The Non-Evolutionary and Non-Benign Character of Stylized Facts

Jacob Powell
Hobart and William Smith Colleges

Abstract: This paper highlights the potentiality of stylized facts to take on a non-evolutionary and non-benign character. This paper will explicate methodological problems with stylized facts, demonstrating their potentiality to take on a non-evolutionary and non-benign character. Two stylized facts will be used as the primary examples through the paper: the inverse trade off between changes in unemployment and changes in price level (i.e. the Phillips curve) and that countries with debt-to-GDP ratios in excess of 90 percent with have lower levels of growth. The insights of Pierre Bourdieu will be drawn upon to understand the socialization processes which create common sense understandings of our world that are non-evolutionary and non-benign, what Bourdieu calls doxic understandings. Doxic understandings of the world are inherently ceremonial and antithetical to an evolutionary approach. To overcome these problems does not mean the elimination of heuristics; but rather, a continual application of reflexivity. Reflexivity is an ongoing process, where the researcher is continually interrogating what is being taken for granted in their own methods and logic, to ensure these are grounded in instrumental reasoning. Reflexivity is necessary to safeguard economics and the public against doxic understandings, and is a necessary condition of realism in analysis.

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Introduction

While becoming economists we are socialized into understandings of our object of study. Stylized facts, empirical "regularities," that are taken as given, are one of the first bits we internalize. Once we know the stylized facts, they can be taken for granted and more complex understandings can be erected on them. The way in which stylized facts are created and deployed influences whether they take on a non-evolutionary and non-benign character.

Two stylized facts will be used as examples throughout this paper: (1) the inverse trade-off between changes in unemployment and price level (the Phillips curve); (2) that countries with debt-to-GDP ratios in excess of 90 percent experience lower economic growth. Each of these in

turn will be used to show how stylized facts can take on a non-evolutionary and non-benign nature, especially when these stylized facts begin to present as common sense understanding of our world. If this "common sense" is not being continually updated through inductive methods, then ceremonial knowledge is animating policy decisions. This is when stylized facts take on a non-benign character, directly affecting peoples' lives.

This paper will explicate the methodological problems inherent in stylized facts, demonstrating their non-evolutionary character. The insights of Pierre Bourdieu will be drawn upon to understand the socialization processes which create common sense understandings of our world that are non-benign, what Bourdieu calls doxic understandings. Examples of stylized facts will be invoked to demonstrate their doxic character. Doxic understandings of the world are inherently ceremonial and antithetical to an evolutionary approach. To overcome these problems, does not mean the elimination of heuristics from how we understand the economy, this is impossible; but rather, a continual application of reflexivity, another theme of Bourdieu's work. Reflexivity is an ongoing process, where the researcher is continually interrogating what is being taken for granted in their own methods and logic, to ensure these are grounded in instrumental reasoning. Reflexivity is the first step in safe guarding economics and the public against doxic understandings, and is a necessary condition of realism in analysis.

The paper is organized as follows. Section one will discuss stylized facts: what are they, their origins, role within the literature, and what other scholars have pointed out in regards to them. Section two will draw on two examples of stylized fact to demonstrate how stylized facts have a potential to take on a non-evolutionary character. Section three with discuss the performative nature of stylized facts and how they can take on a non-benign character, specifically using the two examples discussed above. The paper will conclude with a discussion

of ways in which researchers can best utilize stylized facts in analysis and through reflexivity mitigate against stylized facts taking on a non-evolutionary and non-benign character.

What are Stylized Facts?

