! that changes color while I'm watching it!) and insanely great trade financing now at our fingertips in this, the best of all possible worlds. On an institutional level we are told stories of liquidity and non-correlation (what? you don't understand what an efficient portfolio frontier is? and you call yourself a professional?), both good and necessary things, to be sure. But not sufficient things, at least not to cast the powerful magic that is diversification.

There are only a few sure things in investing. First, taxes and fees are bad. Second, compound growth is a beautiful thing. Third, portfolio diversification works. At Salient we spend a lot of time thinking about what makes diversification work more or less well for different types of investors, and if you're interested in questions like "what's the difference between de-risking and diversification?" I heartily recommend our latest white paper ("[The Free Lunch Effect](#)") to you. One thing we don't do at Salient is include currency trading within our systematic asset allocation or trend-following strategies. Why not? **Because Rule #1 for tapping into the power of portfolio diversification is that you don't include things that lack a long-term positive expected return.** Just because we *can* trade currency pairs easily and efficiently doesn't mean that we *should* trade currency pairs easily and efficiently, any more than cloning dinosaurs because they could was a good idea for the Jurassic Park guys. The point of adding things to your portfolio for diversification should be to create a more effective umbrella, not just a bigger umbrella. I like a big umbrella just as much as the next guy, but not if I'm going to get wet every time a forex storm whips up.

So if not for diversification, why do smart people engage in currency trading? There's a good answer and a not-as-good answer to that question.

The good answer is that you have an alpha-driven (i.e. private information-driven) divergent view on the terms of the government license embedded within any modern currency. This is why Stanley Druckenmiller is an investing god, and it's why anyone who put money with him before, during, and after he and George Soros "broke the Bank of England" in 1992 has been rewarded many times over.

The not-as-good answer is that you have identified a predictive pattern in the symbols themselves. I say that it's not as good of an answer, but I'm not denying that there is meaning in the pattern of market symbols. On the contrary, I think there is real information regarding *internal market behaviors* to be found in the inductive study of symbolic patterns. This information is alpha, maybe the only consistent source of alpha left in the world today, and [acting on these patterns is what good](#)

[traders DO](#). But because it's inductively derived, anyone else can find your special pattern, too. Or if they can't, [it's because you've carved out a nice little parasitic niche](#) for yourself that's unlikely to scale well. More corrosively, the natural human tendency is to ascribe meaning to these patterns beyond the internal workings of the market, something that makes no more sense than to say that goose entrails have meaning beyond the internal workings of the goose. **The meaning of the Swiss franc didn't change just because you had a consistent pattern of market behavior around the EURCHF cross. Deviation in the expected value of the Swiss franc in Euro terms did not become normally distributed just because you can apply statistical methodology to the historical exchange rate data.** I get so annoyed when I read things like "this wasn't just the greatest shock in the history of forex, it was the greatest shock in the history of traded securities! a 30 standard deviation event!" Please. Stop it. Just because you *can* impose a normal distribution on the EURCHF cross doesn't mean that you *should*. And if you're making investment decisions because you think that this normal distribution and the internal market stability it implies is somehow "real" or has somehow changed the fundamental nature of what a currency IS ... well, eventually that category error will wipe you out. Sorry, but it will.

I don't mean to be snide about any of this (although sometimes I can't help myself). The truth is that an aggregation of highly probabilistic entities will always surprise you, whether you're building a baseball team or an investment portfolio. Portfolio construction – the aggregation of symbols and symbols of symbols, all of which are ultimately based on massive amounts of real world activities that may have vastly different meanings and underlying probabilistic natures – [is a really difficult task under the best of circumstances for a social animal that evolved on the African savanna for an entirely different set of challenges](#). And these are not the best of circumstances. No, the rules always change as the Golden Age of the Central Banker begins to fade. The SNB decision was a wake-up call, whether or not you were directly impacted, to re-examine portfolios and investment behavior for category errors. We all have them. It's only human. The question, as always, is whether we're prepared to do anything about it.

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