‘TESTS TELL’: CONSTITUTIVE LEGITIMACY AND CONSUMER ACCEPTANCE OF THE AUTOMOBILE: 1895–1912

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ABSTRACT

Constitutive legitimacy can be created through evangelical appeals, the efforts of social movement organizations, the enactment of laws that authorize new products, and advertising by firms. This paper investigates these parallel routes to the legitimacy of the car in the early American automobile industry. The results show that evangelical appeals in the form of reliability contests organized in a focal state and social movement organizations in the shape of automobile clubs significantly increased automobile sales in the focal state. The positive effects of reliability contests on automobile sales increased with the number of automobile clubs. However, the effects of auto clubs and reliability contests declined as advertising by firms grew, and fell with the passage of time since legislation authorizing the car in the focal state. Taken together, these results suggest complex interdependencies among the parallel routes to constitutive legitimacy in the case of new industries.
INTRODUCTION

A common proposition in organizational theory is that new industries based on embody unfamiliar and strange products, and are sources of uncertainty for consumers, potential employees, financiers and governmental authorities (Stinchcombe, 1965; Meyer & Rowan, 1977; Aldrich, 1999). New industries flourish when they possess constitutive legitimacy, that is, they become understood and taken-for-granted by consumers, investors, and potential employees (Carroll & Hannan, 2000; Baum & Powell, 1995; Zucker, 1983). A key issue in organizational theory centers around the sources of constitutive legitimacy.

Organizational ecologists have proposed that new industries become taken-for-granted as the number of organizations in the industry (density) increases until a point, after which, growing density unleashes competition. An impressive number of studies have shown an inverted U-shaped relationship between population density and foundings, and a U-shaped relationship between density and mortality (see: Hannan & Freeman, 1989; Carroll & Hannan, 2000 for a review). Although the density-dependence formulation is exceptionally useful for its simplicity and generality, it looks at the intermediate outcomes such as foundings and failures rather than direct outcomes such as consumer acceptance and/or acceptance by financiers. Moreover, it implies that constitutive legitimacy is an automatic positive spill-over that arises as managers of firms go about the business of building and prolonging their enterprises.

However, there are many other parallel routes to constitutive legitimacy. Thus, new industries can secure constitutive legitimacy through an institutional project in which evangelists justify the product, and social structures exist to mobilize participation of actors (DiMaggio, 1988; Suchman, 1995; Carroll & Hannan, 2000; Rao, Morrill & Zald, 2000; Swaminthan & Wade, 2000). For example, consumer concerns about the morality of pricing lives impeded the early growth of the life insurance industry until industry activists undertook a publicity campaign that framed the purchase of life insurance as a morally responsible and prudent act (Zelizer, 1979). For instance, the patronage of hobbyists who assembled kit computers was crucial to the acceptance of the personal computers, and clubs where hobbyists could exchange information spread awareness of personal computers. In a related vein, other writers suggest that laws authorizing the use of a product and stipulating the conditions of its use not only have a facilitative effect but reflect understandings of the product (Edelman & Suchman, 1997). For instance, the sperm banking industry became unquestioned as family laws legally separating the donor and the mother became enacted and regulations authorizing tissue banking became codified.
Furthermore, new industries can be legitimated by the mass media through the medium of advertising. In this case, firm-level activity produces a positive externality in the shape of a legitimacy for the industry. Finally, new industries can also be legitimated through trade associations and professional societies. For example, the Harry Benjamin International Gender Dysphoria Association, a society of gender-reassignment specialists, played a significant role in establishing worldwide standards and creating the gender reassignment industry.

No one study investigates the roles of evangelism, mobilizing structures, law, advertising, and density dependence as sources of constitutive legitimacy. Ingram and Clay (2000) provide a helpful point of departure when they argue that institutional forms can be categorized into a two-by-two matrix with the public-private dimension on one side, and the centralized-decentralized dimension on the other side.

The resultant four quadrants accommodate the parallel sources of constitutive legitimacy. Thus, laws are in the public-centralized quadrant, evangelism and mobilizing structures are in the public-decentralized quadrant, advertising and density-dependence are in the private decentralized quadrant, and trade association activity could be situated in the private-centralized quadrant. There may be complex interdependencies among these parallel routes; thus, the effects of advocacy by enthusiasts in the public-decentralized quadrant may be modified by advertising and law.

This study seeks to uncover the role of evangelism, mobilizing structures, laws, and advertising on the constitutive legitimacy of the car as measured by car sales in the early American automobile industry. At its birth in 1895, with the advent of the Duryea Car Company, the automobile industry lacked constitutive legitimacy. It was unclear if the car was a reliable means of transportation. Observers indicate that the automobile was the target of jokes and derision. The automobile gained acceptance through mobilizing structures in the shape of automobile clubs peopled by motor car enthusiasts. These clubs lobbied for laws authorizing the use of the car, and also evangelized on behalf of the car. Evangelism took the shape of auto clubs organizing reliability contests to demonstrate the dependability of the car. Cars likely to be bought by consumers were pitted against each other and evaluated in endurance, hill climbing, and fuel economy runs. Reliability contests were ‘demonstration events’ that blended the practice of racing with the logic of product testing. Each contest was widely viewed as a ‘test’ that ‘told’ audiences that the automobile was reliable. Additionally, auto clubs also played an important role in lobbying state governments for laws licensing motor car usage, and these laws also codified understanding of the car. Auto producers also advertised
their cars, and grew in numbers. However, there was no consequential trade association activity of note in the early history of the auto industry.

We study the industry from 1895 until 1912 because the first reliability contest started in 1895, and by 1912, reliability contests were discontinued because by then the automobile was no longer an artifact but a social fact. Soon, thereafter, Henry Ford initiated the mass production of cars in 1912.

NEW INDUSTRIES AND CONSTITUTIVE LEGITIMACY: PARALLEL ROUTES

Several writers have suggested that the formation of new industries resembles a social movement because activists seek to mobilize support for their cause and evangelize (Fligstein, 1996; Rao, Morrill & Zald, 2000; Carroll & Hannan, 2000). Social movements underlie the creation of new industries because constitutive legitimacy is a public good, and the emergence of collective action hinges on political opportunity, mobilizing structures, and framing processes.

New industries may be legitimated by conflict-oriented social movements when political threats are salient, and by consensual social movements when political opportunity is high (Rao, Morrill & Zald, 2000). Conflict-oriented social movements are likely when a new industry faces opposition from vested interests or is created in explicit opposition to vested interests. Organizers of the new industry who have little power and are excluded from existing social structures (McCarthy & Zald, 1977) challenge vested interests by framing the antagonist in negative terms, and their own industry in positive terms. For example, the craft-brewing industry arose in opposition to industrial brewers, and activists organized fairs to mobilize interest in craft-brewing, framed industrial brewers as poor-quality producers, and depicted craft brewing as authentic, traditional, and artisanal (Carroll & Swaminthan, 2000). After the craft-brewing industry was promoted by third parties, producers exploited their rhetoric to launch advertising campaigns.