Stylized facts are some of the early analytical tools encountered in our graduate macroeconomic textbooks, typically the stylized facts of the business cycle are the first (e.g., unemployment is countercyclical, inflation is procyclical, consumption is procyclical, etc.)[1]. Deployment of stylized facts are found throughout the economic literature, in discussions of growth, business cycles, development, financial economics and other fields (Abad & Khalifia 2014). The term "stylized facts" was first introduced by Kaldor (1961, 178), stating:

> Since facts, as recorded by statisticians, are always subject to numerous snags and qualification, and for that reason are incapable of being accurately summarized, the theorist, in my view, should be free to start off with a 'stylized' view of the facts—i.e. concentrate on broad tendencies, ignoring individual detail, and proceed on the 'as if' method, i.e. construct a hypothesis that could account for these 'stylized' facts, without necessarily committing himself on the historical accuracy, or sufficiency, of the facts or tendencies thus summarized.

In other words, stylized facts themselves, are, "simple empirical regularities or tendencies in need of explanation" (Hirschman 2016, 606). There is nothing inherently "good" or "bad" about stylized facts, as they can act as entry points of analysis.

Lawson lays out the usefulness of stylized facts in economic inquiry, while following realist[2] principles of inquiry, specifically advocating the method of retroduction, "…the mode of inference from manifest phenomenon to possible causes—represents an attempt to identify the real, if abstracted, structure or set of structures that actually governs the phenomenon in question" (1989, 69). Three stages of inquiry are identified, "…The first involves the identification of some empirical phenomenon of interest, the second involves the construction of

a ‘model’ or ‘explanation’ which entails (at least ‘part’ of) the empirical phenomenon in question…and the third stage of the analysis entails subjecting the entities postulated at the ‘modeling’ or ‘explanatory’ stage to further/continuous scrutiny” (Lawson 1989, 61). Stylized facts can be useful tools, in the first stage of inquiry, specifically by using abstraction to better identify the underlying structures animating phenomena, rather than abstracting away from them (Lawson 1989, 73).

However, stylized facts can take on a non-evolutionary and non-benign character depending on their deployment, specifically, not following the conditions laid out by Lawson (1989). The use of stylized facts in the literature is vast, yet little of the literature has been devoted directly to interrogating stylized facts as an analytical tool (with the exception of Abad & Khalifa 2005; Hirschman 2016; Lawson 1989). This paper adds to this literature by identifying two stylized facts and how through their investigation and deployment, a non-evolutionary and non-benign character emerges. The two stylized facts are the inverse relationship between change in unemployment rate and change in inflation, i.e., the trade-off between inflation and unemployment[3], and that nations with debt-to-GDP rations in excess of 90 percent experience lower GDP Growth[4].

The Non-Evolutionary Character of Stylized Facts

A hallmark of institutional analysis is the commitment to an evolutionary approach to social science, specifically economics, at both an ontological and epistemological level. Ontologically, this takes the form of a non-teleological view of history and the instinct-habit framework for understanding human, and epistemologically, the commitment to understand processes of cumulative causation generating economic phenomena, understanding that know process is time invariant. Veblen (1898) laid out these principles while arguing that economics

has yet to become an evolutionary science, this is still the case evidenced by the non-evolutionary and non-benign character of the stylized fact below.

Stylized facts are not by their *nature* non-evolutionary and non-benign[5]. As Veblen pointed out what separates an evolutionary approach to economics as opposed to a non-evolutionary approach is not the use of facts, nor in the attempt to explain the process that generates these facts, rather the habits of thought animating these approaches (1898, 375-277). To become an evolutionary science requires a shift in the foundation of habits of thought from a Newtonian origin to a Darwinian origin (Veblen 1898, 381). Habits of thought are not inert, however, time is needed for change to occur. We are not there yet. The deployment of the stylized facts, animated by a non-evolutionary approach to economics leads these "facts" to take on a non-evolutionary and non-benign character. This section will analyze each stylized fact to demonstrate their non-evolutionary character, the following section will address their non-benign character.

