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Response to “Fashion Cycles in Economics”

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THE PURPOSE OF MY PAPER “DESIGN INNOVATION AND FASHION Cycles” (*American Economic Review*, 1995) is to provide a model that captures two features of fashions.

1. Fashion goods are used as signaling/screening devices in social interactions.
2. Goods remain fashionable for a limited period of time and then go out of fashion only to be replaced by other fashionable goods.

The paper argues that fashion demand is cyclical *because* of the signaling role of fashion. Agents use fashion goods to signal their type—e.g., their wealth—and to screen the type of other agents. A fashion good is an effective signal as long as its price is high and only high types have an incentive to buy it. Over time producers will lower the price of the fashion good to sell the good to lower types. This leads to a degradation of the signaling value of the fashion. Eventually, there is room for a “new fashion”, i.e., another fashion item sold at a high price that separates high from low types.

In economic theory the role of models is to isolate the key aspects of the relevant reality. Stylized models serve this purpose by focusing attention on essential variables and by facilitating the analysis. To a large extent the criticism offered in the comment by Coelho, Klein, and McClure (CKM) reflects a misunderstanding of the role of economic models. Their criticisms often boil down to the assertion that the real world is more

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complex and that these complications should be reflected in the model. But adding realism is not a value *per se*. A more realistic, and hence more cumbersome, model that reproduces the same result obfuscates rather than clarifies the underlying insight.

THE PUZZLING FEATURES OF FASHION

Below I list two key aspects of consumer demand for fashion goods that my model seeks to explain.

Consumers pay a premium for fashionable labels, recognizable brands or fashionable designs. This premium cannot be explained by quality differences.

Prada sells Nylon bags that cost several hundred dollars. It is hard to imagine that consumers would pay the same amount for a bag of similar quality by a “no-name” producer. A key feature of Prada, and other producers of high-end fashion goods, is that their products are recognizable. People who buy a Prada bag can be sure that other fashion-conscious consumers recognize the brand of the bag and probably even the vintage of the design.

CKM seem to argue that there is no premium for fashionable brands and consumers do not pay for design *per se*. Hence, according to CKM consumers would pay the same amount for a Prada bag and a similar quality bag by an unknown producer.

Desirable designs go out of fashion only to be replaced by new desirable designs. Consumer demand for fashion is surprisingly correlated.

Every observer of fashion notes that fashions “change”, i.e., the demand for a fashionable product will be high for a limited period of time and then will drop. Periodically new fashions emerge and consumer demand tends to be highest for the latest designs.

A naïve theory that tries to explain this phenomenon with a taste for variety falls short because it does not explain the correlation across consumers. When a new fashion arrives all consumers seem to switch their tastes simultaneously. This simultaneity cannot be explained by an individual taste for variety. Rather it suggests that the demand for fashion is a “social” phenomenon, i.e., the demand for fashion has something to do with social interactions.

A BRIEF SUMMARY OF THE THEORY

People often interact with individuals who they do not know very well. Not all interactions are equally profitable and individuals must decide whether or not to “invest” in an interaction without knowing the exact type of the potential partner. A type may refer to the income, the education status or the intelligence of a person. In this situation it may be beneficial if a potential partner can signal his or her attractiveness. The role of fashion in this context is to facilitate this signaling and help sort individuals according to types.

The paper offers a model of this role of fashion. Since we want to focus on the social role of fashion, it makes sense to assume that the fashion good has no intrinsic value to the consumer. The point is that *even if* the fashion good has no intrinsic value it may be useful as a signaling device in social interactions.

The paper assumes there are two types, “high” and “low”. Agents derive a benefit from interacting with one other agent. This benefit depends on the types of the two individuals. Types are complementary so that positive assortative matching is socially optimal.¹ Since the type of an individual is unobservable, the socially optimal matching cannot be implemented. In the benchmark case without fashion, each agent is simply matched with a randomly drawn individual. Fashion is modeled as an (indivisible) item that is visible but otherwise useless. Suppose that some agents buy the fashion item and others do not. It is now possible to sort agents into those who use the fashion item and those who do not. Because high-type individuals are willing to pay more than low type individuals to

¹ This means that it is socially optimal to match high types with high types and low types with low types.

improve their chance of meeting other high types the fashion facilitates more efficient matches.

The model assumes that agents who use the fashion item are matched with other agents who use the fashion item and non-users are matched with other non-users. This matching process is incentive compatible because, in equilibrium, agents who own the fashion item are more likely to be high types. The design-users prefer to be matched with other design-users and will reject being matched with non-users. Hence, the assumed matching technology can be thought of as the stable outcome of a decentralized, voluntary matching process.

A key ingredient of the theory is the unobservability of types. If types are observable there can be no social value to fashion as described in the model. Hence, the theory suggests that we should see more use of fashion in urban environments where anonymous interactions are more common than in rural areas where anonymous interactions are rare. In rural areas individuals may have pretty good information about the types of potential matches and therefore have less demand for signaling devices to aid the matching process.