Social movements may also be relevant when there are minimal political threats facing the new industry. Consensus-oriented social movements arise when there is a failure of market processes and normal market incentives are inadequate. For example, although technical standards benefit both producers and consumers, neither a coalition of producers nor a coalition of consumers took the lead in creating standard-setting organizations in the United States. Activists such as James Chase and Frederick Schlink (who were employees of the National Bureau of Standards) railed against the evils of wasteful variety, preached the virtues of standards, recruited converts from the ranks of private corporations, and set up standard-setting bodies.
Mobilizing Structures

Institutional activists play a key role in mobilizing legitimacy and other resources in social movements (McCarthy & Zald, 1977). Some writers suggest that institutional activists can exclude others from the psychological benefit of contributing to a large and important cause and therefore, overcome the free-riding problem (Moe, 1980). Other writers propose that activism is not the product of rational calculation and is instead, driven by personal pride, community affiliations, and inter-group rivalry (Knight & Ensminger, 1998; Ingram & Inman, 1996).

In new industries, activists may be executives in producing firms, experts in trade associations or professional societies, or clubs of enthusiastic consumers. Executives of producing firms can play a key role in building the constitutive legitimacy of new industries: for example, Steve Jobs played a crucial role in the development of the personal computer industry. Similarly, trade association personnel or members of professional societies can play an important role in establishing the new industry (Aldrich, 1999). For example, the Harry Benjamin International Gender Dysphoria Association, a society of gender-reassignment specialists, played a significant role in establishing worldwide standards and creating the gender reassignment industry. Consumer activists may also organize campaigns to improve the cognitive status of new industries. For instance, bicycle clubs peopled by cycling enthusiasts played a more important role in establishing the bicycle as source of health than individual producers who bankrolled campaigns to advertise the bicycle as a valued product (Smith, 1972).

Activists gain access to the political system and mobilize resources through formal and informal mobilizing structures. Such structures include formal social movement organizations or SMOs (McCarthy & Zald, 1977), extra-movement structures such as work and neighborhood organizations, and informal friendship networks (Tilly, 1978). In general, committed activists adhering to a cause are effective when they are formally organized in SMOs. SMOs mobilize their constituency with a view to obtaining a collective good or preventing a collective ill, and may take the form of local volunteer groups as in grassroots movements at one extreme (Lofland, 1985), or may be manifested as local professional organizations such as public interest groups (McCarthy, 1996). These local organizations may be connected to each other through informal linkages, formal committees, or more enduring federal structures that mobilize diffuse networks of supporters (Staggenborg, 1991).

The greater the number of SMOs, the easier it is for activists to disseminate information, gain attention, and to recruit other activists (Kriesi, 1996). The sheer density of SMOs enhances constitutive legitimacy for new industries on three counts. First, it promotes face-to-face communication and enables activists to
to develop a sense of collective identity (Staggenborg, 1991). Second, close contact facilitates the exchange of specialized political knowledge necessary to mobilize a group and enables network formation (Klandermans, 1992). Third, an increase in the density of SMOs enables activists to thwart organized opposition in conflict-oriented movements, and to build social consensus when there is a lack of explicit opposition (McAdam, McCarthy & Zald, 1996). The larger the number of SMOs, the higher is their ability to enhance consumer awareness and acceptance of the new product. As a result, sales of the new product are likely to increase. Therefore:

**H1:** SMOs have a positive effect on sales of the new product.

*Evangelism*

Resources can only be mobilized when activists engage in evangelical “meaning-work” wherein they frame an issue, and array events and experiences in cognitive packages (Snow, Rochford, Worden & Benford, 1986). Just as a picture frames our understanding, evangelical claims made by activists also frame the new product as valid, useful, and appropriate. Evangelical claims become potent when they are premised on events that can be construed as evidence by audiences, and which reflect prevalent social beliefs (Snow & Benford, 1992, p. 150)

Evangelism can subsume a variety of strategies (Suchman, 1995). At one extreme, activists can rely on ‘demonstration events’ to communicate the viability and dependability of the radical product underlying the new industry. For example, bicycle clubs composed of enthusiasts organized races to establish the bicycle as a font of health and vitality (Smith, 1972). In some cases, activists may launch publicity campaigns: in the life insurance industry, activists portrayed the purchase of a life insurance policy as a responsible act to defuse opposition to the idea of pricing lives (Zelizer, 1979). Activists may also formulate performance measures to legitimate new industries (Meyer, 1994). For instance, in 1991 the National Committee on Quality Assurance, a group consisting of producer and consumer representatives, defined sixty performance measures and integrated them into a ‘report card’ for managed-care organizations (Cerna, 1993). These report cards were plausible claims of quality that allowed individual HMO’s to stand out, thereby allowing the industry to legitimate itself as a customer-centered and cost-focused innovation. Activists may also rely on scientific research to establish the viability of new industries. Van de Ven and Garud (1989) document how rival bands of researchers in the cochlear ear implant industry favoring single and multiple channels relied on peer-reviewed articles to show that their technology was better.
Such strategies of evangelism reduce doubts in the eyes of consumers. The greater the evangelism, the more consequential is its priming and framing effects. Evangelical claims such as demonstration events and report cards make the new product ‘available’ to potential consumers (Schudson, 1989), and place a narrative framework that may resonate with the life of the audience. The frequency of evangelical claims is important because audiences make sense of the unfamiliar through cognitive shortcuts such as the availability heuristic in which judgement depends on what comes to mind (Kinder, 1998). Audiences arrive at opinions by averaging across occurrences that are accessible, and in turn, accessibility hinges on frequency (Iyengar & Kinder, 1987). The greater the frequency of evangelical claims such as demonstration events that provide social proof of a new product’s viability, the lower is the uncertainty, and the more favorable are consumer evaluations of the new product, and the higher is consumer acceptance, and sales of the new product. Therefore:

H2: Evangelism has a positive effect on sales of a new product.

The effect of evangelism on sales of a new product is likely to be augmented by the social organization of institutional activists. The greater the number of SMOs, the easier it is for them to mobilize resources to build constitutive legitimacy. The more frequent evangelical appeals are in a focal state, the more primed are audiences of the benefits of the new product, and the lower is their uncertainty. Thus, the strength of activism is likely to magnify the effect of evangelical appeals on consumer acceptance. Therefore:

H3: The SMOs × evangelism interaction has a positive effect on sales of a new product.