Stylized Fact #1: There is a trade-off between unemployment and inflation

The inverse trade-off between changes in unemployment and price-level has its origins in Phillips (1958), doing inductive empirical work, discovering an inverse correlation between unemployment and nominal wages in England from 1861-1957. The more modern Phillips curve, the trade-off between unemployment and price level, originates from the work of Phelps (1967; 1968) and Friedman (1968). In their work, the Phillips curve is no longer a relation between unemployment and nominal wages, but rather a relationship between changes in price level an unemployment; furthermore, their treatment of this relationship took a more spatial and time invariant nature. Specially, Friedman (1968) argued that trade-offs between unemployment and inflation can happen in the short-run (inverse Phillips curve) but in the long-run there is no

trade-off (vertical Phillips curve), identifying the now famous (or infamous) non-accelerating inflation rate of unemployment (NAIRU). The NAIRU has become the foundations for the natural rate of unemployment hypothesis, a fictional level of unemployment at which inflation is not accelerating.

The non-evolutionary nature of the Phillips curve lies in its co-opting by Friedman and Phelps: taking of an empirical relationship, or stylized fact, discovered by Phillips (1958) through inductive methods, and assuming a relationship between unemployment and inflation, upon which to build economic models. Generations of economists have followed in this tradition further reifying the Phillips curve as an assumed inverse trade-off. Galbraith points out that in lieu of a theory of inflation, the assumed Phillips curve is one of the pillars of the IS curve in the IS-LM model, further point out that, "James Tobin once elegantly described the Phillips curve as a set of empirical observations in search of theory" (1997, 94).

Thus, the non-evolutionary character of the Phillips curve is two-fold: (1) it has moved from an empirical regularity discovered through inductive methods in a specific time and place, to a time and spatial invariant assumption to be incorporated into deductive models; (2) there is no theory of process or cumulative causation which generates such outcomes. The non-evolutionary character has been reified further in the economic literature, building on this early work. The inverse relationship between changes in unemployment and inflation broke down in the US in the 1970s (Shaikh 2013), yet we see year after a larger number of models being specified and re-specified to provide evidence of the Phillips curve. The question in the literature is rarely, has this empirical relationship broken down, but rather one of model misspecification, leading an effort in rote to discover the assumed Phillips curve[6].

Furthermore, there is no effort toward discovering a theory of the processes of cumulative causation that leads to or once led to the inverse relationship, but rather the invention of a theoretical fiction: the natural rate of unemployment. The natural rate of unemployment, needs no realist explanation of the structures generating economic phenomena, rather if inflation does not occur it must be that are estimates of the natural rate were off and should be lower, and vice-versa (Kelton 2020, 51). The natural rate is the antithesis of how abstraction should be used in economic analysis, rather than using abstraction to better understand the economic structures generating the phenomenon of interest, rather abstraction is used to veil generating structures.

Stylized Fact #2: Nations with Debt-to-GDP Ratios in Excess of 90 percent Experience Lower GDP Growth

The now infamous work of Reinhart and Rogoff (2009; 2010) is the origins of the stylized fact: nations with debt-to-GDP rations in excess of 90 percent experience lower GDP growth. Doing empirical work, drawing on a constructed data set of 44 countries spanning 200 years, Reinhart and Rogoff (R&R) conclude, "Our empirical research on the history of financial crises and the relationship between growth and public liabilities supports the view that current debt trajectories are a risk to long-term growth and stability, with many advanced economics already reaching or exceeding the important maker of 90 percent of GDP" (2010, 577). During the time of writing these conclusions the US had just suffered the worst recession since the Great Depression and the Global Financial Crisis was in full swing, leading government debt burdens to rise as the result of automatic stabilizers. R&R's conclusions questioned the impacts of rising debt on economic growth, ultimately advocating austerity (more below).

The non-evolutionary character of the R&R's stylized fact results from the broadness of the data upon which these empirical relationships are discovered. Lawson points out stylized

facts can take on a problematic character when not recognizing, "…much of what is essential to the explaining of a form of human activity is highly context-related. Thus, through a process seeking merely wide generalisations, economic structures can easily be emptied of their context-related, but often essential content" (1989, 72). In other words, the problem with R&R's stylized fact is it obscures the institutional processes which generate the phenomenon, rather than helping to elucidate the structures animating the phenomena.

