10 Deceptive Mimicry in Humans

Diego Gambetta

falsificando sé in altrui forma
—Dante, *Inferno*

10.1 Introduction

Passing oneself off either as a different individual or as a member of a group to which one does not belong is a common deceptive strategy. Adopting the term used in biology, I will call it deceptive *mimicry*.[1] Mimicry is employed in order to achieve aggressive or defensive goals. Most species, viruses and plants included, are either victims of it, perpetrators, or both. Humans are second to none. Unlike other organisms, they can

1. In common parlance, the terms *mimicry* or *mimicking* cover a wider range of behaviors than that covered by the notion of mimicry employed here. In biology itself (including in other chapters of this volume) the term is used as synonymous with imitation. Mimicking can also refer to a way of *entertaining* (e.g., cross-dressing, masking for fun, acting); in this case the receiver knows she is watching an act of mimicry, or her ignorance is inconsequential. It can also consist of *improving our image* by adopting the style, looks, or mannerisms of people we admire (as when people name their children after heroes or celebrities, an act that is not meant to cause identity confusion). Mimicry can take the form of *blending in* by adapting to local conventions (e.g., switching from British to American spelling and terminology when in the United States; wearing a tie or a skirt where everyone else is wearing one to avoid attracting attention; joining in activities one normally finds disagreeable during field or missionary work). Mimicry can also of course be a form of *insanity* (the classic "I am Napoleon"). Or a subconscious *by-product* of learning something else; while we learn, say, a language, we also absorb ancillary features such as accent or pitch (a phenomenon that generates, for instance, local conformities, not just of accent, but of voice pitch or handwriting). For another variety of nondeceptive mimicry studied by biologists, see note 4.

play the game intentionally and strategically rather than through natural selection. They do not just play it with other species as most other animals do, but against each other. And the vast range of signs on which humans can rely to identify themselves as individuals or as group members, and thereby transmit reputational information efficiently, gives them equally vast opportunities for mimetic manipulations. The study of mimicry is crucial for answering a fundamental question in the social sciences: How can human communication remain viable in spite of the ever-present threat of deception?

Mimicry abounds in the gray area of everyday acts by which people work their way into obtaining small prerogatives or avoiding petty nuisances. Everyone I tell about my project volunteers some personal episode. A distinguished member of the Columbia University faculty admitted passing himself off as a medical doctor in order to jump restaurant lines. A friend who worked for the British civil service and was barred from engaging in public controversies concerning his responsibilities wrote letters to the *Times* under an assumed name when the policies he advocated came under attack. Youths regularly try to pass as being over 18 to buy alcohol, cigarettes, adult magazines, or go to war, while older people try to pass as younger to qualify for student discounts.

There are of course far less venial episodes of mimicry. For instance, circumventing norms of fairness based on category is a common practice. A notorious example is the man who as the *Titanic* was sinking dressed up as a woman to get on a lifeboat; healthy people pose as disabled to qualify for benefits, to avoid military service, or to occupy parking spaces for the handicapped.

Criminals pass themselves off as someone else both to avoid detection and to trap their victims, and not a day goes by without a case of mimicry in the news. Consider a casual selection from New York City over 2 months of 1996. In November, local television channels broadcast two warnings, one concerned a phony Santa Claus expected to descend on midtown Manhattan during the Christmas period to beg for donations on behalf of nonexistent charities; the other concerned thieves impersonating Con Edison (the electric power company) employees in order to gain access to people's homes. Viewers were encouraged to ask for proof of their affiliation. In December, in Queens, five men wearing caps and windbreakers bearing the initials DEA (Drug Enforcement Agency) broke into a house searching for drugs. They roughed up the residents until a neighbor called the real police. In the same month two men rang the doorbell of an apartment on the upper West Side claiming to be from United Parcel Service

(UPS); one of them was wearing the UPS uniform. They shot and killed one man and wounded another in a robbery attempt. They must have heeded the warning given to television viewers and switched to impersonate UPS rather than Con Edison employees.

Defensive rather than predatory mimicry is also popular. There are many recorded cases of blacks passing as whites, Jews as Christian Poles, women as men, and gays as straight to avoid discrimination or persecution; and of Nazis passing as Jews to avoid arrest, straight men passing as gays to avoid conscription, and men passing as women to avoid detection. (In 1943 my father fled from German-occupied Turin arm-in-arm with his elder brother, wearing makeup and my mother's clothes.) If we include counterfeited goods and Internet-based commerce and communications, the list of mimicry episodes becomes endless.

Here I give some indications of how we might study this phenomenon. It is a programmatic essay without a punch line. Given the scope of this book and the scant scholarly attention devoted to mimicry, I chose to provide a broad-brush introduction to the concept, rather than analyze any particular example. First, I deal with the basic concepts and theory needed to understand how deceptive mimicry works. This part draws heavily on Bacharach and Gambetta (2001). I then discuss the links between mimicry and imitation. Finally, I describe some mimicry systems by way of examples, drawing on work in progress. My aim is no greater than to scratch the surface of the phenomenon and put it on the scholarly agenda.

10.2 Definition

In biology, the standard mimicry case has two phases. First, there emerges a mutant of some *k*-possessing type of organism that bears a clearly perceivable sign, *m*. *k* is any unobservable quality of the mutant, for example toxicity, and *m* is, say, a bright marking or distinctive odor. If a predator of that mutant learns to associate *k* with *m* and refrains from attacking it when perceiving *m*, this gives the mutant a selective advantage over other *k* possessors without *m*. This mutant is called a *model*. The discerning predator also has an advantage over a predator that does not perceive *m* or associate it with *k*.

