

Trading Options and the Unattainable Dream: Some Reflections on Semiotic Ideologies

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ABSTRACT

Over the last few decades there has been a miniature industrial revolution in the buying and selling of securities on capital and derivatives markets. Whereas most trading once happened in open outcry pits or over the phone, trading now occurs primarily via electronic limit order books. Whereas once traders could have little education and find work as a consequence of membership in a local insular network, new financial hires are now the most talented graduates of PhD and master's programs in the hard sciences and mathematics. Even though these circumstances are well attested, knowing is not enough for some to become this new kind of trader. I suggest that the theory of semiotic ideologies—that is, what grounding assumptions people bring to the process of interpreting signs—can be used to illustrate boundary cases of social change in which people are simply unable to learn enough to adapt to new circumstances in their lives. I will show that even though traders can adopt the appropriate semiotic ideology of markets that their times demand, some of them will never be skilled enough to fully participate. This, in turn, has to do with the nature of change in a capitalist economic system.

Enos Millfield was a tall, athletic white man whose clothing shouted where he was from. When I met him in the middle of a weekday at a coffee shop near a Chicago-area university, he wore a pair of Chicago Bears (Chicago's professional American football team) gym shorts, a Chicago Blackhawks (Chicago's professional hockey team) t-shirt, and a University of Chicago (a private university

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on Chicago's South Side) hooded sweatshirt. Enos was sitting out a non-compete agreement, in between jobs at various trading firms, making the most of his time off and working toward a master's degree in computer science from another Chicago-area university.

Enos worked and would work again as an options market maker. I was looking to talk with him about the work he did and about how he understood the industry, that is, to conduct a general life and work history interview and ask about changes in the behavior of financial markets as he sees them. This interview was part of a larger group project on financial markets that has involved interviews (180 and counting) with traders, regulators, exchanges, and interstitial financial professionals; participant observations shift in trading firms; and simulations of various market conditions on an agent-based modeling platform. The larger motivation for our study has to do with the dramatic changes that have come to markets in the last few decades.

One Financier's Lament: Don't Send Me Any Finance Majors

Public and private financial markets have largely computerized and automated such that the vast majority of stocks and standardized derivatives are traded automatically and electronically. This shift has led to an exponential increase in the volume of trading occurring and the emergence of new, often difficult-to-explain market behaviors, often seemingly precipitated by automated trading agents. One spectacular example of this is the flash crash of May 6, 2010, in which the Dow Jones Industrial Average dropped 998.5 points, losing 9 percent of its value, which equates to about US\$1 trillion, over the course of about four and a half minutes. It regained the value almost as bewilderingly and as quickly (Borch 2016; see also more generally MacKenzie 2018). Options, particularly standardized publicly traded stock options, are just one of a number of financial instruments that exist in this new market world.

An option is a contract that allows someone to buy or sell a stock at a predetermined price. Let's say you own some Tesla stock. You do a quick search for Tesla's stock price and observe that it is currently trading at \$294.95. While you think this is a great price, you're worried that Elon Musk, Tesla's erratic CEO, may run his company into the ground by using illegal drugs in public, picking more fights with disaffected employees, or manipulating the stock price via illegal public announcements on Twitter (really, take your pick). You could deal with this fear by buying the option to sell your stock (a "put" option) at, say, \$280 over a fixed period of time. You might lose some money on the difference between

\$294 and \$280, but you will lose a lot less than on the difference between \$294 and zero. The opposite type of option, an option to buy a stock at a fixed price, is called a “call” option and works according to the reverse logic. You think that Tesla is going to reach \$1,000 in the next three months; you buy call options at \$500, then sell the difference when the price hits your target. Options contracts extend into the future, often at weekly and monthly intervals for around the first six months, and then taper off to every few months, and then a year or two out.

Options markets, like just about every other publicly traded form of finance, have electrified, anonymized, sped up, and gone mostly automated (e.g., Lewis 2014; MacKenzie and Pardo-Guerra 2014; MacKenzie 2015), though some in-person, open-outcry options pits remain for big and complicated orders. To give some sense of how all this works in practice, a few numbers may help: according to the Options Clearing Company’s website, specifically the Daily Volume Statistics section, on June 3, 2019, there were 19,233,999 equity options contracts traded. On that same day, NASDAQ’s daily volume calculator notes that 8,405,643,454 equities were traded across all US markets. One should keep in mind that the minimum lot size for an options contract is 100 stocks, so this actually represents 1,923,399,900 stock options. So for every option traded, there were about twenty-five shares trading. Given their speculative nature, it’s good to keep in mind that at any given time, many options are not “in the money,” are simply wagers or insurance, and will expire in impotent obscurity.