To illustrate the dynamics of the model suppose there is an established fashion that separates high and low types. Suppose high types have purchased the fashion item and low types do not find it worthwhile to buy the fashion item at the current (high) price. Consider the incentives of a firm selling the fashion good. If the marginal cost of producing the fashion item is small then the firm has an incentive to lower the price and sell the item to low types. Low types will use the fashion to improve their chance of meeting high types. But, when all consumers use the fashion, it can no longer separate types. As a result, there is demand for a new fashion. A new design, if introduced at a sufficiently high price, will again separate types.

The theory argues that goods go out of fashion because they cease to be effective at separating types. The model assumes a monopolist seller of the design. Because fashion items are durable the monopolist will lower the price of the item over time. Once the item is owned by a sufficient number of consumers there is room for a new fashion. At that point the monopolist will create a new design and a new cycle begins.

One key assumption is that the fashion good is relatively cheap to produce (i.e., a low marginal cost). This is a reasonable assumption for Prada handbags made of nylon but a less plausible assumption for jewelry or high-end watches. In the latter case, the good may still be used to as a signaling/screening device. However, if the marginal cost of producing the good is high the seller may not lower the price sufficiently for low types to

buy the good. As a result the signaling/screening role of fashion may not lead to fashion cycles for goods with a high marginal cost. Put differently, the theory suggests that we should see fewer fashion changes for products with a high marginal cost such as high-end watches than for products with low marginal costs such as nylon handbags.

CKM observe that in reality there is more than one producer of fashion, and hence the assumption of a monopoly is unrealistic. However, the point is that *even if* the designer has monopoly power over the design (and imitation is impossible) we can expect degradation of the signaling value of the design over time. Hence, even when there is a monopoly we can expect design changes and fashion cycles. If designs can be imitated then we would expect faster fashion cycles but the driving force behind the cycle would be the same: as designs spread they become less valuable.

In reality, designers do have some monopoly power in the sense that they control the label. It is illegal for other designers to *exactly* copy a Prada bag or to use the Prada label. In that sense, Prada has some property rights over its designs.

ADDRESSING SPECIFIC CRITICISMS

In this section, I address some of the specific concerns raised by CKM.

No Intrinsic Value of Fashion Goods

CKM write: “*Unlike real-world garments Pesendorfer’s ‘design’ does not comfort, protect, warm, nor beautify; neither does it generate prestige or ostentation*” (CKM, 438).

The point of my paper is to analyze aspects of fashion that differ from standard goods. Of course, clothing keeps people warm just like orange juice quenches thirst. But what is interesting about clothing is that it sometimes has a social role in addition to its more traditional role. The paper focuses on this social role and therefore it makes sense to abstract from other functions of the fashionable item.

The paper shows that *even if* there is no intrinsic value to a fashion good it may have value for consumers because it helps them in social interactions. The model tries to isolate the difference between fashion and orange juice. An unrealistic but useful simplifying assumption is to assume that fashion has no intrinsic value.

It is clear that certain ways of introducing an intrinsic value to fashion goods will not alter the results. For example, a type-independent intrinsic utility would not qualitatively change the results. However, it is not clear that *every* way of introducing intrinsic value would leave the analysis unchanged. The purpose of adding intrinsic value to the model would be to figure out when it alters the analysis and when it does not. CKM do not explain what, if any, effect they expect from the introduction of intrinsic value.

I disagree with the assertion that fashion in my model does not generate prestige or ostentation. In my model, people own fashionable items in order to affect the pool of agents they interact with. Those who own the fashion item are more likely to be high types and therefore are more likely to meet other high types. Far from precluding prestige or ostentation, the model provides a specific theory of what one could mean by prestige (probability of being a high type) and explains why people care about prestige (increased probability of being matched with other high types).

A related complaint in CKM is that the model is not specific in what is meant by fashion. CKM write: "*Pesendorfer uses the terms 'fashion', 'garment' and 'design' interchangeably because, in the model, they all mean simply the ticket to mix with other ticket holders*" (CKM, 438). Again, the authors express a distaste for abstraction and a desire for nuanced realism. For my results it is irrelevant whether the fashionable item is a garment or a designer handbag. Providing a unified framework for analyzing fashion cycles without having to address the specifics of particular industries is one of the main contributions of my paper.

Matching

CKM object to the matching process as a model of social interactions. They refer to it as a "*compulsory, never ending matching process*" (438) and suggest that it describes a world of "*forced association*" (442).

The matching technology sorts people by the fashion they use. If there is one fashion design then each user of the fashion item is matched with another user while non-users are matched with other non-users.

This matching technology is simply an abstract way to capture decentralized interactions. As is typical in economic theory, the voluntary aspect of the interactions is captured by the equilibrium. *In equilibrium*, people who use the fashion prefer to be matched with other people who use the fashion and would object to being matched with people who do not use the fashion. The reason is that users are more likely to be high types than non-users. Therefore, in equilibrium, the “forced” matches are all voluntary. In fact, the “forced” matches are the only voluntary matches possible in equilibrium.