In a second phase, there emerges a mutant without the *k* property (say, nontoxic) but also bearing *m*. Observing *m*, a predator refrains from attacking the nontoxic mutant because it takes it to be toxic. This second mutant also becomes selectively advantaged, in this case over other non-*k*-bearing organisms without *m*. This mutant is called a *mimic*, and the

action by which a mimic "persuades" the predator that it has *k* and induces it to respond accordingly, is called *mimicry*. The receiver of the signal, in this example a predator, is often called a *dupe* (even though it may not be duped all the time by the mimic). In zoology, mimicry studies focus mostly on the mechanics of the second phase and on the population dynamics among model, mimic, and dupe, which ensues from it.

Camouflage can be conceptualized as a case of *negative mimicry*. There are often signs that are likely to be interpreted by the signal receiver, rightly or wrongly, as indicating not-*k*. Both an honest signaler with *k* who expects to be unjustly perceived if he displays an *m*, and an opportunist non-*k* who is afraid of being detected if he does, have a reason to camouflage. That is, they take steps *not* to show *m*. Camouflaging can be considered as a special case of mimicking, since the strategy of camouflaging non-*k*-ness by suppressing *m* is just that of mimicking *k* through displaying the notional sign "*no m*."

10.3 Cognitive Skills

In simple biological models, the only creature that needs some cognitive ability is, paradoxically, the dupe. For in order to identify *m* and thus *k* possessors, the dupe has to be bright enough to memorize *m*, to discriminate it from other signs, and to associate *m* with *k*. The relation between model and dupe, more precisely between *k* and *m* in the mind of the dupe, must precede the mimicry of *k* through *m*.

For mimicry to succeed, the dupe must thus be smart, although not so smart as to detect the mimicry. If a species becomes too exposed to mimicry, however, the dupe's survival may be threatened. As mimics multiply, one of the dupe's possible evolutionary responses lies in refining its perceptive abilities, either by screening more identifying signs, including some that the model displays but the mimic does not, or by detecting the finer differences between a genuine *m* and a copy of it. At the same time, one of the model's possible responses is to evolve new signs that make it easier for the dupe to discriminate *m* and for model-dupe communication to continue to be viable. Mimicry thus exerts pressure on both the selection of more refined perceptive skills and on increasing diversification of perceivable traits. Mimicry is a force of evolution, the full extent of which is still to be established.

Unlike other species, humans can count on greater cognitive skills, which make them able both to perform mimicry and to defend themselves

from it, intentionally and strategically. We can learn how to mimic without waiting for a lucky mutation. We can observe the relation between model and dupe, record how the latter responds to the former, and decide whether the same response would be beneficial for us. As would-be mimics we have the ability to work out by which *m* a dupe identifies a model and to devise ways to copy it and persuade a dupe to treat us as it would treat the genuine *k* possessor. We can exploit, not just the perceptive abilities of the dupe, but also the contingent constraints under which the dupe's perception operates and *the medium* through which it occurs. It is easier to pass as someone else in the dark or over the telephone.

Both models and dupes of course can also participate intelligently in mimicry situations. They can fight, together or separately, to protect themselves from mimics, and mimics can fight back. Among humans, the relentless struggle between mimics and their victims is not played out through natural selection, but through cultural and technological evolution. What the three protagonists aim to do and how, depends on their goals and the relations among them, which give rise to a variety of mimicry systems, some of which I mention later. What they can do depends on the nature of the signs they display, about which I will also say something later, as well as on the technology available for creating and manipulating signs, about which I will not say anything here.

10.4 Signs and Signals

The difference between signs and signals, which is unimportant for the "unconscious mimicry" of other species, becomes relevant when intentionality can govern communication. A sign is just a piece of perceptible evidence that informs a receiver that a state of affairs exists. A sign, unlike a signal, is not conveyed as the result of a decision. A sign is unintentionally emitted by an agent even if, like a signal, it can induce a certain response in another agent. My accent in Italian is a sign that I am from Piemonte, but only sometimes is it a signal that I deliberately use. In spite of the difference between them, signs can turn into signals and, once established, signals may live on as mere signs. Signs are dormant potential signals—the raw material of signals.

The basic form of sign-signal transformation is that a signaler takes steps to produce or display a preexisting sign. It is often taken for granted that signs are noticed, but this is not always the case. A dueling scar may not be on the face, but on the thigh or chest. One way of signaling is to take steps

to make apparent a sign that would not be observed; to bare the chest to display a tattoo to signal, say, that one belongs to Yakuza, the Japanese Mafia.

One trigger of the transformation of signs into signals is the bearer's realization of their effect. I may be unaware that my accent or name is informing others of my ethnic identity until some observer acts in a way that makes me aware of this. Qualities of the signaler valued by the receiver trigger the mutation of signs into signals, while qualities of the signaler disliked by the receiver trigger measures to conceal the signs.

10.5 Signaling and Mimicking via Identity

Humans can deceitfully pretend to possess an unobservable property *k*, e.g., honesty or meekness, by adopting an *m* that is associated with *k*, e.g., looking people in the eyes to persuade them of one's honesty. Or they can feign certain dispositions—curiosity, excitement—or physical and emotional states—headaches, grief, orgasm—by imitating the looks, postures, words, or level of activity *directly* associated with these states. The model in these cases is not a specific agent or group of agents, but a generic state and its manifestations. This is not, however, the type of deceptive mimicry that concerns me here.