The interview with Enos was difficult for me. Though Enos was generous with his time and answered just about every question I asked, he did not shy away from the complex, calculus-inflected language of options trading, burying the conversation with Greek letters, spline equations, and volatility curves. As I struggled to keep up, and for all these forthcoming explanations, I was surprised to see the way in which he hedged his own expertise. He felt, despite his experience and knowledge and computer science master’s degree in progress, that he would never quite be all the way in, given the finance’s industry’s contemporary configuration. He simply would never have the skills—his biography precluded this. This came out in our conversation when he talked about, say, his work history:

Firmco, which is probably one of the best future trading firms in the country, and that’s where I interned. So, I started to intern in more of a back-office role, but I was more interested in trading. Futures trading is . . . the people they hire is almost strictly rock star programmers—machine learning and extensive statistical and math backgrounds. So, that wasn’t

really my forte. I was an accounting and finance major with a little bit of computer skills. Options market-making is a little bit less quant [referring to the people who do scientific, mathematical, or “quantitative” analysis in finance] intensive, or it was at the time I was interning in 2009. . . . When I interned there . . . the only people they were hiring were 4.0 [perfect academic record in the United States] master’s students at MIT, Stanford, Harvard, electrical engineering or computer science background.

His reflection on one of his relatives’ job:

My [relative] actually works at Firmco as a trader, but he’s kind of grandfathered in because he’s a finance guy, hired in 2000, before they would hire the smartest people in the world. He kind of got grandfathered in with his skill set. He has a programmer and a quant at his disposal, but they went to Stanford.

His thoughts about the limitations of the language in which he’s learning how to code:

If you’re trying to make real-time decisions, you can’t use Python ’cause it’s slow. Python is so easy to use that it’s slow, so you have to have the people that can build a library in C++ so they can take in real time data and make machine learning decisions. After the [market] close, you use your Python to decide what’s best.

His reflection on the difficulties of his job:

Some of what we do isn’t very difficult to understand, but trying to implement this and you start getting . . . you have to be the fastest . . . it’s a race to zero.

And, finally, his reflection on the limits of his master’s of computer science and his nation of origin:

Yeah, so, I know how to program, but to the level of these PhDs? No, I don’t. It’s interesting. It’s almost like a sport where your interest has to be programming. The guys who are rock stars—so, Firmco doesn’t hire very many national Americans right out of school anymore, because it’s just not a part of their culture. Whether they start programming in Asia at eight, it’s like, if you’re in Russia, in the US you can’t teach kids to do calculus when they’re ten, and if you’re in Russia it’s like, why the hell not? And the same for China. I mean, not to stereotype but it’s a part of their culture. . . . I’m just never going to be there. . . . Look at Renaissance Funds

in Manhattan, eh, they're in Long Island. You read about what they were able to accomplish back in the day with hiring they were the first to hire PhDs. It's like please don't send me any finance majors. Get me PhDs, and those guys make money hand over fist.

Across all of this we see can see an interesting dichotomy. On the one hand, Enos sees himself as a finance guy (elsewhere, he aligns himself with the “front office” and the “risk takers” in the universe of finance), and he has a clear grasp of the nature and structure of the current options and future market-making industry. He also knows who gets hired and why (science people, tech people, machine learning people, etc.—not finance people like him). Elsewhere in the interview, he explained to me how various strategies work, what sorts of consideration you should make when calculating prices of complicated related instruments, and so on. To paraphrase his words, it's not so much that it's difficult for him to understand how markets and trades work, to read their activity and their meaning, it's more his inability to make certain trades in a limited amount of time, or even the opportunity to try. He understands and perceives markets like a financier, but is *not* able to act on that knowledge or perception. Moreover, Enos is indicative of larger trends (some of which I will return to): no more than a vanishingly small portion of equities or derivatives remain traded in person and the largest market making firms and brokerages across all markets are, by necessity technology firms.¹ Where once a “specialist” or a “market maker” was someone who stood in a pit, traded by hand and voice, and offered to buy and sell stock to ensure liquidity, now that person has been replaced by a large, technologically sophisticated, heavily capitalized firm, physically manifested as a number of servers collocated with a financial exchange's “matching engine,” or central server, making trades and positions via an automated logic (e.g., Stafford 2012). Increasingly, the most important people in this universe are technologically savvy. As Enos said of Renaissance Funds: bring me the PhDs; please don't send me any more finance majors.