Specifically, Nersisyan and Wray (2010), explicate the problems with R&R's approach; mistaking correlation for causation and not accounting for institutional differences, which are key factors in determining the sustainability of debt by countries and the potential negative impacts of debt within countries. R&R use Barro's (1989) concept of Ricardian Equivalence as their theoretical underpinning: as people see debt-to-GDP rations increasing, they foresee future increases in taxes and spend less today, leading to lower economic growth. However, Nersisyan and Wray point out an alternative explication: as economies enter periods of economic crisis, debt-to-GDP ratios increase as automatic stabilizers kick in, leading to higher debt-to-GDP ratios around the time of low economic growth, which is the result of the economic contraction, rather than higher debt-to-GDP ratios (2010, 11).

Furthermore, R&R do not account for the institutional context, in arriving at their conclusions. Modern Monetary Theory, investigating monetary systems through institutional analysis, demonstrates that different currency regimes face different institutional constraints with regard to government debt and its potential implications for the economy (Nersisyan & Wray 2010, 12-18). Specifically, countries with sovereign currency status, those whose debt is denominated in their own currency and have a floating exchange rate (e.g. US) face different constraints than countries without a sovereign currency (e.g. Greece) (Nersusyan & Wray 2010,

12-18). The nuances regarding the institutional difference and effects of sovereign and non-sovereign currency issuers is beyond the scope of this paper, the point is the institutional context needed to interpret this stylized fact are ignored while executing their empirical work as well as reaching conclusions regarding policy choices and impacts.

The two stylized facts analyzed above take on a non-evolutionary character in there deployment. The Phillips curve, once discover through inductive methods, has taken on a deductive character, an assumed relationship to build economic models upon and to inform economic policy, with little regard for the mechanisms animating this empirical phenomena besides a theoretical fiction that is the natural rate of unemployment. R&R's stylized fact regarding debt-to-GDP ratios and growth is non-evolutionary insofar as reaching their conclusions and developing policy implications, little attempt is made to understand the institutional context generating their findings. Rather they rely on another theoretical fiction, Barro's concept of Ricardian Equivalents, to rationalize their policy implications. Both stylized facts have been used to justify economic policy, leading these stylized facts to take on a non-benign character.

The Non-Benign Character of Stylized Facts

Economics is a social science. One of the unique characteristics of social sciences is that we are a part of the object we are studying, whether it be society or the economy, etc. This creates a problem, not faced by the natural sciences (e.g., gravity will act a certain way irrespective of our observations and conclusions), "…economics is at work within economies in a way that is at odds with the widespread conception of science as an activity whose sole purpose is to observe and study, that is to 'know' the world" (MacKenzie et al. 2007, 2). Social scientists are describing and prescribing, yielding the ability to directly effect the object of its study, in

other words, "By participating in the economy, it would place itself within the object that it is supposed to be studying from the outside, and it would thus run the risk of corrupting or distorting that object" (Callon 2007, 315). Thus economics, like all social sciences, is inherently performative.

Performativity is a characterization of a discourse which, "…contributes to the construction of the reality that it describes" (Callon 2007, 316). There are two general forms of performativity, generic and effective performativity, the former being the drawing on economic discourse to inform economic action, and the latter denoting cases whereby drawing on the socially constructed discourse that is economics, the processes animating the phenomena this discourse describes begins to change (Mackenzie 2007, 60-61). When discussing stylized facts as non-benign, we are speaking at the generic level, i.e., the deployment of these stylized facts is affecting reality. However, if the deployment of these stylized facts is actually changing the processes generating the phenomena these stylized facts are "describing", i.e., is effective performativity at work, is beyond the scope of this paper[7].