A great deal of human signaling takes place indirectly by signaling one's identity both as a specific individual and as a member of a group or category.[2] After we encounter an individual or group member and experience dealing with them, we form and retain an idea of whether this person or group has or lacks the *k* property that interests us. Identity signaling enables the signaler to exploit (or suffer from) a reputation.[3] In identity signaling, instead of using a two-layered inferential structure ($m \rightarrow k$), we use a three-layered structure, $g \rightarrow i \rightarrow k$, where, *i* denotes identity and *g* denotes a sign of identity, or *signature*. If persons or group members are re-identifiable by some signature, the next time we meet them we infer the presence or absence of *k*.

The re-identification of a signature, however, can itself be problematic. This is because frequently the fact that someone has a certain reputation

2. For a full description of identity signaling in connection with signaling theory, see Bacharach (1997) and Bacharach and Gambetta (2001).

3. This in turn exploits two beliefs in "trait laws" that we have about others. For individuals it exploits the belief that once a *k* always a *k*, and for groups it exploits the belief that if a member of a group has *k*, all other members also will have *k*. For a discussion of this point, see Bacharach and Gambetta (2001).

is an unobservable property of that person. For example, Armani has a reputation for selling well-designed clothes, but to exploit this reputation, the seller must convince customers that he is Armani. Islamic jihad has a reputation for carrying out its threats against hostages, but to exploit this reputation a group of kidnappers must convince governments that they belong to Islamic jihad. When a model signals his qualities via his identity, the threat of mimicry of *k* through *m* is replaced by the threat of mimicry of *i* through *g*. Much of human deceptive mimicry does precisely that; it exploits signaling via identity, and my interest is in this case.[4]

10.6 Mimicry and Imitation

The core cognitive dispositions that we have to imitate others generally, and which we deploy and develop from infancy, might be the same we use to mimic others as adults, and, more surprisingly, the same that we employ to protect ourselves from the mistaken identification and the mimicry of others.[5] "One of the psychological functions that early imitation subserves is to identify people. Infants use nonverbal behavior of people as an iden-

4. There is a type of nondeceptive identity mimicry worth mentioning, known as Müllerian mimicry after Fritz Müller, who discovered it in 1878: "Two or more equally uneatable species that look alike benefit from less predation each than if they looked different" (Pasteur, 1982, p. 193). Both species more efficiently convey *true* information to receivers. Signalers gain by sharing the same signature because receivers learn more quickly. It is a case of signal standardization. If red means "stop" everywhere, receivers learn faster and make fewer mistakes. Everyone gains. In the original example, both species act as mimic and model of each other and converge on a common signature by progressive mutual adjustments. Real gangsters and movie gangsters who mimic one another (Gambetta, 2005, ch. 4) are a human example of this type. They have something in common; they both make money by making people afraid and gain by converging on the same identification signs of a scary reputation. Other examples, however, are sequential. First an agent dons *m*, then another with the same property chooses to don *m* also. The adoption of gothic-style Oxbridge architecture by American universities is one such case; the standard attire of businessmen and women all over the world may be another. Note, however, that the nondeceptive variety of mimicry often joins the deceptive variety: "A species *B* can be equally uneatable as species *A* for a given predator, and much easier to eat for another predator. If the two species look alike, *B* will be a Müllerian model-mimic for the first predator and a Batesian mimic for the second. In fact the very existence of the pure Müllerian situation in nature has been at least once doubted" (Pasteur, 1982, pp. 193–194).

5. I am grateful to Andrew Meltzoff for bringing this link to my attention.

tifier of who they are and use imitation as a means of verifying this identity" (Meltzoff & Moore, 1992, p. 479). "Infants re-enact the behavior of an adult in part to test the identity of the adult and differentiate them from other particular ones" (Meltzoff & Moore, 1995, p. 55). "By 6 weeks of age, distinctive human behaviors serve as *gestural signatures*, aiding the infant to differentiate individuals within the general class of people: to distinguish one individual from another and to re-identify [a] particular individual on subsequent encounters" (Meltzoff & Moore, 1995, p. 58).

In spite of that cognitive link and even though mimicry and mimicking are often treated as synonymous with imitation, the notion of mimicry is not coextensive with that of imitation. What is mimicked is a *k* or an *i*, an unobservable property of the model that the mimic does not possess. What is imitated is an *m* or a *g*, a perceivable object or behavior, associated with *k* or with the identity *i* of a *k* possessor. Mimicry is an act aimed at persuasion, which the mimic executes by copying or somehow displaying those features of the model that can persuade the dupe of the mimic's *k*-ness.

To understand how the two concepts differ, consider that mimicry can simply rely on lying, which is not an act of imitation. If I reply "yes" to the question, "Are you Napoleon?" I am not imitating Napoleon, but am still trying to mimic being Napoleon. Also, mimicry does not always require an imitative effort on the part of mimic. Lucky mimics can exploit preexisting signs that they happen to share with models. All they need to do is to display them and refrain from correcting the dupe's mistaken identification. A friend who has the same surname as a well-known mobster used to get preferential treatment in hotels and restaurants because people assumed she was a member of the mobster's family. Instances of this kind occur when the signs of identity do not uniquely identify a person or group.

Still, very often mimics execute mimicry by imitating *g*. Imitation is achieved through a variety of techniques—from wearing the model's apparel to undergoing plastic surgery; from using makeup to imitating body movements, from faking or forging signs to stealing them. If I mimic a devout person by wearing a skullcap, I do not fake the skullcap, I can just buy one and put it on. If, however, I mimic a rich man by wearing what looks like but is not a genuine Rolex watch, then I employ fakery to execute mimicry. If I write your name on a check so that it is assumed to be yours, I forge something to execute mimicry. The choice of imitative technique depends on the nature of the relevant signs, and, as we will see later, on the cost of reproducing them.