This disjuncture is where I want to dwell a while. Anthropology has a splendid trove of semiotically inflected theories to account for the nature of Enos's perception and understanding of markets. However, I will suggest that these theories in their current articulation are unable to account for the distance between Enos's ideological posture toward markets and his inability to be a fully competent market participant. Key to these theories is a concept called “semiotic

1. In-person trading still exists at the New York Stock Exchange (NYSE) as well as at some options exchanges in order to handle things like the closing auction of the NYSE or complicated, multipart options orders. However, the vast majority of trading is electronic.

ideology” (Keane 2003, 2007, 2018), which is meant to stand for the way a group of people evaluate the importance of perceptual affordances in the process of semiosis. Put another way, semiotic ideology is meant to describe what perceptual details groups find important or irrelevant when they decide what their world means. An old chair might be art to the curators at the Danish design museum, and it may be trash to Copenhagen’s sanitation workers. Each community is picking up on different qualities from the same object, thereby exercising a different semiotic ideology. These theories often presume (1) that shifting from one semiotic ideology to another is a matter of choice and (2) that people have the skills necessary to act on the presumptions that a new semiotic ideology entails. Quite often, both of these assumptions do not in fact obtain.

This limitation, though, is productive. The boundaries of these theories of semiotic ideologies help articulate one of the minor tragedies of structural changes in a capitalist economy. When industries go away or change dramatically, such as in Enos’s case, many individuals who are well along in their lives will simply never be able to be full participants in whatever direction industry goes, even if their semiotic ideology shifts accordingly. They see across the Jordan, but never make it to the promised land. A bit more on semiotic ideology is in order.

Semiotic Ideologies and Markets

Before I explain how I understand these semiotically inflected theories of culture and their limitations, though, I should explain why I’m talking about them in the first place. After all, anthropology has numerous theories of culture and meaning that could plausibly account Enos’s social milieu (e.g., culture as semiotic web in Geertz [1973] or culture as community of practice in Lave and Wenger [1991]), and it is perhaps not immediately clear why linguistic anthropology’s preoccupation with pragmatics and indexicality should carry the day. So, first into the garden of cultural theoretical variety, then out the other end with a decent basket of signs.

Michel-Rolph Trouillot, in an essay otherwise concerned with abandoning the culture concept, offers up a succinct explanation of the essential kernel of theories of culture within North American anthropology.² He says:

2. I realize the irony in using a definition of culture from an essay otherwise committed to abandoning the culture concept. While I don’t have time to thoroughly engage with Trouillot’s argument, I think his contention that the application of the culture concept within North American anthropology often functions as an anticoncept and is antithetical to race, and knowledge about racial formation is generally accurate. I don’t think this necessarily has to be the case though (e.g., Gravlee 2008). It seems to me that even when anthropology abandons explicit use of the culture concept, it leaps back into the breach with various theoretical formations

1. Human behavior is patterned. There exist within historically specific populations recurrences in both thought and behavior that are not contingent but structurally conditioned and that are, in turn, structuring.
2. Those patterns are learned. Recurrences cannot be tied to a natural world within or outside the human body, but rather to constant interaction within specific populations. Structuration occurs through social transmission and symbolic coding with some degree of human consciousness. (2003, 99)

Within humanistic anthropology, the form that culture takes, the learned, structuring patterns in human behavior, has more or less been operating within a semiotic or interpretive paradigm that began to coalesce around the time that Geertz published *The Interpretation of Cultures* (1973) and argued that culture is basically concerned with understanding the webs of significance that humans both weave and get stuck in (Peacock 1981). It has often taken other forms—substituting, with a bit of nuance or qualification, say, ontology and comparative descriptions of what groups of people think is real (Holbraad and Pedersen 2017), habitus and the preconscious accretions to common sense that come about due to the social circumstances of one's life (Bourdieu 1977), or epistemes and the enveloping miasma of common sense that might characterize an epoch of historical time (Foucault 1970)—for the sort of generalization that Trouillot ascribes to the kernel of the culture concept. All of these offer an account of patterns in social life and gesture in some way or another toward how people come to be who they are.