CKM could level the same criticism at the standard Walrasian model of competition. The competitive model “forces” agents to trade at a given price. A literal interpretation of the model might argue that the model describes a planned economy and not a market economy because agents are not free to choose the terms of trade. This critique misses the point that (in a competitive, thick markets environment) *equilibrium* prices are the best terms an agent could hope for. If a consumer proposed a price that is more favorable to him than the equilibrium price he would be unable to find a trading partner. Hence, *in equilibrium*, the competitive model captures the outcome of voluntary and decentralized exchange.

CKM also object to the following assumption on the matching process. Suppose all but one agents use a design. It is assumed that the single non-user is matched with a low type. To motivate the assumption it is useful to consider what happens when there is a small fraction of non-users. In that case, *in equilibrium* the non-users are sure to be low types. As a result, an agent who does not use the design is sure to be matched with a low type. Hence, the assumption that a single non-user is matched with a low type amounts to assuming a continuity of equilibrium payoffs at the point where the design reaches full market penetration. The assumption can be justified if there are some low types who are committed to never using the design.

An alternative would be to assume that a single non-user is not matched and therefore receives a lower payoff than if he were matched with a low type. This would lead to a discontinuous jump up in the reservation price for the fashion item at the point where the item has full market penetration. I conjecture that even with this discontinuity the results of the paper would be qualitatively unchanged.

CKM seem to suggest (441) that in the case where all but one agents use the design, the single non-user should be matched with a random *user* of

the design. However, users would *object to* being matched with a non-user since they will (reasonably) believe the non-user is less likely to be a high type than a user. Therefore, it would be unreasonable to match a single non-user with a random user.

Demand Function

The analysis of the demand for fashion in a static setting asks how much agents would be willing to pay if the output was q units. The function f describes the maximum that agents would be willing to pay for q units. Hence, f can be interpreted as the market's willingness to pay or the inverse demand function.

CKM are correct when they argue that f is not the same as a standard demand function. There can be no immediate analogue of a demand function because the value of the fashion good is entirely derived from its role facilitating better matches.

CKM point out that if we simply set a price then there may be multiple demands consistent with this price. This is correct but irrelevant. The producer can pick the price *and* the quantity he chooses to supply. The function f describes the possible price/quantity choices that are feasible for a (monopoly) producer in the static setting.

The Importance of Design

CKM (449) assert that “...*no quasi-monopoly in fashion design exists. What principally allows garment producers to price their products at a premium to ‘ordinary’ garments is their reputation for producing superior garments, superior in a number of production characteristics.*” Further CKM claim (450): “*People in the fashion trade realize that the marginal cost of a particular design is trivial. Consequently, consumers do not pay for design per se.*”

These assertions are stated without evidence and do not seem plausible. For example, when a consumer buys a \$665 Prada handbag made of Nylon,² what is she paying for if not the design? If CKM's claim were

² Available at Neiman Marcus online. See:

<http://www.neimanmarcus.com/store/catalog/prod.jhtml?cmCat=search&itemId=prod15690701>

true then a bag by a no-name producer similar in quality to the above mentioned Prada bag should sell for a similar price. I find this very implausible.

High-end fashion producers are known for their designers. Many of these companies (D&G, Armani, Prada, etc) carry the name of their star designer and most of the marketing effort is focused on selling a “look”. For CKM this must be a very surprising coincidence. Since in their view fashion is all about the quality of the garment the celebrities of the fashion world should be the high-quality manufacturers and not the designers. If CKM’s view of the fashion world were correct we should expect the quality of the manufacturing to be the central focus of the fashion market. As is the case for other consumer durables, we would expect the marketing to focus on functionality and durability rather than looks.

Notice that this focus on selling a “look” is exactly what one would expect if fashion is used as a signaling device. After all, the appearance of a garment is the one feature that is observable both to the consumer *and to the observer*.

Fashion houses own a “label” or a brand name that is valuable. My model suggests an explanation why a label can trade at a premium even if the no-label substitutes are of similar quality. The reason is that consumers use the label to signal something about their type. Note that entry in this market is difficult because any newcomer must solve a coordination problem. To establish a new “label” it is not sufficient to convince a single consumer to switch. Rather the fashion house must convince a whole population to adopt the new label as an accepted signaling/screening device. Moreover, offering the good at a low price may not be a good strategy for an entrant because at a low price the fashion is ineffective as a signaling/screening device.

CONCLUSION

In the paper, “Design Innovations and Fashion Cycles”, I argue that fashion goods have a signaling/screening role that helps explain fashion cycles. The point of the model is to develop a framework that illustrates the mechanism by which the signaling/screening role of fashion leads to fashion cycles.

In their comment, CKM argue that many of the simplifying assumptions in my model are unrealistic. However, they offer no arguments why more realistic (and more cumbersome) counterparts would overturn the basic result of the paper. In this response, I have argued that many of the simplifying assumptions are well justified and that the mechanism by which the signaling/screening role of fashion leads to fashion cycles is fairly robust.

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