There are, however, differences between the type of imitative actions that involve learning new or better practices from the example of others,

and the type of imitative actions that sustain mimicry. When by imitating someone a person learns how to improve his performance of something, the higher-quality action that the model performs and that the imitator copies could in principle be discovered by the imitator through other means, e.g., by trial and error. The ways in which an action can be performed has an objective distribution of quality, and one can move upward independently of the model's performance. The model simply offers the imitator an opportunity to move up more cheaply by imitation.

In mimicry episodes, by contrast, the model is not of contingent relevance. The relation between the model and the dupe defines what *g* is to be imitated by the mimic. If a rapist wants to imitate a cab driver to lure women into his car, the signs that he needs to copy are those that real cab drivers use to identify themselves and that passengers look for. To be successful, mimicry-driven imitation needs to be only as precise as the dupe's psychology demands. There is no such thing as an abstractly good or a bad imitation of *g*.[6] The quality of the imitation is in the eyes of the dupe. If a dupe decides on the basis of the model's contour that it is the model, copying that contour is sufficient for an act of mimicry to succeed.

10.7 Studying Mimicry: I. Signaling Theory

The best, perhaps the only candidate to serve as a general theory of deceptive mimicry is the theory of signaling games. It is a well-developed part of game theory, and the understanding of such games, as developed both in biology and in economics, can provide general predictions about the conditions under which mimicry can occur and how much of it we can expect.[7]

The main objective of the theory is to specify the equilibrium conditions in which truth is perfectly transmitted, even when the signalers

6. Mimicking that looks to us—members of a species gifted with but also bound by given perceptual abilities—as relying on good or poor resemblance, may fail or succeed with the intended dupe. The tendency to overlook this point seems to be the reason humans have been generally more alert to mimicry among invertebrates than among vertebrates. Since human perception is closer to the latter than to the former, we have underestimated the duping potency that rough copies can have in eyes different from ours; correspondingly, we have overestimated the duping potency of, say, insects with which we share little perceptual wiring.

7. For signaling theory, see A. Spence (1974), A. Zahavi and Zahavi (1997), and Bacharach and Gambetta (2001). Game theory textbooks normally carry a technical illustration of a signaling game, e.g., Fudenberg and Tirole (1992, pp. 446–460).

have an interest in deception. The main condition is that among the possible signals there is at least one that is cheap enough to emit, relative to the benefit, for signalers who have *k*, but costly enough to emit, relative to the benefit, for the would-be mimics who do not have *k*. If the cost relationships are such that all and only *k*s can afford to emit that signal, the equilibrium in which they do so is called separating or sorting. In such an equilibrium, signals are unambiguous, and the receiver is perfectly informed. When signals have such a perfect discriminating property, mimicry cannot occur, for no mimic can afford it. No poisoner seeks to demonstrate his honesty by drinking from the poisoned cup.

However, the differential cost condition may also give rise to weaker equilibria, so-called "semisorting" ones. In a semisorting equilibrium, there is a signal that is emitted by all *k*s, but not only by *k*s; a certain proportion of non-*k*s can just about afford to emit it also. Here, observing that signal is not conclusive evidence of truth; it makes it more likely that the signaler has *k* but does not imply that he does. Mimicry is possible. The higher the frequency of mimicry, that is, the proportion of non-*k*s who display a signal, the less conclusive is the evidence. Empirically, we know that most cases of signaling in animal life are not sorting but only semisorting equilibria (Guilford & Dawkins, 1991). The same appears true of human life. We seldom encounter such a thing as a fully mimic-proof signal. Virtually everyone who boards a plane gives a sign, most of the times unthinkingly, that he is not intending to cause it to crash. But as we know only too well from recent events, some terrorists may be prepared to do just that and can afford to mimic a normal passenger by boarding. They drink from the poisoned cup.

10.8 Studying Mimicry: II. Semiotic Distinctions

Signaling theory is abstract and does not arm us with the fine tentacles we need to grasp and organize the large variety of signs that can be emitted and processed. There is scope in humans for creating new signs, for discovering latent ones, and for protecting signs from mimics. Protective measures are in turn threatened by mimics' stratagems to get around them, giving rise to a relentless semiotic warfare in which technology plays a major part. This warfare depends on the nature of the relevant signs, which establish whether and how mimics can imitate them.

Despite lacking a concrete semiotic structure, signaling theory offers us a robust criterion by which to establish such a structure and classify signs. This criterion is simply how closely different types of signs meet the key

condition of the theory—the existence of differential costs, which make it cheaper for a model than for a mimic to emit the model's signatures. In the following sections I summarize the results of our work on "semiotic" definitions of signs (Bacharach & Gambetta, 2001).

10.8.1 Cues

A cue of *k* is a sign whose display is costless for *k* possessors.[8] An example is an honest look for an honest person, or, in identity signaling, one's handwriting or voice.[9] The cost of showing that it is you, if it *is* you, is generally negligible. Cues tend to be favorable to models and unfavorable to mimics, for mimics will typically incur some cost in displaying them. Evolution has equipped us with many cues that are naturally protected from mimicry. These may be categorial, such as signs of gender, or individual, such as the face. Cues of this kind are often costly, sometimes impossible, to mimic. Some, like the face, could have evolved, together with our remarkable ability to discriminate among different faces, because they sustain cooperation by making identity signaling cheap and mimic-proof. A look-alike can succeed under certain conditions to pass as someone else—for example, appearing only at a distance or filtered by flattening media such as photography, or by carefully choosing dupes with a dim recollection of the model's face. Still, reproducing someone else's face well enough to stand scrutiny is close to impossible.