In the wide stream of anthropological theories of culture, though, there is one that I find particularly useful to describe the work of financiers and that emerges from linguistic anthropology as inflected by Peircean semiotics (Parmentier 1994). Briefly, Peircean semiotics is concerned with the threefold relationship between objects, signs, and interpretants. Objects of whatever sort exist in the world but are never directly accessible to people (or, really, anything else that perceives in some way); they're always mediated by a sign. The sign, in turn, makes sense only if an interpretant is able to recognize a sign as a sign. Peirce's semiotics allows for a descriptive vocabulary of how a sign relates to its object

that do equivalent work (ontology, mode of production, episteme, community of practice, semiotic ideology) and become "culture-adjacent," or "culture-substituting," or "culture-equivalent" concepts. Given that anthropologists find culture or some culture-adjacent concept necessary to describe groups of people, I don't actually think we can abandon culture and still do ethnographic work. For me, then, it comes down to a kind of intellectual honesty, to explain what sort of definition of culture I'm using and why, and then a kind of intellectual integrity to fight bad, reductive, race-occluding articulations of culture. What's the point of anthropology if not that?

and how an interpretant perceives a sign. In turn, this sort of metaphysical conception of meaning making has proved enormously generative within linguistic anthropology, allowing linguistic anthropologists to develop both a rigorous and cross-culturally consistent descriptive vocabulary for the mechanics of semiosis and, crucially, robust models of change in culture life. First, the descriptive model.

Peirce's semiotics is shot through with an obsessive, metaphysical focus on relations of threes, or trichotomies (*CP* 1.3, 2.227–307; see also Atkin 2013).³ Underlying it all was an idea that some “first” irretrievably becomes some “second” as a consequence of a movement typified by a “third.” An object is reflected in a sign and is mediated and interpreted according to an interpretant. Similarly, within the triadic semiotic relationship, each leg of the triangle has its own triad. The most famous is the “ground” relationships between a sign and its object. Iconic signs resemble their object (as in a map); indexical signs point toward their object (as in smoke from a fire); symbolic signs gain meaning through common convention (as in the word *dog*). This sort of tiering is replicated across other legs of the semiotic triangle. In the process of signs constituting objects, qualisigns take their meaning due to qualities of the object; sinsigns rely on facts about the object; and legisigns take their relation from conventional association. In turn, in the process of interpretants making sense of signs, rhemes are signs that draw an interpretant to qualities of the sign; dicents are signs that pull the interpretant on some feature around the sign; arguments are signs that draw the interpretant to convention. The middle tier of all these semiotic triads, some form of indexicality has been particularly useful to linguistic anthropological definitions of culture.

Indexicality is particularly cherished because it draws our attention to a specific community or context. Michael Silverstein (2004) has observed that indexicality grounds language in a historically specific pragmatics: “words and expressions come specifically and differentially to ‘stand for,’ or *denote*, things and states of affairs in the experienced” (622). Therefore, language can never truly be universal, utopian, or context free. Put another way, language inevitably bears in its utterances indices to the specific histories and context of the people that speak a language. It should follow, too, that these sorts of observation about linguistic semiosis should apply to other forms of semiosis as well (ritual, bodily proxemics, visual art, etc.) Related to this observation about linguistic indexicality, is the observation that language is capable of metapragmatics, that is, utterances that index language itself and thereby reflect on its own use (Silverstein

3. “For my part, I am a determined foe of not innocent number; I respect and esteem them all in their several ways; but I am forced to confess to a leaning to the number Three in philosophy” (*CP* 1.355).

1976; Lucy 1993). So, insofar as an anthropologist adopts a Peircean, semiotic, and linguistic operationalization of culture, all that learned and patterned meaning that seems to characterize all humans everywhere, a concern with indexical signs becomes a key component of linguistic analysis.

As we might expect, then, there has been useful work on the process by which rhematic signs become dicent signs (Ball 2014), and dicent signs become rhematic signs (Gal 2005, 2013) (i.e., why certain interpretant communities shift to seeing signs as based on indices or based on qualities: Does the eucharist, though not actually divine, look like God? Or does it actually point to a divine presence?). Standing behind all of this, whatever moves signs make, is the interpretant community, whose judgment is required to register the sign as quality-bound, indexical, or due simply to convention. The best theorization of this interpretant community that I've found comes with Webb Keane's notion of a "semiotic ideology" (2003, 2007, 2018).