Advertising as a Source of Constitutive Legitimacy

A ubiquitous alternative to activism and claim-making by institutional activists is advertising by producers. If evangelism and SMO’s are in the public-decentralized sphere of institutional work, advertising is in the private-decentralized realm. Berger and Luckmann (1966) suggest that new objects can be integrated into the prevalent cultural order through rudimentary ideas purveyed via mass media channels. Sociologists of consumption suggest that mass media advertising exerts powerful effects on the popular understandings of new products and commodities, and connects them to the prevalent cultural order (Schudson, 1989). Advertising primes associations between an object and other products, and thereby, heightens awareness and integrates a new product with the prevalent cultural order (Schudson, 1989; Iyengar & Kinder,
By situating the new product in established genres, advertising makes new products comprehensible and understood by consumers and investors. Although firms undertake advertising primarily to build their reputations and increase demand for their products, there may still be spill-over benefits such as enhanced consumer awareness and knowledge about the product. The literature on pioneer burnout in new industries suggests that pioneers bear the costs of advertising, but the benefits of advertising can be appropriated by other potential founders entering the market later (Mowery & Rosenberg, 1998). The greater the extent of advertising, the more exposed and informed are audiences to the new product. Since advertising increases consumer familiarity and may also reduce questions about the product, the social organization of activists and their evangelism should have less consequential effects on sales. Therefore:

**H4:** Advertising × SMOs interaction has a negative effect on sales of a new product.

**H5:** Advertising × evangelism interaction has a negative effect on sales of a new product.

**Law as a Source of Legitimacy**

Neo-institutional researchers have shown that institutionalization is a temporal process by which understandings of structures, policies, and programs become codified (Meyer & Rowan, 1977, p. 341; Zucker, 1983; Tolbert & Zucker, 1988). An important marker of institutionalization is legal recognition of the new industry (Stinchcombe, 1965). Although legal recognition is commonly viewed as a source of socio-political legitimacy, laws also embody constitutive understandings of a radical new product that become even more codified as time since the enactment of legislation increases (Edelman & Suchman, 1997). Laws authorizing the use of the product and stipulating the conditions of its use have a facilitative effect and reflect understandings of the product. The greater the elapsed time since the enactment of a law authorizing the use of a product, the more taken-for-granted are understandings of the product, and the more likely are they to become the default rules by which consumers and other audiences make sense of the world (Edelman, 2000). If so, the enactment of laws should lead to the substitution of institutional forms of legitimacy such that the public-centralized realm weakens the effects of public-decentralized sources of constitutive legitimacy. The greater the elapsed time since the onset of legal recognition, and the more codified the understandings of the product, the less consequential is the role of activists and evangelism in the accretion of constitutive legitimacy. Therefore:
H6: The time since legal recognition 3 SMOs interaction has a negative effect on sales of a new product.

H7: The time since legal recognition x evangelism interaction has a negative effect on sales of a new product.

AUTO CLUBS, RELIABILITY CONTESTS AND THE LEGITIMACY OF THE AUTO: 1895–1912

These hypotheses were investigated in the early American automobile industry for four reasons. First, the early American automobile industry constituted a radical departure from its precursor, the horse carriage industry. Unlike the horse carriage industry that relied on animal power, automobile firms used steam, gasoline, and electric power to provide customers with horseless carriages. Horse carriage firms were one-man operations, but early automobile firms were assemblers who put together components (Flink, 1970). Above all, the automobile was a radically new artifact that promised to transform the experience of transportation. Second, activists who banded together to establish auto clubs played an important role in promoting a favorable image of the automobile. Third, activists faced a favorable political opportunity structure to organize and make evangelical claims. Finally, activists evangelized by organizing demonstration events in the form of reliability contests (Epstein, 1928; Flink, 1970). Demonstration events were a potent claim-making strategy because they were credible, experiential, and reflected master logics of society. Reliability contests were credible because they were interpreted as evidence by the targets of claim-making. Since they intruded into the daily lives of targets, they derived experiential validation. Reliability contests possessed narrative fidelity to the extent to which they were connected with extant master logics of testing in society.

Some writers trace the origins of the American automobile industry to the Selden two-stroke engine design developed in 1879, to William Morrisons’s electric car of 1892, or to Ransom Olds’s steam vehicle, purportedly sold to an Indian firm in Bombay. However, the first firm to make automobiles was set up by the Duryea brothers in 1895 (Flink, 1970). Some accounts of the automobile industry reduce the birth of the early automobile industry to the question of how gasoline-powered cars began to dominate the industry. Although the technological development of the automobile industry is interesting in its own right, it can deflect attention from the larger question of how the automobile came to be legitimated.

Even though the automobile was a substitute for the horse-drawn carriage, it did not arouse opposition from manufacturers of horse-drawn carriages, livery
stable owners, and horse-drawn vehicle driver associations (Flink, 1970, p. 64). The reason was that prominent makers of horse-drawn carriages (e.g. Studebaker & Flint Wagon) began to produce cars, and owners of livery stables opened garages. Some opposition to the automobile was organized by a handful of vigilante anti-speed organizations in New York and rural states such as Minnesota and Indiana, but it was not persistent, and petered out. Thus, there was substantial political opportunity for activists to evangelize on behalf of the automobile, and such evangelism was necessary because of doubts about the automobile.

**Consumer Uncertainty About the Automobile**

A problem facing the new industry was consumer uncertainty. At the origins of the automobile industry, the automobile was an unfamiliar product to consumers and its reliability was suspect. There was no standardized vocabulary to refer to the car and it was variously called a gasocar, a motocle, a motorcar, a motor-car, or a horseless carriage.

Many of the early manufacturers were remotely connected to making cars. For example, the Smith Automobile Company of Topeka, Kansas, was in the business of making hernia trusses before taking up automobile manufacturing. Almost equally offbeat was the origin of the renowned Pierce-Arrow. George N. Pierce began as a manufacturer of bird cages, which led him to the manufacture of spokes for bicycle wheels. This was followed by the production of complete bicycles and finally, automobiles (Volti, 1996).

Given the unorthodox origins of entrepreneurs, it is not surprising that many cars were unable to complete a drive successfully and had to be hauled back by a team of horses. Quite a few vehicles were designed with whip sockets and harness hitch (Epstein, 1928). Consumers were hesitant to purchase a car given uncertainty about whether it was a superior alternative to the horse, and a dependable means of transportation (Epstein, 1928, pp. 89–92).

**Failure of Collective Action by Producers**

Firms within the new industry could not successfully band together to legitimate the automobile. In the first four years, there were no trade associations to advance the cause of the automobile. The National Association of Automobile Manufacturers was established in 1900 in a bid to assure product quality, but it was superseded by the Association of Licensed Automobile Manufacturers (ALAM), which was formed in 1903. ALAM was a trade association formed to license the Selden patent and was set up ostensibly to prevent the incursion of imitators. But the Selden patent was widely disregarded, and due to internal divisions, ALAM was unable to secure quality by enforcing its threat of
litigation. A rival association called the American Motor Car Manufacturer’s Association (AMCMA) was established in 1905, and also proved to be an ineffective mechanism of collective action. Both trade associations disintegrated during the period 1909–1911, as a result of legal battles. Since there were no effective trade associations and the Federal government was inactive, it was not possible to formulate a national license and registration policy to defuse opposition to the car from anti-speeding interests.