Other biological cues of identity, some of which are still being discovered, may have evolved for reasons unrelated to cooperation, or may be just random individual differences that become observable with the right technology. Insofar as they are heteronymous—each signature differs from all other signatures of the same type, avoiding the possibility of mistaken identity—these signatures can be employed for re-identification. Fingerprints and DNA are both unique to individuals. At best one can cover one's fingerprints with super glue but cannot implant someone else's fingerprints or DNA (so far).

8. It is the marginal cost of display, which is zero, not necessarily the historic cost of developing the capacity to display it.

9. This sense of "cue" resembles Hauser's (1996). Although *k* possessors who display an *m* may do so as a signal of *k*, they may also display *m* for some other reason, and indeed in some cases without any purpose. Rich people often wear expensive clothes with no thought of conveying anything about their wealth, but merely to make a *bella figura*; they give evidence of their wealth as an unintended by-product. In such cases *m* is a cue of *k* even though it is costly to produce, because it is not a costly input into the activity of inducing a belief in *k*-ness.

10.8.2 Marks

The next best mimic-proof signs after cues are marks acquired as by-products of the life that each individual lives. As people grow up in given cultural settings, they absorb social features such as language, accent, and mannerisms, or undergo common experiences that cannot be acquired in any other way and are therefore mimic-proof. Ethnic signatures are often of this kind. They come at no extra cost to those who have had the experiences, while they are very costly for anyone else to copy.

During World War II many Polish Jews considered passing themselves off as Polish Christians to save their lives. This was hard to do, however. The models could easily detect them and turn the mimics over to the Nazi dupes. Nechama Tec located 308 Polish Jews who either considered or tried that strategy:

> [A] Jew had to sound and behave like a Pole. For most Polish Jews this was impossible. Poles and Jews lived apart, in different world. Their differences permeated all aspects of life.... According to a 1931 census only 12% of the Jewish population gave Polish as their native tongue, 9% mentioned Hebrew and the overwhelming majority Yiddish (79%).... Jews using the language in a grammatically correct way could still be recognized by their speech. Special phrases or expressions, even if grammatically sound, could be traced to the Jewish origins of the speaker.... In addition special intonations, a stress on special syllables could also become identifying signs. And while most of the Jews were unaware of their peculiar use of the language, the listening Poles were sensitive to all such nuances.... Another pressing condition was familiarity with the Catholic religion.... Those suspected of being Jewish were subjected to cross-examinations. Failure to pass such tests often led to death. In addition the existing cultural differences managed to penetrate into all aspects of life including dressing, eating and drinking habits. Thus, for example, onion and garlic were defined as Jewish foods. It was therefore safer to profess a dislike for each. Also, any man unable to hold hard liquor could be suspected of being Jewish. (Tec, 1984, p. 116)

This case shows how mimicking membership in a different ethnic group is connected as much with the difficulty of mimicking the signs of another group as with that of camouflaging those of one's own. It also shows that ethnic groups with a long common history are robust to mimicry because they are identified by a *constellation* of signatures. A mimic must concoct a large number of imitative acts to succeed. Yet, although estimates vary widely, thousands of Jews succeeded in saving their lives by mimicry (women seemed to be more successful than men, partly because they bore fewer *marks* of "Jewishness" than most men did; see Weitzman, 1999, ch. 11).

10.8.3 Symbolic Signs

Art Spiegelman reports that during the German occupation of Poland, his father used to travel to town by tram. Trams had two cars: "One was only Germans and officials. The second, it was only the Poles. He always went straight to the official car" where a simple salute, "Heil Hitler," was enough not to call attention, whereas "in the Polish car they could smell if a Polish Jew came in" (Spiegelman, 1991, p. 142). It was harder for a Jew to mimic the nuanced multiple signs of a Polish gentile than the fewer superficial signs of a pro-Nazi.

Nazi signs are not marks but symbols. These are configurations of characters or gestures, however physically realized, exemplified by names, logos, and Nazi salutes. What makes them open to mimicry is that among the physical realizations there are usually some that are very cheap for anyone, non-*k*s included, to produce. The efficient production cost of a Nazi salute is zero. Symbolic signs are attractive for signalers because they are cheap, but since they violate the cost differential condition, their evidential value is weak. The expansion of the scope for ultra-cheap transmission of symbol strings is indeed a major cause of the growth of mimicry in our time. Symbolic signatures, individual or categorial, abound, and are vulnerable to mimics. However, the cost of producing a signature may not be the only cost of displaying it. Even though the cost condition fails to be satisfied on the production side, there are ways in other respects in which models and dupes can often raise the cost of mimicry.[10]

10. "Stealing somebody's identity is to be made a specific criminal offence under plans to combat the growing fraud industry now believed to cost Britons at least £1.2bn a year.... A recent Cabinet Office report said that the move to internet and telephone transactions meant that existing systems of identification and authentication were no longer sufficiently robust. A passport could not be verified online and criminals were increasingly hijacking somebody else's identity, for example by obtaining a credit card in their name. The government is considering ways of making it much harder to obtain a driving license or passport by deception, by improving the security of the documents. The passport service is looking at issuing a plastic card using a microchip alongside the current passport book. The consultation paper will also outline a scheme to set up a database of 'stolen identities' so that electronic checks can be carried out online. Home Office ministers want to set up a police database of known and suspected fraudsters against which applications for government services could be cross-checked.... the home secretary, David Blunkett, has made clear his support for the introduction of a 'citizenship entitlement card', saying it would enable people to prove their identity more easily and also provide a simple way to access a range of public services" (*The Guardian*, "Plan to make identity theft a criminal offence", p. 2. May 6, 2002).