Stylized facts, and their performative nature, highlight the inability to overcome the positive/normative dualism. Another foundation of institutional economics is the rejection of the normative/positive dualism, recognizing it as logically flawed (Tool 1979, 281). Means and ends cannot be separated, to choose a means is to choose and ends in an infinite loop of the continuum. Stylized facts themselves are normative in their implicit implications of designating what is worthy of study, a function of their socially constructed nature. Data does not speak for itself, nor present itself to us, choices are made in terms of method as well as direction of inquiry. This highlights the socially constructed nature of stylized facts. Ignoring their socially

constructed nature only increases their potential to take on a non-evolutionary and non-benign character.

Given their social construction, stylized facts take on, what Bourdieu would call, a doxic character. The term doxa, developed by Bourdieu, refers to common sense beliefs which are non-benign when acted upon (Bourdieu & Waquant 1992, 168). Often when discussing doxa, Bourdieu was referring to the common sense (i.e. habits of thought) of subjects in his study, but often pointed out that scholars are also prone to doxic habits of thought (Bourdieu & Waquant 1992, 248). Stylized facts are socially constructed and then are socialized into the next generation of scholars through our education. They present to this next generation as preconstructed, something to be taken for granted. There is a functionality to the internalization of the preconstructed, e.g., the learning the language of your discipline, the concepts are preconstructed, but must be internalized to facilitate engagement within the discipline (Bourdieu & Waquant 1992, 223, 225). But this presents a problem when the next generation of scholars operate with the preconstructed directing their inquiry and policy proposals, leading to non-benign outcomes as a result of academics operating off of a scholarly doxa.

The Phillips curve has taken on a doxic character and R&R's stylized facts has the same potential without vigilance. The Phillips curve's doxic character is emblematic in the responses of economist upon hearing it invoked. They often immediately draw an inverse curve in their mind, why? It is because this is what we have been taught, the tendency to mentally draw an inverse curve rather than thinking of it as a relationship with no functional form is emblematic of its doxic character. Look to the latter parts of most introductory economic textbooks, there is an inverse Phillips curve. Again, this relationship broke down in the seventies in the US, yet large number of future economists are taught to see an inverse relationship. This common sense

becomes the basis for future inquiry, and directing future policy outcomes. R&R's findings are much more recent and have yet to take on such a ubiquitous meaning, however, there is potential that it will take a similar path to the Phillips curve, a relationship once found through inductive methods in a specific time and place, to an assumed relationship, never reverified, but assumed[8].

Stylized Fact #1: There is a trade-off between unemployment and inflation

The Phillips curve is non-benign. Its doxic character, continues to lead economists, and specifically the federal reserve to think about policy in the trade-off framework: do we want unemployment or stable prices. As Galbraith points out, there has been no wage led inflation since the 1950s in the US with the brief exception of 1973, yet concerns of the specter of inflation are often invoked in response to pro-employment policies (1997, 99). In this zero-sum framework, policy makers have consistently chosen stable prices (benefiting asset holders), while trying to maintain a certain level of unemployment to maintain this stability (hurting workers). The doxic Phillips curve leads these economists to assume we live in a zero-sum world; however, this is not the case in the absence of the Phillips curve, which broke down in the seventies. Moreover, the Phillips curve model implicitly assumes the only source of inflation is wage-push, discounting the role of demand-pull and cost-push inflation. The majority of inflation episodes that have occurred in the last 50 years, though rare, almost always are the result of commodity price shocks. Yet as Galbraith points out we have not come up with a "non-accelerating rate of oil production", we stick with the fiction of the natural rate, a fiction that helps rationalize this zero-sum world in face of lacking empirical evidence for such a trade-off. One victim remains: the worker.

Stylized Fact #2: Nations with Debt-to-GDP Ratios in Excess of 90 percent Experience Lower GDP Growth

R&R's findings have yet to take on a doxic character, insofar as it has yet to become socialized into the next generation of economists as common sense, due to its relatively recent construction. However, it does act as an "empirical support" to earlier ideas, such as Ricardian Equivalence, that have become common sense justification for austerity policies. If R&R's stylized fact is incorporated into the cannon similar to the Phillips curve the possibility of it taking on a doxic character is very real. The non-benign character of this stylized fact is still evident in its use to systematically justify austerity, the economic policy of restricting the fiscal belt.