Lack of Professional Infrastructures
Professional societies did little to legitimize the new industry. The Society of Automobile Engineers (SAE) began in 1905 with a small group of journalists and automobile engineers, and established a standards committee by 1910. In 1910, the SAE diagnosed the lack of inter-company standardization of components as a major cause of production problems and expenses, and initiated a program that eventually resulted (in 1921) in the formation of 224 standards.

Professionals also did not play an important role in training personnel. In the early years of the industry, some makers of high-priced cars trained drivers at special schools (e.g. Packard and Locomobile). Nearly a decade after the appearance of the first automobile firm between 1903 and 1904, the YMCA instituted courses for drivers, and advanced training for engineers and draftsmen. In 1905, the New York School of Automobile Engineers was established by a professor of engineering from Columbia, and other affiliates arose in a few large cities to disseminate mechanical expertise relevant to the automobile. However, the professionalization of automobile engineering really began when the SAE began a large training effort after 1912.

Automobile Clubs as SMOs
It was in this context that automobile fans banded together into automobile clubs, and served as the automobiling movement which sought to promote the car, and to lobby for better roads. Flink (1970, p. 144) notes that the “automobile club became the most important institution championing the diffusion of the automobile in the United States. Voluntary associations of motorists propagandized to encourage a favorable image of the automobile and automobilists.”

The American Motor League, set up in 1895, was the first attempt to organize a national-level organization, but it foundered for lack of support. By contrast, local clubs of motor car enthusiasts organized in cities and towns flourished. By 1901, 22 local clubs had mushroomed in different cities such as Boston, Newark and Chicago. By 1904, it was “as difficult to find a number of motorists who have not formed a club, as it is to find an individual motorist who is not a member of some such body” (Horseless Age, February 17, 1904, pp. 196–197).
This surge of automobile clubs also induced attempts to form national associations. As early as 1902, there were two rival attempts to form national organizations. The American Motor League (revived by its 1895 organizers), led by Charles Duryea, sought to enlist individual motorists as members and aimed to establish branches. By contrast, the American Automobile Association (AAA) began as an association of local clubs, and after some early disagreements with the New York clubs, emerged as the primary representative of car owners in America.

By 1910, there were 225 local clubs affiliated with the AAA. The local clubs promoted the image of the automobile in numerous ways. Some clubs organized tours for underprivileged children to dissuade them from throwing stones on passing cars in places such as Chicago and New York. Automobile clubs supported state ordinances requiring tags and mandating speed limits to prevent a maze of city-specific regulations and to defuse opposition to the car. More importantly, auto clubs codified rules for reliability races and provided the personnel for scheduling and supervising these contests.

Attempts to demonstrate the capabilities of the automobile began in 1895 when the first firm to produce cars was established by the Duryeas. The first contest was the Times-Herald race held on Thanksgiving Day in 1895. The organizers stated they were influenced by the “desire to promote, encourage and stimulate the invention, development and perfection and general adoption of motor vehicles” (quoted in Thomas, 1977, p. 21). 3 Five of the eleven entrants participated, and only two vehicles were able to complete the race. The first prize of $10,000 was won by a Duryea car powered by gasoline, which had a winning speed of eight miles an hour. The Times-Herald report the next day stated that the race had been run in 30-degree temperatures “through deep snow and along ruts that would have tried horses to the utmost,” and implied that automobiles were practical.

Shortly thereafter, Cosmopolitan magazine offered a prize of $3,000 and held a contest on May 30, 1896 that was won by a Duryea. Subsequently, the Rhode Island State Fair Association organized a competition and offered $5,000 in prize money; this was won by an electric car. The Riker Electric car won the race, but spectators found the contest to be so dull that they originated the cry “get a horse” (Flink, 1970, p. 42). Local automobile clubs quickly jumped into the fray to sponsor reliability contests, and soon newspapers were reduced to the role of covering races rather than organizing them.

Reliability runs consisted of hill-climbing, endurance, and on occasion, fuel economy runs. These runs featured cars that were likely to be used by ordinary consumers. A writer commented about the Glidden Tour, a reliability contest, saying that it had “proved the automobile is now almost foolproof. It has proved
that American cars are durable and efficient . . . it has strengthened our belief in the permanence of the motor car” (*Horseless Age*, July 26, 1905, p. 153, italics mine). If reliability contests established the ordinary motor car likely to be used by consumers as a viable mechanism, speed contests included featured specialized monstrosities unlikely ever to be bought by consumers. Beach, track and road races that “placed primary emphasis on speed were more important for their contribution to automotive technology as tests for weaknesses in design than as publicity for the motor vehicle” (Flink, 1970, p. 42).

Firms had incentives to enter reliability contests because winning firms reaped substantial publicity due to press coverage, and proclaimed these victories in their advertising campaigns. Losers were not penalized by negative publicity, and could always enter another competition. Manufacturers sponsored cars directly in these contests. A few contests (especially the Glidden tour) stipulated that cars were to be driven by their owners; however, auto firms circumvented this because any executive could drive a car himself (Flink, 1970, p. 41).

Automobile producers could not organize reliability contests and simultaneously enter their own cars because of conflicts of interest. If producers had sponsored a contest and entered their own cars, other producers would have been less willing to participate in the contest. A focal producer had little incentive to publicize winning a race organized by itself. Rather, automobile producers had incentives to enter cars in reliability contests organized by third parties, and to win them.

Automobile clubs played an important role in organizing reliability contests. As early as 1901, the Automobile Association of America in New York City formulated a set of racing rules and assisted local auto clubs in scheduling contests. Local clubs were minimalistic organizations composed of motor car enthusiasts and car owners drawn from the community. Since club members were typically car-owning enthusiasts and lead users, club involvement enabled members to construct an identity built around a new consumer role (Charles, 1993). As community organizations, auto clubs were forums for the exchange of information about cars, lobbying devices to get good roads and speed laws, and sought to promote the acceptance of the car within the community by organizing reliability contests. Moreover, since reliability contests were spectacles that aroused public interest, it was also a useful mechanism for clubs to boost membership. Activities such as lobbying for roads and organizing reliability contests enabled club members to feel that they were contributing to the community and to derive a sense of pride and collective identity. Thus, automobile clubs were SMOs who overcame collective action problems to organize reliability contests.
Reliability Contests as Evangelism

Each reliability race was a claim that the car was reliable and safe. Reliability contests were potent claims because they possessed empirical credibility, experiential commensurability, and narrative fidelity. Reliability contests were credible because each race was an event that could be interpreted as evidence of the dependability of cars by the public. Since reliability contests were events that could easily be watched by the public, they possessed experiential commensurability. Finally, reliability contests had narrative fidelity because they combined the logic of testing with the practice of racing. Swidler (1986) suggests that entrepreneurs treat pre-existing cultural resources as items in a menu and blend them creatively to fashion new repertoires. Organizers of automobile clubs borrowed the practice of racing from the bicycle industry, and blended it with the nascent logic of testing to fashion a potent strategy of claim-making. Individual contests generated winners who quickly acquired a reputation for reliability, but also strengthened the claim of the automobile as a safe and reliable device.