In developing a "semiotic ideology" Keane wants to theorize how groups of people come to understand signs differently in order to account for cultural (or at least semiotic interpretive) diversity. Given the power of the concept, it's worth quoting one of his definitions at length:

So what is semiotic ideology? Put simply, the concept refers to people's underlying assumptions about what signs are, what functions signs do or do not serve, and what consequences they might or might not produce. . . . Going beyond language, even as most broadly defined, semiotic ideology directs attention to the full range of possible sign vehicles and the sensory modalities they might engage, including sound, smell, touch, muscular movement, pain, affect, and other somatic phenomena. Whereas some semiotic ideologies take the form of explicit formulations, others remain tacit presuppositions of sign use—these various modalities of explicitness are themselves functions of particular historical circumstances. The local assumptions denoted by the term are often so unexceptional as to elude ethnographic notice. . . . But differences among semiotic ideologies can also be so striking for they suggest quite dramatic contrasts between possible world views. For instance, it is a matter of semiotic ideology whether signs are taken to be interpretable because their relation to the world is arbitrary, or logical, or natural, or divinely ordained. Nor does it concern interpretation alone: the stakes may include whether manipulating a sign has effects on its object, whether politically (as in flag burning), legally (as in draft card burning), or in some more material sense (as in damaging a figurine in

order to harm a person). Among other things, it determines what may or may not count as evidence of a subject's intentions. Semiotic ideology therefore links the ways people make sense of their experience to their fundamental presuppositions about what kinds of beings animate the world (spirits? witches? gods? or, as in the case of indigenous Australia, geological formations?). (2018, 65–66)

For Keane, then, semiotic ideologies take account of the raw affordances of signs in the world and then go some distance toward legislating and interpreting their meaning. The world is out there, perhaps inert, and communities with semiotic ideologies sort things out. For Keane, the semiotic ideology becomes a sort of cultural replacement theory of what typifies a group of people, a theory that integrates with various semiotic theories from linguistic anthropology that are inflected with descriptive language and assumptions from Perician semiotics.

Now, the question might occur to the attentive reader, what on earth does all this semiotic stuff have to do with Enos and his programming abilities, options market making, and electrified financial exchanges? I'd suggest it all has to do with how you understand what exactly a market is and how exactly a market-making options trader like Enos relates to it.

As noted above, an option is the possibility to buy or sell some amount of stock at some price, over some period of future time. Options are essential to the operation of contemporary finance. Among other things, they allow people to prepare for potential mergers or spin-offs of companies and to short-sell stocks, and they allow portfolio managers to hedge risks in their portfolios. They also don't just exist for single stocks; they also exist for baskets of stocks traded as electronically traded funds (ETFs) or broad stock indices like the S&P 500. Most any traded instrument has some form of option associated with it. This relation also suggests the complexity of options trading. If just about any traded instrument has an option associated with it, the universe of things that options correlate with are correspondingly large.

Beyond these simple correlations, we should further note that every option has a calendar associated with it. For example, as I write in February 2019, Nasdaq lists Tesla options that have three strike, or expiration, days in March 2019, two in April 2019, one in May 2019, one in June 2019, one in July 2019, one in August 2019, one in September 2019, one in January 2020, one in June 2020, and one in January 2021—for a total of thirteen strike days for the same stock over a period of two years. Perhaps, most important of all, options, since at least the mid-1980s have been priced according to an equation drawn from physics,

the Black-Scholes-Merton equation, which affords traders a standardized way of analyzing and pricing options (MacKenzie 2008, 119–43). So not only does the price of a given option relate to that of the underlying stock, but each option expiration hangs on the other, moving in tandem with the calculation and recalculation of volatility and price of a given option according to some derivation of the Black-Scholes-Merton equation.