In light of R&R's findings economists and policy makers have advocated austerity in response to rising debt-to-GDP rations. EU member countries have most ardently adopted austerity measures in response to their sovereign debt crises, a result of the institutional arrangement that is the monetary union. Following implementation of austerity measures we have seen continuing stagnating growth, sustained levels of unemployment, as well as increasing levels on inequality (Gualerzi 2017, 398; Schneider et al. 2015). This is not surprising given the supply-side approach embedded in austerity logic, trying to get the financial house in order and let the free markets lead the way to recovery. However, as Keynes showed, and countless others following in his tradition, without fiscal stimulus the possibility of recovering demand to levels necessary to sustain growth is unlikely, and austerity's scaling down of government expenditure only moves us further away from a demand-led approach to economic contractions.

Neither the Phillips curve nor R&R's stylized facts are benign. Through their treatment each has been used to justify policies which negatively impact the working class, while giving gains to those in the upper class. The Phillips curve has been used to justify fears of inflation that never seems to come, undermining pro-employment policies in favor of those that stabilize

asset prices. R&R's stylized fact has been used to justify austerity policies, which limit the government's ability to use expenditure to prop up demand in times of economic downturn. What austerity brings in the gutting of social safety nets, leading to low growth, high unemployment, and increasing inequality, all exacerbating the problems brought on by economic recession, rather than alleviating it. To mitigate the non-evolutionary and non-benign character of these stylized facts, economists need to practice reflexivity, an ongoing process, where the researcher is continually interrogating what is being taken for granted in their own methods and logic, to ensure these are grounded in instrumental reasoning. Reflexivity is the first step in safe guarding economics and the public against doxic understandings, and is a necessary condition of realism in analysis.

Moving Forward: Reflexivity

The development of a Stylized facts themselves are not inherently antithetical to an evolutionary approach to economics nor analysis in the realist tradition. Lawson (1989) lays out a formula in which stylized facts can be used effectively in economic analysis to better articulate the underlying structures generating economic phenomena. However, Lawson does not go far enough, insofar as he advocates for the continual revisitation, scrutiny, and testing of the processes articulated for explaining the generation of stylized facts, but does not explicitly point out that we must also go through this process with the stylized facts themselves. Lawson highlights their preconstructed nature but does not find fault, arguing this is a natural and functional aspect of academia. Bourdieu would agree with this appraisal of their functionality, but because something is functional does not mean that its non-benign. To mitigate against stylized facts from becoming non-benign we as economists must practice reflexivity.

Reflexivity is where the familiar is made strange, the research looks at their own habits of thought and practices and seeks to articulate that which is often unarticulated. The aspects of research most often unarticulated are those preconstructed aspects which we internalize through our academic socialization. Stylized facts are a part of this preconstructed category, Bourdieu argues, "The preconstructed is everywhere…The sociologist is thus saddled with the task of knowing an object—the social world—of which he is the product, in a way such that the problems that he raises about it and the concepts he uses have every chance of being the product of the object itself" (Bourdieu & Waquant 1992, 235). In other words, we can never let the preconstructed direct our inquiry and policy. Instrumental logic requires reflexivity, the process of deconstructing the preconstructed, to ensure ceremonial habits of thought are not directing inquiry nor policy. The advocation of reflexivity is not an individualist pursuit, but needs to become a part of the dispositions distilled into academics, foundational within the academic habitus.