Bicycle racing appeared in 1878, soon after the introduction of the bicycle in America. Early bicycle races were road races that sprang out of cycling tours conducted by bicycle clubs, and almost every city with pretensions of being important had a road race (Smith, 1972, p. 144). Participants were weekend cyclists of varying ability, and were ‘handicapped’ by clubs such as the League of American Wheelmen or the Associated Cycling Clubs. The prize went to the man who finished first, and newspapers featured extensive coverage of many races, especially prominent ones such as the Pullman Road Race held in Chicago, which originated in 1883. Since it was difficult to tell who was winning a road race, track races first appeared in 1883. As cycle manufacturers realized the publicity that accrued to them from winning, they began to attract the best racers, and such “maker’s amateurs” made track racing a contest among manufacturers (Smith, 1972, pp. 149–150). Firms that won bicycle races advertised victories as signals of quality.2 Thus, the prevalent practice of bicycle races being organized by clubs served as a building block for car enthusiasts and automobile clubs as they grappled with the problem of product quality. Additionally, numerous car races organized in France also increased the attractiveness of races as assessment mechanisms (Epstein, 1928).

Concurrently, a nascent logic of testing was also becoming established with the rise of standards and testing bodies that were extensions of trade associations and professional societies seeking to promulgate common metrics to assist business organizations.3 In 1894, an association of insurance underwriters (Underwriters Laboratory) received a charter to certify wires and light fixtures as fire-resistant in order to build insurable real estate. Other trade associations
established standard nomenclatures and performance specifications in the wool blanket and laundry industries. Materials'-testing experts promulgated standards for paint, and electrical engineers developed standards for electrical components for large business enterprises (Chase & Schlink, 1928). The testing and standards ideas received encouragement from the state when the National Bureau of Standards was founded in 1901, and soon instituted annual national conferences on weights and measures. Later, a ‘Journal of Weights and Measures’ was established in 1908 for the ‘benefit of Dealers, Sealers and the Purchasing Public’.

Car enthusiasts in automobile clubs found it easy to blend the material practice of racing with the logic of testing. Reliability contests became ‘tests’ that ‘told’ consumers of the quality of cars; wins in these contests were small cues, which were embellished by the media and through advertising by firms, into a ‘story’ of quality. Buick, after winning several contests, proclaimed “Tests tell – Could you ask for more convincing evidence?” Thus, advertising campaigns planned by automobile producers were mechanisms to inform the public of their winning record in tests (Epstein, 1928).

As the public watched reliability contests and learned about them through the media, knowledge of the automobile per se diffused across different sections of American society. Specialized trade journals arose to disseminate information about the automobile, and many of them dedicated resources to the coverage of contests. By 1909, the novelty of the automobile had largely worn off. Even in the prestigious Glidden tour, the number of entrants had dropped to 13 in 1909, and after 1912, the Glidden Tour was discontinued. Soon, the Ford Motor Company stopped participating in reliability contests because they were deemed to be unnecessary. After 1912, reliability contests ended, but speed contests continued to flourish because they had become a sport (Epstein, 1928).

Advertising

If reliability contests organized mainly by auto clubs played an important role in shaping the understanding of the automobile, producers also sought to purvey an image of cars through advertising. The popular press and trade journals accepted advertisements by producers who touted their own products. For example, the Peerless Company advertised its cars as “rapid and powerful hill climbers.” Similarly, St. Louis Motor Carriage Company touted its cars as “rigs that run.” Oldsmobile grandly proclaimed that the Olds “runs everywhere” and Cadillac coined the slogan that “when you buy a Cadillac you buy a round trip” (Thomas, 1977, p. 47). Such advertisements may have reinforced positive evaluations of the car.
Legal Authorization by State Governments

Some opposition to the automobile was organized by a few vigilante anti-speed organizations in cities such as New York and in rural states such as Minnesota. Municipal governments wanted to arrest speeders and insisted that each car should have a numbered tag, and also contemplated the passage of city ordinances specifying speed limits. Some local automobile clubs initially challenged these city ordinances, but quickly realized that a maze of municipal regulations could only be checked if there were state-wide rules for registering and licensing automobiles. Although the National Association of Automobile Manufacturers (an abortive trade association), sought to have Federal legislation providing a national license, it made little headway because Congress and the Federal government were apathetic to the automobile until 1909. Indeed, the Federal government was not even a customer of the automobile until 1909 when the War Department and the Post Office began to acquire specialized automobiles (Flink, 1988).

In these circumstances, individual state-level governments were the key actors who conferred recognition on the automobile. New York took the lead in 1901, and required that all cars have a numbered tag and mandated a 20-mph speed limit. By 1903, eight other states had followed, and by 1906, fifteen states required car tags and speed limits of 20 mph.

Thus, the average speed limit in a state was substantially higher than the average speed limit of 5 mph for horseless carriages. By 1910, thirty-six states required motor vehicle registration, and by 1912, forty-three states had motor vehicle registration, where automobiles had to possess a numbered tag. These laws reflected an understanding of the automobile as a convenient and fast method of transportation.

DATA AND METHODS

The window of observation began in 1895, when the industry was born with the Duryea car and the first reliability competition was organized. The window of observation ended in 1912, because after that reliability contests disappeared, even as speed races flourished, and the car was widely assumed to be legitimate (Flink, 1970). It is noteworthy that Henry Ford also commenced mass production of cars in 1912, and 43 states had laws with liberal speed limits.

Dependent Variable

States were defined as the units of analysis because data on the dependent variable, sales of cars, were available at the state level and unavailable at
the municipality level. Additionally, consumers in a focal state faced a homoge-
nous institutional environment because laws which stipulated licensing of drivers
and speed limits were enacted by state authorities rather than by municipalities.
Moreover, clubs in a focal state also tended to work together to lobby for roads
and laws, and reliability contests organized by a club were also publicized by
newspapers. Hence, I constructed a dataset where each observation was a
state-year. The dependent variable, consumer acceptance, was operationalized as
the sales of cars in a focal state. Data on car sales were obtained from the censuses
of various states and from historical statistics of the United States.

Independent Variables
The number of social movement organizations in a focal state was defined as
the number of automobile clubs in the focal state. Data on the number of
automobile clubs was obtained from the American Automobile Association
historical archives, state censuses, Horseless Age, and histories of the automobile
industry. Where data were missing for a year, linear interpolation techniques
were used.