10.8.4 Fakeable Signs

A second important category of signs exposed to mimicry occurs when the signature is an object that can be faked. If g is a sign, by definition the receiver can tell by looking (smelling, hearing) whether the signaler is displaying a g of i. But if a thing can be faked, then ipso facto the receiver cannot tell whether what is displayed is really g. A fakeable object is one that can be simulated by another, a g'. For faking to be successful, the mimic must cause an observer to mistake g' for g. An important class of cases in which mimicry by faking occurs is that in which displaying a real g is harder than faking it. If you prove that you are who you are, then you are given a passport. To obtain a passport, a mimic could try to pass as you. But for someone who is not you, proving to be you is often costlier than forging the passport. Displaying g is prohibitively costly for a non-k; displaying a fake g' is not, because k possessors have no particular advantage in producing g', the manifest component of g.

10.9 Studying Mimicry: III. Mimicry Systems

The key principle of signaling theory and the semiotic distinctions derived from it are essential elements in understanding how mimicry works. However, even in the simplest mimicry episode, these elements come together in a triangular structure in which the dupe, the mimic, and the model interact in some way. These structures or *mimicry systems* are the proper unit of analysis for this phenomenon. The most exhaustive taxonomy of mimicry systems created in biology is the work of Pasteur (1982), who explicitly refers to "unconscious mimicry" only. Pasteur distinguishes mainly between models that are agreeable, forbidding, or indifferent to the dupe, and further, between aggressive and protective mimicry.

No taxonomic work has been attempted for "conscious" human mimicry. The distinctions one draws ultimately depend on one's analytical models and what these aim to explain. Still, a heuristic taxonomy might indeed be a precondition for investigating the large class of mimicry events. Here I offer a preliminary description of two important systems and a variant of one of them. It is merely meant to illustrate the kind of work that would be needed to classify mimicry and the kind of dynamic analysis that could be pursued by building on a classification of mimicry systems. My main criterion of distinction is simply the most general relationship between the three protagonists: who is doing what to whom.

All examples refer to *conjunct* mimicry cases (so called by Vane Wright and quoted in Pasteur, 1982), in which the three protagonists belong to the same species, ours. I also confine myself to cases in which the model is an-

other human or group of humans rather than an inanimate entity. Woody Allen's suggested method of civil disobedience, "pretend to be an artichoke but punching people as they pass" (Allen, 1994, p. 72), will therefore not be considered here. Finally, I do not consider impersonation and consider only cases in which the model is a group or category of agents rather than an individual. The mimic, by contrast, whether he mimics an individual or a member of a group, is almost always an individual whose act of mimicry does not depend on others. There are cases, however, of so-called *joint* mimicry, in which succeeding in the mimicry takes more than one individual—passing as lovers, as wrestlers, or as an entire betting office requires two or more mimics.

10.9.1 Mimic versus Dupe via the Model

This system, probably the most common, includes those instances in which the mimic has no dispute with the model, but uses the model's semblance to manipulate the dupe. The mimic does not aim at damaging the model's interest. The mimic aims either to prevent the dupe from doing something harmful to him (defensive case) or to encourage the dupe to do something good for him (aggressive case), when the dupe would act otherwise if he knew that the mimic was a mimic. If successful, the mimic gains, the dupe loses, and the model at best gains nothing; more often it loses something.[11]

After the assassination of Rajiv Ghandi, Sikh taxi drivers took off their turbans to look like Hindus and avoid being slaughtered by them (even though the Tamil Tigers, not Sikhs, were probably responsible for the assassination). Hindu taxi drivers did not lose anything as a result of being mimicked. However, typically the model does lose by being mimicked. There are two ways in which a model can lose. In one case it can lose if the allocation of a resource is altered as a result of a mimic's actions, and in the other case by the corruption of the quality of communication between the model and the dupe.

First, if a resource becomes scarcer because of mimicry, the dupe loses and as a result he may change his actions toward the model, even if the dupe is not aware of the mimicry. If the mimics multiply, a "starved"

11. An instance of this case is the most common, or at least the most commonly studied, form of mimicry in animals, known as Batesian mimicry. The name derives from Henry Bates, who discovered it in 1861 (in fact he discussed many other variants, but this is the one that bears his name). It is a type of protective categorial mimicry in which one species takes on the appearance of another species that the dupes find repulsive, because, say, it is nasty-tasting or poisonous.

duped predator, for instance, may lower his tastes and begin to "eat" semi-toxic prey. Or he may turn nastier and attack all models, true or mimicked, with greater frequency to find out their real quality, albeit at a greater risk. If everyone in a dangerous city looks menacingly tough, whether they are or not, muggers may start attacking people indiscriminately. The real model tough guys lose out since they are more likely to be attacked. This effect can be caused by both protective and aggressive mimicry. If there is some scarce resource that a dupe bestows on the mimic instead of the model, the model suffers by getting less of it. If one buys counterfeited goods, one will not buy the real thing, and genuine producers suffer.

Consider now the second way in which model can lose. Suppose a dupe finds out that there are mimics around. The dupe becomes wary of the model's signatures and loses trust in them. The signatures become corrupt and stop sorting for the same beneficial effect. When the model and the dupe benefit from an on-going relation, mimicry inflicts new costs on both of them, for the dupe becomes less inclined to accept the same old signatures as evidence of the model's identity. Following the robbery in which a criminal posed as a UPS delivery man in New York, a real UPS man interviewed on television put it starkly: "This is real bad for people are not gonna believe us now, they are not going to believe me now." After 9/11, all air passengers lost because now they have to endure more elaborate probing of their identity. To avoid detection, the terrorists took deliberate steps to look like normal passengers, shaving their beards, carrying presents, and wearing business suits and apparel. Suddenly all those signs that we previously did not even think about have become of lesser use. Mimicry tends to destroy the value of a model's signatures.

