

resources, sharecropping, efficiency wages, and discrimination, even while looking more deeply into the nature of information and risk in insurance and financial markets.

Working simultaneously on theoretical problems and on applied issues led Stiglitz to his breakthrough insight regarding the importance for economics of *imperfect information*, a term Stiglitz first used in two 1976 papers. As discussed by Stiglitz and Andrew Weiss in their 1981 article, this notion, sometimes denoted *asymmetric information*, refers to situations in which some participants in a market know more than others and can use their informational advantage to affect the efficiency of market outcomes. This informational advantage is often held by “agents” who hope to contract with “principals” controlling scarce resources—for example, applicants seeking jobs from potential employers and prospective borrowers seeking credit from lenders. Principals can then often best achieve their goals by supplying fewer loans (or fewer jobs) than are demanded. As Stiglitz argued in his 1987 article, prices are not in these cases permitted to rise to levels at which demand equals supply; indeed, in these models the quality of the commodity traded (the productivity of workers or default level of borrowers) depends on price. Their profits are often largest at a “rationing equilibrium”—a price wherein the quantity that agents seek to buy (or sell) exceeds the quantity that the principal supplies (or buys). At rationing equilibria, market forces will generally not equalize supply and demand.

These insights generated what Stiglitz calls the *economics of information*, which explores the consequences of information asymmetries in credit, financial, product, and labor market. New information-based paradigms have been developed in development economics, trade theory, and other fields; and information-based models have been central to the emergence of the microfoundational “New Keynesian” (named for the preeminent economist John Maynard Keynes) approach to macroeconomics.

The economics of information suggests that selective government interventions and/or nonmarket institutions can enhance growth and reduce poverty. Stiglitz became increasingly involved in the policy implications of these ideas, triggered by an extended period in public service. He served on the Clinton administration’s Council of Economic Advisers from 1993 to 1997, the last two years as chair. He then became chief economist and senior vice-president of the World Bank from 1997 to 2000. While at the World Bank, he publicly challenged the so-called Washington Consensus, that is, the then-prevailing practice at the World Bank and International Monetary Fund of using full-information, competitive-economy models to understand global and developing-country economic outcomes. In Stiglitz’s view, more realistic models would show that global economic forces have often jeopardized

viable local governmental and institutional economic arrangements. Amid considerable controversy, as Ha-Joon Chang notes in his 2001 book, the World Bank made some changes in its modeling and policy approaches. Stiglitz tells his side of the story in his bestselling 2002 book, *Globalization and Its Discontents*.

Two articles summarizing Stiglitz’s work in light of his Nobel prize are Chang’s (2002) and J. Barkley Rosser’s (2003); Stiglitz’s own summary of his ideas and their implications for the change in the economics paradigm appears in his 2003 and 2004 articles.

**SEE ALSO** *Discrimination; Economics, New Keynesian; Economics, Nobel Prize in; Information, Asymmetric; Information, Economics of; Insurance; International Monetary Fund; Natural Resources, Nonrenewable; Risk; Sharecropping; Structural Adjustment; Uncertainty; Wages; Washington Consensus; World Bank, The*

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## STIGMA

Although the term originally described a mark made through branding to designate a person of undesirable moral character, *stigma* was introduced into the psychological literature by Erving Goffman in 1963 to refer more broadly to any attribute or characteristic that makes its

bearer tainted or devalued by others. Jennifer Crocker, Brenda Major, and Claude M. Steele (1998) refined the definition, noting that stigmatized characteristics convey “a social identity that is devalued in a particular social context” (p. 505). This definition highlights two important properties of stigma. The first is that the stigmatized characteristic is attributed meaning beyond the characteristic itself—it is often assumed to be broadly reflective of the person or his or her identity. The second property is that personal characteristics lead to stigma through their context-specific symbolic value, rather than through inherent properties of their own. Wrinkles and white hair, for example, may be revered as a sign of wisdom and experience when it comes to relationship advice, but may lead to undeserved assumptions of incompetence when it comes to navigating computers.

Goffman distinguished among three types of stigmas: tribal stigmas (e.g., racial, ethnic stigmas), blemishes of individual character (e.g., drug addict, criminal offender), and abominations of the body (e.g., weight, body scars). Despite enjoying wide recognition, Goffman’s typological approach has given way to a more dimensional approach to stigma, one relying more on general principles that help understand the underlying differences and commonalities among stigmas. In 1984 Edward E. Jones and colleagues proposed six such dimensions: degree of concealability, degree of change over time, degree of disruptiveness, how aesthetic others find the attribute, how the stigma originates, and degree of peril the stigma poses.

### IMPACT OF STIGMA ON ITS TARGETS

The psychological impact of these dimensions, particularly concealability and responsibility, has been a topic of intense study. Research on the dimension of responsibility in particular has shed light on the *internalization hypothesis*—the notion that people internalize society’s negative ascriptions about their group, with negative consequences for their self-concept. Early studies included Kenneth B. and Mamie P. Clark’s 1947 doll study, which found that young African American children preferred to play with white dolls rather than black dolls. Although the children’s responses may have stemmed from their efforts to please the researchers or an unfamiliarity with black dolls, the findings were widely interpreted as evidence for the deleterious effects of stigma on the self-concept.