The extent of evangelism was measured through the relative frequency of
reliability contests. Hill-climbing competitions, fuel economy contests, and
endurance runs were treated as reliability competitions because they emphasized
the dependability and durability of cars likely to be bought by ordinary
consumers. Speed contests comprised of road, beach, and speedway races were
excluded because they featured specially-designed cars to test technical ideas
and to shatter speed records. In some cases, they also evoked opposition (Flink,
1970; Thomas, 1977). I focused on in-state reliability contests because they
were proximal events likely to affect consumer uncertainty rather than out-of-
state contests. Evangelism was defined as the proportion of in-state reliability
contests/all in-state contests because it was necessary to capture the relative
frequency of reliability contests vis-à-vis speed contests in a focal state. Thus,
the frequency of reliability contests was divided by the frequency of all contests
(reliability and speed) in a focal state. Data on the exact dates and location of
these contests were gathered from Horseless Age.

Data on the amount of money spent by producers on advertising during
the period 1895–1912 were not available for all producers. Instead, I devised
a proxy that relied on the number of pages of advertising in the premier
national automobile publication, Horseless Age. I restricted myself to
Horseless Age because it was prohibitively costly to gather data from multiple
newspapers in individual states. I inspected each issue for every year from
1895–1912, computed the total number of pages devoted to advertising, and
standardized it by the number of pages in the issue of the magazine. The
total number of advertising pages/total number of pages was computed for each year.

Elapsed time since legal recognition was defined as the number of days since a law was enacted in the focal state that required that cars be registered and conform to a speed limit. Data on the timing of legislation enacted by various states were obtained from the U.S. Department of Commerce, *Highway Statistics, Summary to 1955.*

Additionally, I also included some controls to account for other causal influences on car sales in a focal state. Since affluent and more urbanized states more likely to have a greater number of car buyers, I controlled for state domestic product and urbanization. State gross product was defined as the total value of farm and industrial production, and urbanization was defined as the percentage of urban population. Data were obtained from the ICPSSR databases on historical statistics of the United States. Since the data are decennial in nature, I used linear interpolation to get annual figures. Instead of using 1890, 1900 and 1910 data and then obtaining the interpolated annual values, I used the data from 1790–1930, and then arrived at the interpolated yearly values.

I also used the number of car firms within a focal state as a control variable because the number of producers is likely to impact sales. Density-dependence theorists propose that new industries become taken-for-granted as the number of organizations (density) increases until a point, after which growing density unleashes competition. This formulation suggests that there is an inverted U-shaped relationship between density and growth rates of individual firms in an industry (see Carroll & Hannan, 2000, for a review). However, density dependence has been shown to affect the foundings and growth rates of individual firms, and not industry-level outcomes such as sales. Moreover, the inverted U-shaped density-dependence relationship holds when the complete history of a new industry is observed, and researchers contend that legitimation effects predominate in the early history of any industry (Carroll & Hannan, 2000). Since I was studying an industry-level outcome, especially in an industry’s early history, I included only the first order effect of density as a control. Data on the number of car companies were obtained from Kimes and Clark (1989). All independent variables were lagged by a year. Table 1 shows the descriptive statistics.

Since some of the correlations are between 0.50 and 0.60, I conducted tests to assess the issue of multi-collinearity in exploratory analyses. Belsey, Kuh and Welsch (1980) suggest that if the conditioning number is greater than 100, then estimates are likely to be erroneous. My analysis of collinearity diagnostics indicated that the conditioning number was 67.91. Additionally, Belsey, Kuh and Welsch (1980) propose that the variance inflation factor (VIF)
should not exceed 10, and my analyses revealed a mean VIF of 2.02. Thus, both tests mitigated any concerns about collinearity.

Modeling Strategy

Studies of sales as a dependent variable (conducted principally by marketing researchers) presume that there are diminishing returns to promotional efforts on sales, and a common strategy is to implement a double-log specification, where the dependent and independent variables are log-transformed before estimating regression models (Leefflang, Wittink, Weder & Naert, 2000). Since the effects of SMOs, evangelism, state gross product, urbanization, number of firms and time since legislation are likely to encounter diminishing returns, I used the double-log specification. In order to ensure that state-years where sales or an independent variable with a value of zero were treated as valid observations, I added the value of 1 before log-transforming the data.

Since the data set consisted of state-years, the clustering of observations by states violates the assumption of the independence of observations and also introduces problems of serial correlation. In such cases, ordinary least-squares estimates are biased; I therefore estimated a random effects regression which had the following specification:

\[ Y_{i,t} = \alpha + \beta X_{i,t} + v_i + \epsilon_{i,t} \]

where \( \epsilon_{i,t} \) is the residual, and \( v_i \) is the cluster-specific residual which differs between clusters, but its value for any cluster is constant. I used Maximum-Likelihood Estimation (MLE) techniques to build random-effects models because Generalized Methods of Moments techniques do not consider the predicted group means as one of the moments and therefore do not match observed values.
RESULTS

Table 2 displays the results obtained from the random-effects MLE regression models of car sales. Model 1 is a baseline model. State gross product, time since legislation, and the density of car firms significantly increase car sales. The effects of advertising are not significant. Model 2 includes the effects of SMOs (automobile clubs) and evangelical claims. The effect of time since regulation is now insignificant, and the number of in-state firms has significant and negative effects. Urbanization has significant positive effects. The number of SMOs (auto clubs) significantly increases car sales, and there is support for H1. Evangelism (reliability contests) significantly boosts car sales, and H2 is endorsed. There is a significant increase in the chi-square, thereby indicating that this model fits the data better than Model 1. (In unreported analyses, I also estimated models without in-state firms and found an identical pattern of support for H1 and H2. Additionally, I also estimated subsequent models reported in Table 2 without in-state firms and the support for predictions was identical.)

Model 3 includes an interaction between the number of SMOs and evangelism. The main effect of SMOs is positive and significant, but the main effect of evangelism is insignificant. However, the SMO × evangelism interaction term is significant and positive. Thus, there is support for the prediction that activist organization enhances the effect of evangelical claims on car sales. Model 4 inserts an interaction between the number of SMOs and advertising. The main effect of advertising is now significant and positive as is the main effect of SMOs. The effect of SMO × advertising interaction is significant and negative, and there is confirmation of the prediction that advertising weakens the effect of SMOs on sales (H4).

Model 5 includes an interaction between evangelism and advertising. The main effect of advertising is insignificant but the main effect of evangelism is positive and significant. The evangelism × advertising interaction is significant and negative, thereby supporting the hypothesis (H5) that the effect of evangelical claims on car sales wanes with advertising. Model 6 adds an interaction between the number of SMOs and time since regulation in the focal state. The main effect of SMOs is positive and significant, as is the main effect of time since regulation. The SMO × time since legislation interaction term has significant and negative effects and there is endorsement of the prediction (H6) that the effects of SMOs would decline as time since regulation rose. Model 7 inserts an interaction between evangelism and time since regulation in the focal state. While the main effect of evangelism is significant and positive, the main effect of time since regulation is insignificant. The evangelism × interaction effect is significant and negative, albeit at the 0.10 level, and H7 is confirmed.
When all interactions are simultaneously examined in Model 8, there is no support for H5 and H7, but support for the other predictions endures in the fully-saturated model. Note that the inclusion of several interaction terms generates collinearity in Model 9, and therefore, the individual models are used to interpret the results.