Notice that as a result of mimicry, corrupt signals lose their value not just for the models but also for the additional mimics. In theory this dynamics must reach a semisorting equilibrium in which for an extra mimic it is no longer worth the mimicry, given the benefit, while for a model it still is advantageous to emit the signal, even though this is now only weakly semisorting. This obtains if the cost of displaying m is higher for the mimic than for the model. However, the weakness of a corrupt signature can reach a point at which the dupe and the model must endure additional costs to improve the model's identity signals or their perception, in order to keep their relation afloat. They can raise the hurdles that the mimic has to jump by better policing or by introducing new hard-to-fake signatures. They can do so independently of each other or cooperatively, for instance by informing each other or by agreeing on new conventional signals that are able to withstand the mimic's stratagems. Yet, mimicry can fatally corrupt a signal and make it impossible for a model to afford new convincing

signs of his identity. Can an honest Middle Eastern man intent on becoming a pilot now find an affordable separating signal to persuade a U.S. flying school of his bona fides?

10.9.2 Mimic versus Model via a Dupe ("Kennedian" Mimicry)

In this system, the mimic's ultimate target is the model. The dupe here is just a means. The mimic is in competition with the model for a scarce resource that the dupe can dispense. The mimic confuses the dupe, who then dispenses his good to the mimic rather than to the model. The Kennedys, after which this mimicry system should perhaps be named, resorted to this ruse for electoral purposes:

> To insure that Jack won the primary campaign [in 1946], Joe paid Joseph Russo, janitor, to enter the race. This split the votes cast for Joe Russo, a legitimate politician who was already on the ballot, confusing voters.... Even the aunt of the real candidate voted for the janitor, recalled Joseph A. Russo, the real candidate's son. (Kessler, 1996, p. 293)

There are also cases of this system in which the model is a corporate entity. In the early 1990s in Rumania, President Iliescu's party—the National Salvation Front, which was then in power—feared they might lose the election. They created bogus opposition parties that had names and logos similar to those of the real opposition parties. Whether propelled by imagination or by imitating the Kennedy ways of mimicking, they hoped to confuse voters and divert their votes (T. Gallagher, 1996, pp. 155–156).

10.9.3 Mimic versus Dupe-Model

This type of mimicry system is a variant of the case in section 10.9.1, in which the model and the dupe are the same agents. I say "agents" because it is unlikely that anyone can pull off this type of mimicry with an individual. If someone rings your doorbell claiming to be you, you may think it a nightmare or a farce, but are unlikely to be fooled. This is the stuff of literature or madness, a form of which has the insane person haunted by the belief that there is a copy of himself around. In view of recent developments in cloning technology, this may turn out to be a rather prophetic insanity, but it is not yet part of everyday life.

It is, however, possible to dupe *collective* models,[12] posing, say, as an aristocrat among other aristocrats. To succeed at this, the mimic must

12. Here is an example from the animal world: "In New Guinea, a dolichopodid fly that visually mimics a psychodid species attracts males of this species by mimicking the sexual behavior of a receptive female, and catches them while they are enthralled in sexual display" (Pasteur, 1982, p. 188).

overcome a detection mechanism that works against him—agents are better at spotting a mimic posing as their sort than a mimic of a different sort. It is easier to pretend to be a Mafioso with non-Mafiosi than with the real guys, or a bogus doctor with patients than with colleagues. Still, many cases of this sort are recorded, and reveal mimicry's subtle ways.

Gunter Wallraff (1985), a German journalist, posed as a Turk to find out how badly Turkish immigrants were treated by Germans. He kept up his act for months, not just with Germans, but with Turks too, although he could barely speak Turkish. Crucial for his success was that no German, or Turk, expected anyone to feel the urge to pass as a Turk in Germany, and they did not bother to check on him.[13]

There is another case in which the dupe did not expect mimicry, although not quite for the same reason. Bryan Riggs (2002; *La Stampa*, "Nazisti, ufficiali del Fuhrer ed ebrei," p. 10, December 3, 1996) has documented 1200 cases of Jews who disguised their ethnicity to fight in the German army during World War II. Among them he found two generals, eight lieutenant generals, five major generals, and twenty-three colonels. One was Helmut Schmidt, the former German chancellor, who had a Jewish grandfather and according to the Nazi definition was "Jewish." And he found one Joseph Hamburger, who not only managed to hide the fact that both his parents were Jewish, but "went native" and is still today a Nazi sympathizer. Nazi dupes did not expect such chutzpah. It must have been unthinkable to them that any one could have the audacity to pull off such a feat. There is a twist in the story though. Seventy-seven of the 1200 Nazi Jews, all of them high-ranking officers, were discovered by the Nazi nazis, but Hitler himself decided *by fiat* that they *were* Aryans, and their genealogy was remanufactured accordingly. Maybe the model-dupe could not bear to be the victim of such spectacular duping. Shame may indeed be a frequent reason that prevents the duped from disclosing the mimicry. From these examples we learn that mimics can succeed when they defy the dupe's expectations by engaging in a deception that is either too odd or too daring for the dupe to conceive of it as probable enough to probe the signals.

I could introduce further mimicry systems, as, for instance, the case in which the model and the mimic assist each other in fooling the dupe, known as cooperative mimicry (the use of look-alikes, in which the model hires a mimic to pass as himself, is an instance of this system,). However,

13. Given that in the end the research was meant to help the Turks, they may have been quite glad to be "duped," unlike the Germans.

for reasons of space, I prefer to give an example of the kind of dynamic analysis that one can construct from the elementary mimicry systems, which shows how mimicry failures can be as interesting as successes.