Reflecting this sort of ongoing integration of market prices and recalculation, Benjamin Lee (2018) offers a semiotically inflected take on markets and market participants, which he deliberately sets in contrast to more conventional performative theories of markets and market actors (e.g., Callon 1998):

The insertion of the market price of an option moves the model to the indexical real time of trading, what is known in finance as “calibration.” It’s at this point that the formal semantics of Black-Scholes meets its pragmatic counterpart and Black-Scholes begins to take on a semiotic form. The equation is like the formal part of a grammar that contains an indexical component (the insertion of the market price of the option) that constantly calibrates itself to the moment of speaking; when combined with a property of Black-Scholes known as “dynamic replication,” this has the effect of making Black-Scholes into a discourse-indexical “grammar” in which each successive price is linked to its predecessor. (Lee 2018, 233)

Lee sees the way in which markets generate prices as offering a kind of semiotic affordance that is in turn used indexically in options pricing equations. It’s not just that people perform given markets. Rather, they are in a reciprocal relationship with markets in which they see indices of things like price changes and then incorporate those indices into the prices they in turn offer on markets (see also Muniesa [2007] and Swedberg [2011] for instances of Peircean analysis in the social analysis of economic phenomena). Enos gives a sense of how this came into finance:

The Black Scholes model was originally developed to model Brownian [motion] and random particle motion [in physics]. But [market participants] realized in the eighties . . . that it was beneficial for options [pricing]. . . . [Even though] people back then [didn’t] have the slightest understanding of math, but [they] made a killing, cause no one had any concept of [option pricing] value.

In turn, much of Enos’s conversation about specific trades and strategies is peppered with “the greeks” or the various variables of the Black Scholes equation.

He thinks in terms of Black Scholes, in terms of “hedging deltas” and “owning gamma.” Moreover, he takes active market data plugs it into his own modification of the Black Scholes equation for options pricing, and then acts in the market based on those calculations. Going back a moment to Keane’s articulation of semiotic ideology, a certain ideology toward signs and their interpretations leads people like Enos to recognize certain features of financial markets as indexical of price determinations, and then make use of those indices in certain options pricing equations. Enos explains this sort of reactive pricing when he tells me about real time price adjustments that firm algorithms do every time prices move. When a trading position changes,

you have a correlation metric essentially and everything that’s related to that option is shifted so that you can try and make an opposite trade but it becomes a really tricky question about how to do it. So, for SPX [an option based on the Standard and Poor’s index of 500 stocks] there’s sixty expirations—there is Monday and then Wednesday and then Friday and then the next week is Monday Wednesday and Friday and after that is Friday and Friday and then all the months. So it becomes a really tricky question of how do you create algorithms that interpret all this data, ’cause there’s constantly new trades that you’re processing. You’re getting order updates and you’re like, oh by the way we just bought a hundred of these.

When asked about how to accomplish this, Enos explained:

Well, that’s the tricky part. You have to see, you have to first look and say the first thing is this trade coverable right away? How much edge [profit or trading advantage] should I get for it? Is this tend or is this actual retail order flow? So, it really becomes understanding the understructure of the market and the very front of the curve. The nearest expiry auctions, the people who trade those the best operate in similar fashion to futures trading firms because the value of the option is so contingent upon the value of the underlying that the people with the best infrastructure and with the fastest can interpret the microstructure, those are the people who make money in the very front.

Enos is aware of the various market affordances that a good trader should see as indexical. He understands the way in which one would model price and then build an algorithmic infrastructure that could both calculate price and correlated price adjustments across a calendar of options, evaluating the nature

of orders coming through. He understands all of this, he interprets signs with the best of them, but, crucially, he *cannot* do what he describes, nor will others let him attempt it. He cannot act on the indexical signs he perceives and then trade with them. The industry has left Enos behind.

In a peculiar way, Keane's theory of semiotic ideology, as powerful as it is, can't quite account for Enos—he knows how trades work, he knows the math, he can program, and yet he, in his own estimation at least, will never be able to participate on the same level in markets as his coding prodigy Russian and Chinese colleagues. He has bought into the semiotic ideology but can't fully participate in the world that this semiotic ideology should open up—due both to his own skills and to the way others perceive his potential and the opportunities they give him based on that.

We might object, at this point, that there are lots of other instances in social life when people can understand a semiotic ideology, interpret signs in the locally correct way but can't act. We could imagine fans of professional soccer who are able to follow a match, explain the nuances of offsides calls, and know all the supporter songs but who stand no chance of playing successfully in a professional soccer match. They get the ideology but can't play with the pros. Fair enough. What I'm describing, though, is something slightly different: not so much the spectator, as the athlete, the person making the core of the social drama. Moreover, I'm specifically describing someone who at one time could participate in the social drama but, crucially, no longer can. That is, what happens to a participant when the semiotic ground shifts under them?