### Table 2. Random Effects MLE Models of State-Level Car Sales.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.85***</td>
</tr>
<tr>
<td></td>
<td>(3.70)</td>
</tr>
<tr>
<td>State Gross Product</td>
<td>0.323***</td>
</tr>
<tr>
<td></td>
<td>(0.130)</td>
</tr>
<tr>
<td>Urbanization</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td>(1.64)</td>
</tr>
<tr>
<td>No. of in-state firms</td>
<td>0.215***</td>
</tr>
<tr>
<td></td>
<td>(0.049)</td>
</tr>
<tr>
<td>Advertising</td>
<td>-0.871</td>
</tr>
<tr>
<td></td>
<td>(1.47)</td>
</tr>
<tr>
<td>Time since legal recognition</td>
<td>0.139***</td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
</tr>
<tr>
<td>No. of SMO’s</td>
<td>0.966***</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
</tr>
<tr>
<td>Evangelism</td>
<td>0.188**</td>
</tr>
<tr>
<td></td>
<td>(0.085)</td>
</tr>
<tr>
<td>SMO’s × Advertising</td>
<td>0.184***</td>
</tr>
<tr>
<td></td>
<td>(0.078)</td>
</tr>
<tr>
<td>SMO’s × Evangelism</td>
<td>-3.77***</td>
</tr>
<tr>
<td></td>
<td>(0.835)</td>
</tr>
<tr>
<td>Evangelism × Evangelism</td>
<td>-1.25**</td>
</tr>
<tr>
<td>Advertising</td>
<td>(0.620)</td>
</tr>
<tr>
<td>SMO’s × Time since legal</td>
<td>-0.097***</td>
</tr>
<tr>
<td>recognition</td>
<td></td>
</tr>
<tr>
<td>Evangelism × Time since legal</td>
<td></td>
</tr>
<tr>
<td>recognition</td>
<td></td>
</tr>
</tbody>
</table>

| Log Likelihood                | 2098.96  | 2049.47  | 2046.74  | 2039.37  | 2047.48  | 2044.94  | 2048.22   | 2025.98   |
| Chi-Square                    | 118.95***| 217.93***| 223.39***| 238.12***| 221.92***| 226.98***| 220.22***  | 264.90***  |

*Note:* The p statistic for each equation has been rounded off to the first decimal. The chi squares for all models are vis-à-vis a baseline model with only the intercept. ***p < 0.01, **p < 0.05, *p > 0.10 (Two tailed tests for all variables).
Robustness Checks

In analyses not reported for the sake of brevity, I conducted several tests to assess the robustness of the results, and sought to rule out counter-arguments and specification problems.

I began by exploring whether the results survived the inclusion of additional controls such as population, industrialization, and lagged sales in the focal state. I found that population was highly correlated with urbanization, and industrialization was highly correlated with state gross product, and hence, did not merit inclusion. The insertion of lagged sales improved the fit of the models, albeit marginally, but did not alter the basic pattern.

An important counter argument is that the presence of automobile clubs, the number of reliability contests, the number of car firms, and elapsed time since regulation in a focal state are endogenously related to the dependent variable – car sales in a focal state. When a variable is suspected to be endogenous, Davidson and MacKinnon (1993) suggest an augmented regression test (Durbin-Wu-Hausman test), in which the residuals of each suspected endogeneous variable are first obtained as a function of all exogenous variables, and then are included in a regression of the original model. If the residuals are significantly different from 0, then instrumental variables are to be used, and a simultaneous equation approach is to be employed. I ran regressions that explicitly controlled for heteroscedasticity of state-year observations, obtained the residuals of all the suspected variables, and included them in a regression of sales. I found that endogeneity was not an issue since none of the residuals were significantly different from zero. Among these variables, the residuals for auto clubs had the lowest p level. Even though the effect was insignificant, as a precaution, I employed a system of structural equations and developed an instrumental variable for auto clubs. I used three-stage least-squares techniques and re-estimated Model 2, and found that the results were identical.

I checked whether the results would differ if each reliability contest was weighted by its visibility. Since inspecting each state’s newspapers and then calculating a measure of visibility was time consuming and expensive, I computed the visibility of each contest in the most popular automobile magazine – Horseless Age. The visibility of reliability contests was operationalized as the frequency of reliability contests, weighted by the media exposure, and divided by the frequency of all contests (reliability and speed) weighted by their media exposure. When I checked the correlation between reliability contests/all contests in a focal state and visibility of reliability contests/visibility of all contests in a focal state, it was 0.94. Therefore, it is unlikely that would one obtain vastly different results if the effects of reliability contests were weighted by visibility.
I also sought to ascertain whether the advent of the gasoline engine as the dominant design influenced car sales. Industry observers indicate that the gasoline engine became accepted in 1903, but the inclusion of an explicit control for period effects did not appreciably alter the results. Moreover, some writers on the automobile industry refer to anti-speed vigilante organizations, and imply that they may have dampened sales (Flink, 1970). I searched the New York Times and Horseless Age but was only able to turn up a handful of ephemeral organizations, and hence, was unable to include them in the analysis.

Finally, a potential counter-argument is that sales are truncated at zero, and cannot be non-negative and therefore, should be modeled using a tobit specification. If this were so, then the main effects of SMOs and evangelism should be biased. I used random-effects tobit models to re-estimated Model 2 and did not find any appreciable change; I found that additional models indicated a similar pattern of results to those reported in Table 2. On balance, these checks imply that the results reported in Table 2 are robust.

**DISCUSSION**

This study illuminates the parallel routes to the constitutive legitimation of new industries. The findings show that the public-decentralized realm (Ingram & Clay, 2000) is an important domain for the formation of constitutive legitimacy. The results indicate that as the number of SMOs (auto clubs) in a focal state increased, sales of cars also significantly increased in the focal state. Hence, one implication of the results is that activism matters even when the establishment of new industries resembles a consensus-oriented social movement. A unique attribute of this study was that it also measured the effect of evangelism directly. The results show that evangelism had substantial positive effects on constitutive legitimacy and sales of the new industry. Evangelical claims that took the form of reliability contests in a focal state exposed consumer audiences to the car in experiential ways, allayed doubts about the viability of the car, and led to greater consumer purchases. The results also suggest that the public-centralized realm is an important arena for the creation of constitutive legitimacy. Time since enactment of laws authorizing the car significantly increased car sales. However, advertising by firms did not have spill-over effects on sales, and so cast doubt on industry-level legitimacy being a spill-over from advertising. The implication is that the private-decentralized realm may not be significant when public-decentralized and public-centralized domains are consequential.