Consider the case in which several mimics unbeknown to each other, but for the same purpose, simultaneously assume roles with the same model-dupe. G. K. Chesterton gives us the fictional classic case. In *The Man Who Was Thursday*, Syme is a policeman trying to infiltrate a group of anarchists by posing as one of them. He is eventually elected as one of the seven members of the "Anarchist Council" who take the name of the days of the week. Syme becomes Thursday. He meets the other seven members and slowly, in a hilarious crescendo, he finds out that all other six members are also policemen hidden under various disguises. They spy on each other, only to discover that There never was any Supreme Anarchist Council. "We are a lot of silly policemen looking at each other" Syme concludes (Chesterton, 1908, p. 156).

A real case happened during the campaign launched by Greenpeace against McDonald's, which ended in a trial in 1997 in the United Kingdom. In 1989, McDonald's decided to take legal action against London Greenpeace. To do so, the company needed to find out the names and addresses of Greenpeace members, and they hired two investigative firms. Seven spies infiltrated the group. They followed people home, took letters sent to the group, and got fully involved in the activities (including giving out anti-McDonald's leaflets). According to the account of this activity, at some London Greenpeace meetings there were as many spies as campaigners present and since McDonald's didn't tell each investigative firm about the other, the spies were busily spying on each other (the court later heard how Allan Claire had noted the behavior of Brian Bishop, another spy, as "suspicious").[14] The mimics ended up duping each other.

10.10 Conclusions

Mimicry in other species was observed and conceptualized in the middle of the nineteenth century by Henry Bates and other zoologists, and has been studied ever since. Still, despite its ubiquity, human mimicry has not been studied very much at all. Descriptions of countless acts of mimicry are narrated in studies of crime, espionage, business, war, class, political conflict,

14. Fran Tiller, a spy, defected and eventually became a witness for the defense. Another spy (Michelle Hooker) had a 6-month love affair with one of the activists. The source for this account can be found at www.mcspotlight.org/case/trial/story.html.

gender, religious conversion, and ethnic assimilation. Classical mythology, literature, fairy stories, and films thrive on mimicry episodes. Yet these acts are not theorized and examined as instances of a generalized sui generis behavior worth studying as such, as, for instance, cooperation is. The recognition of mimicry as a social phenomenon shows some sign of life in semiotics (e.g., Nöth, 1990; Maran, 2001). Umberto Eco defined semiotics as the study of "everything that can be used in order to lie"; "a 'theory of the lie'"—he added—"should be taken as a pretty comprehensive program for a general semiotics" (Eco, 1979, p. 7). This program, however, has remained *lettera morta*, and semiotics is now an atheoretical field that is strong on elaborate conceptualizations but weak on behavioral models.

An exception is represented by the literature in economics that originates from signaling theory, variously identified as "asymmetric information," "screening," or "incentive compatibility." It deals with the cost-benefit differential conditions that can make it impossible or nearly so for a dishonest signaler to cheat, and with the policies a rational receiver needs to implement to make sure that these conditions obtain. Although the term "mimicry" has not been used—a more common term is "dishonest signals"—and the range covered by this literature concerns forms of deception other than mimicry, several applications can be effortlessly classified as a study of the conditions under which mimicry can, and above all *cannot* occur. Unlike the literature in semiotics, the behavioral fundamentals are here clear, robust, and generalizable.

Still, much remains to be done. For instance, the standard version of the theory includes only the production costs of signals rather than also the display and protection costs of them, which are so often involved in mimicry and its detection. It also does not cover identity signaling (and a consequence of this is that most economic models of reputation are oblivious to the mimicry threat and treat re-identification as unproblematic). These issues are only briefly addressed in this essay. As for the empirical side, the economic applications confine themselves, naturally enough, mostly to business-related instances, whereas mimicry, as my examples suggest, occurs in a much broader range of domains. The theory's potential for novel applications to these other domains is vast, but in order to be effectively developed, it needs, as I argue, to be supported both by semiotic distinctions and by a taxonomy of mimicry systems, of the kind summarily sketched in this essay.

Finally, the economics literature has focused more on the honest rather than on the dishonest signals, and on separating rather than weaker equi-

libria.[15] As a result, mimics and the myriad strategies that they employ, while understood in their broad outline, have remained in the shadow, for if the incentives work against them, mimics do not have a chance and we do not need to bother with them. Yet, when one leaves the abstractions of modeling and delves into the wealth of empirical instances, one discovers that in real life the separating equilibria that screen mimicry out entirely, or nearly so, are not so frequent or stable. Often mimics succeed, and even if they fail, they can do so in interesting ways. Mimics' strategies are thus well worth a systematic empirical examination that compares them across different domains, and this can have an effect on the theory itself. For in so doing we are most likely to uncover other social and psychological mechanisms that govern the acts of the protagonists, and which cannot be subsumed by rationality alone, but to be properly understood require theoretical injections other than signaling theory. As was the case in the recent past for the study of trust, which was also an undertheorized and underresearched notion until the 1980s, the study of mimicry has the capacity to develop into a proper interdisciplinary field, and my prediction is that it will.[16]

Acknowledgments

The theoretical framework presented in this essay was developed in collaboration with my friend and colleague Michael Bacharach, who died in August 2002. He never read the essay, and he is thus not responsible for the form in which our ideas are presented here. I gratefully acknowledge a British Academy Readership, which supported my work.

15. In an essay on cheating signals in the animal behavior literature, Hasson reports a similar bias toward an honest signal. His "survey of the definition of signals or communication shows ... that many do not allow for any kind of cheating" (1994, p. 223).

16. See comments on this chapter by Litman (vol. 2, ch. 19.3, p. 368) and Seabright (vol. 2, ch. 19.10, p. 398). ED.