Imagine that same soccer match, but shift to a player on the field. Imagine for a moment that FIFA—the International Federation of Association Football, soccer's international governing body—unilaterally decided to allow tackling in soccer matches. That same soccer player would likely have trouble playing against the sudden influx of professional rugby players who have decided to spend a season or two in the premier league. It doesn't really matter how well the soccer player understands soccer, rugby, or tackling. They can't go back in time and become tackling athletes, and most won't be able to acquit themselves to the new professional standards they find themselves in. This is how I see Enos. Were we to send him thirty years back in time to be an options market maker, the same job we talked about in our interview, he would have acquitted himself to the trading pits just fine. Now, however, he is encountering insurmountable life-history and skill-based obstacles. To flesh this out, though, we should hear a bit more from Keane regarding what it means to have a certain semiotic ideology.

Tricky Questions and the Limits of Semiotic Ideology

Keane (2007) gives the fullest treatment of what a semiotic ideology is and how various semiotic ideologies interact in *Christian Modern: Freedom and Fetish in the Mission Encounter*. His subject is a series of encounters and interactions between Dutch Calvinists, Indonesian Calvinists, and ancestral devotees, all on the island of Sumba in Indonesia. He is curious to investigate specifically how Dutch Calvinist missionaries brought with them a purifying, modern sense of what Christianity and progress meant, entailed in a purifying semiotic ideology that sought to discount, discredit, and displace Catholic-looking forms of social life: things like sacrifice and ancestor veneration. For their strain of Christianity, and their view of history's teleology, there needs to be a shedding of surface forms and appearances and cultivating of pure, redeemed, saved intentions. Thoughts and inner life matter in ways that things like sacrifice or dancing would not. All this, in turn, is mediated through speech acts perceived as sincere. Keane, uses this 100-year-and-running encounter to talk about the protestant origins of a particularly "modern" semiotic ideology that impossibly seeks to purify the world, to strip away outward appearances and get at the sincere truth of human belief and intention. He describes this specific semiotic ideology as follows: "The focus on propositions is part of a larger semiotic ideology, the belief that language functions primarily (and properly) to refer to or denote objects in a world that lies apart from it, in order to communicate ideas that lie within one person to another listener or reader" (2007, 68). In Keane's telling, transitioning to a Dutch Calvinist semiotic ideology often means adopting some speech act or abandoning some other ritual practice as one indicates the relations one feels that words, thoughts, actions, and perhaps salvation have to one another, all according to some relatively easily grasped first principles.

To Keane's credit, much of the thrust of his book is dedicated to showing the impossibility of any sort of final semiotic conversion premised on purification. Modernism is always a failure, and following Latour, we never quite get there. Language and other semiotic grammars, because they bear the qualitative and indexical history of the people they come from, can never be purified of earthly entailments. Speech can never be completely pure, sincere, and unique to the speaker. All this comes to a head in Keane's chapter 5, in which he describes a series of speeches that accompany a Christian conversion in Sumba. In 1986, a man he calls Umbu Neka, an old ritual specialist, planned to convert to Christianity (2007, 163). However, he does so in a mixed oratory, a conversion register that draws on local ancestral linguistic tropes, as well as a vision of history inflected

by Indonesian nationalist modernism. Altogether, Keane notes that “Umbu Neka’s . . . performance made an explicit claim about difference (I have entered a new religion) and an implicit one about continuity (The Language of the ancestors is still a viable medium for the assertion of authority)” (174).

Within the world of Calvinist Indonesia, and perhaps Protestant Modernism more generally, Keane illustrates the impossibility of purifying projects, the impossibility of the triumph of a semiotic ideology based on purification. That said, I’m not so much interested in this vision of modernism and its spread, as I am interested in how someone adopts a semiotic ideology in Keane’s and others’ telling. Regardless of whether it is ultimately possible to triumph as a purifying Dutch protestant carrying a specific and internally contradictory semiotic ideology, to adopt a given semiotic ideology seems to require nothing more than a shift in belief and a set of speech acts. Conversion, in the Protestant sense of things, is voluntary. And once you voluntarily convert, you’re in the semiotic ideological community and are capable of acting as a member should. This voluntarism that leads to membership and this membership that entails mastery are my concern.