Applications interrogating the foundations of the stylized facts above are not non-existent. However, many of those challenging the Phillips curve are coming from the outside of the orthodoxy and rarely have the ability to change orthodox habits of thought regarding the Phillips curve[9]. However, R&R's stylized fact has not been granted with such immunity. Herndon et al. (2014) upon receiving the data R&R used to reach their conclusions, found a number of questionable methodological choices and calculation errors, which led to their empirical findings. Upon correcting for these problems Herndon et al. (2014) find no significant debt-to-GDP threshold upon which growth is negatively affected. This led to a controversy for R&R, especially given their works role in propping up austerity. R&R (2013) responded arguing they had never argued causation between high debt-to-GDP ratios and economic growth;

however, the title of a piece written by R&R in 2011, "Too Much Debt Means the Economy Can't Grow", is evidence to the contrary. Regarding stylized facts, Herndon et al. argue, "A necessary condition for establishing a stylized fact is that the calculation on which such facts are based are accurate and that the results of such calculation are robust across alternative reasonable methods of calculation" (2014, 258). Their work is an example of reflexivity in action, and as pointed out above, is a necessary process in establishing stylized facts in a useful manner.

Stylized facts can be useful tools, using abstraction to better understand the economic structures generating phenomena. Reflexivity is a necessary condition for establishing useful stylized facts. The "preconstructed is everywhere", and is functional, heuristics can help us grapple with the complexity of our dynamic object of study. However, the heuristics we rely on in analysis must be animated by evolutionary habits of thought to ensure that abstraction is moving us closer to understanding the real structures animating economic phenomena rather than abstracting away from them. Reflexivity needs to be internalized in the set of dispositions of all academics to ensure an evolutionary approach to inquiry and an evolutionary treatment of analytical tools, ensuring they do not take on non-evolutionary and non-begin characters. Given the performativity of economics, it is incumbent upon us to ensure reflexive practices become the norm.

Conclusion

This paper demonstrates how stylized facts generated while not following realist principles of inquiry along with reflexivity can take on a non-evolutionary and non-benign character. Two stylized facts, the inverse trade-off between changes in unemployment and price level and that countries with debt-to GDP rations in excess of 90 percent experience lower economic growth are used as evidence of non-evolutionary and non-benign stylized facts. Lawson (1989) presents

principles of realist analysis which when followed should mitigate against the potentiality for stylized facts to take on a non-evolutionary and non-benign character; however, he does not go far enough. In conjunction with following realist's principles of inquiry, reflexivity must become a default practice in economic inquiry, continually interrogating the preconstructed. Given the performative nature of economics, it is incumbent upon us as a discipline to practice reflexivity and facilitate its practice as much as possible.

Footnotes

[1] (See Snowdon & Vane 2005, 305-307 for an example)

[2] Lawson characterizes realism as, "…realism asserts the existence of the objects of research as independent of the enquiry of which they are the objects. In other words, according to this doctrine, there is a material and social world that exist independently of any individual consciousness and which is knowable by consciousness—true theories of real entities can be obtained" (1989, 61).

[3] First identified by Phillips (1958) through inductive methods, for a specific time and place.

[4] Associated with the claims of Reinhart & Rogoff (2009 & 2010).

[5] This is why this paper is title "The Non-Evolutionary and Non-Benign *Character* of Stylized Facts", and not titled, "The Non-Evolutionary and Non-Benign *Nature* of Stylized Facts". In this case, "character" is used to imply characteristics taken on through deployment as opposed to "nature" implying something intrinsic, irrespective of deployment methods.

[6] As pointed out by McCloskey, in lieu of conversations regarding the epistemological questions of thresholds regarding model misspecification or an empirical relationship no longer holding, we are left in this infinite, "pseudo-scientific ceremony of hypothesis-regression-test-publish…" (1983, 494).

[7] For an example of effective performativity see MacKenzie (2007) discussing the Black-Scholes model and its influence on the process generating option prices.

[8] You might be tempted to argue that the Phillips curve is not assumed, as evidenced by the number of empirical studies each year investigating it. However, these studies, when not finding an inverse relationship often fall back to questions of model misspecification rather than asking if the relationship has broken down. This tendency of researchers is emblematic of the assumed nature it has taken on in their habits of thought.

[9] For example, see the Winter 2018 edition of the *Review of Keynesian Economics* wholly dedicated to such and interrogation.

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