This interpretation remains popular despite empirical evidence to the contrary. Research consistently shows that the self-esteem of African Americans is, on average, higher than the self-esteem of U.S. whites. In 1989 Crocker and Major proposed that stigmatization may actually protect self-esteem, such that when people know they are the targets of stigma, negative outcomes can be attributed to the

prejudice of others rather than to one’s talents or efforts (thereby protecting self-esteem). Nevertheless, attributions to prejudice are protective only to the extent that people believe that they are not to blame or that the prejudice is undeserved. For example, overweight women, when rejected on the basis of their weight, nevertheless show a drop in self-esteem, presumably because they endorse the notion that weight is controllable and a matter of willpower. Thus perceptions of responsibility/controllability may influence the impact of stigma on the self. A thus-far unresolved puzzle is whether and how stigma affects the self-esteem of Asian Americans, Latinos, and Native Americans in the United States, who show lower self-esteem than U.S. whites.

Importantly, one does not need to believe or internalize relevant stereotypes in order for them to have adverse consequences. This is evident from research on *stereotype threat*, which shows that performance (e.g., on tests) is affected following the mere awareness that one might be viewed or judged according to a stereotype. For example, whereas women underperform relative to men in a math task when reminded about gender differences, performance differences disappear when the same task is framed as gender-neutral—that is, when the threat is removed. These data, also replicated among stigmatized minorities in the academic domain, are powerful demonstrations against nativist views of performance differences. Subsequent research shows that the cognitive and emotional disruption of having to contend with stereotypes plays a critical role in explaining group-based performance differences where stereotypes are involved.

Individuals may use a variety of strategies to cope with the threat of stigmatization. Behaviorally, people may avoid situations or contexts in which a particular identity is devalued. Psychologically, individuals may disengage, and ultimately disidentify, from the domain in which their group is stigmatized. Proactive strategies may include efforts to disprove the stereotype, as well as social activism. Thus, people are not merely passive recipients of social judgments and evaluations, but rather they psychologically construe and physically shape their social worlds to actively cope with the problem of stigma.

### WHAT LEADS PEOPLE TO STIGMATIZE OTHERS?

Approaches to stigmatization from the perceiver’s perspective have a longer history and fall into two broad approaches: motivational and cognitive. They both encompass stereotypes, prejudice, and discrimination, terms that roughly correspond respectively to beliefs, attitudes, and behavior. The cognitive approach conceptualizes stigmatization as a by-product of human information-processing biases. The basis for this approach is that people naturally

use schemas, or mental categories, to reduce the potentially limitless number of stimuli in the world into more manageable groupings. Schemas provide not only an organizing principle to help individuals navigate the world, but also a way for people to “fill in the blanks” as needed: A person assumes a new chair will have the properties to support his or her weight, even though the person has never sat on it. According to the cognitive approach, similar processes apply when a person stigmatizes others: A person may assume, for example, that a new female acquaintance cannot read a map though the former has no experience or information on this woman’s map skills. Despite being unfair or even harmful to the perceived (by eliciting stereotype threat, for example), these cognitive processes perpetuate stigma because they confer to the perceiver the benefit of having to use relatively few mental resources. Further, some mental associations may be relatively automatic, that is, outside of awareness, so that even people who are motivated to be egalitarian and sincerely believe they are not prejudiced can stigmatize others unwittingly.

By contrast, the central idea behind the motivational approach is that people stigmatize others to feel better about themselves. Research shows that individuals receiving negative feedback about themselves are more likely to discriminate against stigmatizable others, and that this restores self-esteem. Existentially oriented work proposes that people use symbolic means, including a deep investment in cultural or societal ideals, to transcend death. Thus, when reminded of their mortality, people are more likely to be less tolerant of others who subscribe to different worldviews (e.g., religion, political orientations). Newer views suggest that specific intergroup attitudes and behavior depend on the amount of intergroup competition as well as the group’s perceived status. A high-status group that one competes for resources with, for example, tends to be viewed as competent and cold, eliciting envy. By contrast, a low-status group that does not represent a competitive threat tends to be seen as incompetent and warm, eliciting pity. Thus the field is moving toward identifying specific emotions and attitudes associated with different manifestations of stigma. Together with an increasing volume of research identifying processes related to being the target of stigma, the field is moving toward a more precise, balanced science.

**SEE ALSO** *Clark, Kenneth B.; Discrimination; Goffman, Erving; Prejudice; Racism; Stereotype Threat; Stereotypes*

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## **STIMULUS, UNCONDITIONED**

**SEE** *Classical Conditioning*.

## **STOCHASTIC FRONTIER ANALYSIS**

*Stochastic frontier analysis* (SFA) refers to a body of statistical analysis techniques used to estimate production or cost functions in economics, while explicitly accounting for the existence of firm inefficiency. The operative word in this definition is *inefficiency*, which implies producers may behave suboptimally in their decisions to maximize or minimize some objective function (e.g., profits, production, revenue, or costs). The intellectual underpinnings of inefficiency in economics can be traced to the writings of John Hicks (1938), who argued that monopolists possess motivations other than those of pure profit maximization; these motivations may lead to suboptimal production. (See Kumbhakar and Lovell [2000] for other rationalizations for inefficiency in equilibrium and a discussion of its intellectual underpinnings.)

The empirical departure point for SFA is the production frontier model, originally formulated by Aigner,