Jon Bialecki (2014) enunciates part of the point I’m driving at in “Does God Exist in Methodological Atheism?” He observes: “These metasemiotic operations, which have different outcomes depending on the candidates for being either vehicles for, or a means of, semiosis. It is not that the materiality does not matter—Keane is very careful to attend to how the specific capacities of different forms of material are taken advantage of in semiosis—but attention to the material aspect of mediation does not put subject and media on equal footing . . . these objects are effectively passive entities that are colored by the action of human subjects” (37–38). Humans opt into an ideology then act on semiotic affordances in the world.⁴ However, Enos demonstrates the limitations of this. For, as we saw above, Enos is a convert, but he can’t be a market participant in good standing for concerns beyond the scope of his semiotic ideology—the contours of specific structural changes to his industry and its internal labor market. This sort of limitation, I suggest, is not reflected in most uses of semiotic

4. For further examples of work in which the researcher deploys an opt in/opt out notion of semiotic ideology, see Abercrombie (2016), Osterbaan (2017), and Berman (2018). That said, there are other researchers who simply use semiotic ideology in a descriptive, culture-replacement sort of way and don’t offer much commentary on toggling between various semiotic ideologies. For a few examples, see Wilf (2011), Tracy (2013), and Friedner (2018).

ideology. Moreover, I suggest that identification of instances of this limitation will point toward the wreckage of social upheaval or rapid societal change.

Life on the Outside

Enos's situation, caught between shifts in the financial world and an inability to fit his biography to them, was not uncommon. I've heard similar sorts of stories from other former traders and have seen former pit traders hire teams of more computer-savvy folks to work for them to design systems that they never could. I've also seen traders argue with quants and programmers across this very divide. Caitlin Zaloom (2006) pointed out that one of the effects of computerization in trading, particularly in London, was that non-university-educated individuals could no longer find a place among computerized stock trading. The same shift happened in Chicago: in the documentary *Floored* (Smith 2009) one can easily see former pit traders' resentment of the new computerized trading systems in Chicago that put many of them out of a job. All told, this is the capsule story of an industry in transition.

We see echoes of Enos's biography when we start looking a bit further afield too. Linguistic anthropologists have observed, more generally, that the process by which someone becomes an adult or a full member of a particular community is the result of complicated processes of socialization in which a person, in an ongoing way, needs to fit into an environment that, in turn, plays an active role in shaping an individual (e.g., Smith 2016; see also Kulick and Schieffelin 2006). Key to this process is the way that an individual accumulates assumptions about what is normal and necessary and, in turn, how people read one another. Abrupt shifts in the environmental or social ground that a person has to operate in can lead to calamitous disjuncture in which things don't make sense or people no longer have a place (see Ochs et al. [2005, 573] on "hysteresis").

Enos is pretty lucky in that he works in finance, has money, and can find a middle interstitial place. He may even end up managing quants and programmers like his relative. Many people that fully understand the nature of the transition facing them can do no such things. Dudley's (1994) account of unemployed autoworkers gets at precisely this sort of despair. When their factory work goes away, so does the context for their lives. Even if they understand the economics of their unemployment, and what would be necessary to retrain for another job, many of them become despondent, victims of a system demanding changes that—even if there were new jobs (which is often not the case)—ultimately defy their capacity for reinvention. They might understand that pro-business interests on Kenosha, Wisconsin's city council are redeveloping the

town and breaking the union, but they won't or can't find a place in that world. They're too old or too blue collar.

I suggest that observations such as Dudley's say that there is a limit to the ability of someone to voluntarily opt into a particular semiotic ideology and then function based on the identity that this same semiotic ideology may afford in a given social context. In the context of rapid social change, as in componential changes to a capitalist economy, people are often structurally precluded from adopting new social opportunities. They can't be born again, and, as we all do, only get to live their lives once, and in one direction to boot. While Keane's observation "that religious conversion can involve the introduction of a new semiotic ideology that transforms the conceptual and practical relations among words, things, and persons" (2007, 177) may circumstantially apply to some particularly inwardly directed Protestants, it generally doesn't seem to work when the dominant semiotic ideology has decided that something indexical in your background represents *prima facie* disqualification from social good standing and an opportunity for a livelihood. Perhaps, as useful as semiotic ideologies are descriptively, we may say that anytime we find someone with the right semiotic ideology but still not fitting in, it would do well to have a larger theory of life courses, processes of socialization, and the structures of power that validate, discredit, or create possibilities for individual people.

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