More importantly, the study suggests that there are interesting interdependencies among the parallel routes to constitutive legitimacy. Thus, the number of
SMOs augments the effect of evangelism, and their joint effect increases sales. The growth of auto clubs supplied a social infrastructure for legitimation that augmented the persuasive impact of evangelism, thereby pointing to synergy in the public-decentralized realm of action. These findings connect neo-institutional accounts of activism with cognitive accounts of framing in the social movement literature (Snow & Benford, 1992), and underline how activists are cognitive entrepreneurs who mine available cultural resources to persuade audiences.

The findings also provide concrete evidence that advertising and laws dampen the effect of SMOs and evangelism. As advertising increased and promoted consumer awareness, the impact of auto clubs and reliability contests on consumer sales in a focal state declined, thereby suggesting that producer-sponsored advertising renders activism and evangelism superfluous. Moreover, the effects of SMOs and evangelism also witnessed a decline as conceptions of the automobile became stabilized over time. As time since legal recognition of the car in a focal state increased, the effects of auto clubs and reliability contests on sales in the focal state also diminished. Thus, as constitutive understandings of the automobile became crystallized by law, the effects of SMOs and evangelism weakened. These results suggest that the social organization of activists and evangelism matter primarily in the social movement phase of constructing new industries, but decay as industries gain advertising exposure and legal footholds. Thus, there may be a process of succession where public-decentralized domains of action are critical initially but decline in importance as public-centralized and private-decentralized realms become consequential.

The findings also speak to the field of organizational ecology even if this study was not designed to test ecological predictions. On a general level, the findings impart empirical substance to speculations by ecologists that social movement entrepreneurs and evangelism may play an important role in early phases of new industries (Carroll & Hannan, 2000; Swaminathan & Wade, 2000). The findings also address a debate between density-dependence theorists and institutional ecologists. On the one hand, density-dependence theorists hold that legitimation and competition are density-dependent processes, and have shown that there is an inverted U-shaped linkage between density and foundings/growth rates of firms, and a U-shaped relationship between density and mortality (Carroll & Hannan, 2000). The great benefit of the density-dependent approach is that it is simple, generalizable and replicable. On the other hand, institutional ecologists have argued that density dependence researchers should explicitly consider the effect of endorsements to individual organizations (Baum & Oliver, 1992; Baum & Powell, 1995). However, both points of view emphasize firm-level outcomes such as foundings and failures of firms, and subscribe to a producer-centric conception of the legitimation of new industries.
This study suggests that it may be useful to directly study how new industries are legitimated in the eyes of important audiences such as consumers or investors, and complements ecological research on firm-level outcomes. More importantly, an implication of this study is that consumer activists may play key roles in the legitimation of new industries. To date, organizational sociology depicts consumers as “lumped together in an aggregate, in a passive role” (White, 1981, pp. 522–523) and defocalizes their role in building the identity of new industries. Cultural analyses of consumption suggest that consumers can and do play an important role in shaping the meanings of products and the definition of product quality (Kopytoff, 1988). User groups play an important role in defining the identity of operating systems and software in diverse sectors of the economy. Similarly, marijuana consumers are playing an important role in a bid for its legalization as a medicine. This study shows how consumer activists located in auto clubs played an important role in situating the automobile as a cultural object and integrating it in the prevalent culture through their evangelism. It suggests that future work on legitimation needs to not only consider the role of consumer activists but also be attentive to the role of suppliers in enhancing constitutive legitimacy of a new industry, and the role of technological rivals in delegitimizing the new industry.

The findings are also of relevance to sociologists of consumption. To date, sociological analyses of consumption have shown how advertising and mass media play an important role in the social construction of new products (Schudson, 1989; Marchand, 1985). But sociological analyses of consumption have overlooked how “market interfaces” are created between producers and consumers (Frenzen, Hirsch & Zerrillo, 1996). The study of how novel artifacts are turned into social facts is essential in order to understand the market interface between consumers and producers, and this study shows that social movement activists and their evangelism influenced meanings of the automobile.

The limitations of this study point to directions for profitable research. This study analyzed how social movement processes contributed to consumer acceptance but did not analyze effects on other audiences such as investors and potential employees. Future research needs to show how social movement processes reduce uncertainty in capital and labor markets and enhance the generality of findings. This study analyzed the role of activists in new industries that emerged from a consensus-oriented social movement, but future research needs to study how activists and evangelism affect constitutive legitimacy in industries born through conflict-oriented movements such as craft brewing or alternative dispute resolution.

Moreover, this study focused on the number of SMOs but did not study how the social composition of the membership of SMOs influenced constitutive
legitimacy and consumer sales. A useful complement consists of exploring how membership of SMOs and their demographic structure influences the legitimation of new industries. Moreover, this study unraveled the effect of one type of evangelism – demonstration events. A valuable extension consists of analyzing whether the results are generalizable to other types of demonstration events such as “bakeoffs” and benchmark tests, and studying report cards or public interest advertising designed to promote the image of the industry.

This study examined evangelism by consumer activists when professional societies were moribund and trade associations were unsuccessful. A useful elaboration would be to study the effects of evangelism by activists drawn from the ranks of producers and professionals. A profitable direction is to compare the evangelical repertoires of claim-making used to legitimate and delegitimate organizational forms. For example, the conglomerate form of organization was partly delegitimated through ‘bust-up acquisitions’ initiated by take-over specialists, and by denunciations of the firm-as-portfolio model by business professors in magazines targeting senior managers (Davis, Diekmann & Tinsely, 1994).

Finally, this study only looked at the actions of activists in the early stage of an industry, but research on the effects of activists and evangelism in the later stages of industries is required. After the automobile was constitutively legitimated, institutional activists turned to the question of improving roads in the mid-1920s, and then at the height of the industry’s growth they highlighted the issues of product safety. Thus, institutional entrepreneurs ceased to be evangelists for the car and instead, became critics of the industry. Critics may lobby for the creation of new laws as temperance activists did in the case of the beer industry (Swaminathan, Wade & Saxon, 1998). Future research needs to show how activist-critics degrade investor and consumer perceptions, and induce counter-responses from producers. Research into the ideological competition between producers and critics sponsoring social movements is essential for advancing the frontiers of economic sociology.

ACKNOWLEDGMENTS

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NOTES

1. As the quote implies, reliability contests were opportunities to demonstrate the capabilities of the horseless vehicle. This demonstration provided firms a chance to win and to acquire a reputation. Note that it was firm-level reputation that was the positive spill-over and not the legitimacy of the automobile. The latter was the object of deliberate action by auto clubs.

2. For example, the Remington Arms Company in 1895 (coincidentally, the year in which the auto industry was born with the creation of the Duryea firm) proudly announced that the winner of the Irvington-Millburn Road race had used one of their “scientifically constructed bicycles” (Smith, 1972, p. 34).

3. Other writers urged for the testing of products before the 1890s, but it was only after 1890 that the logic became institutionalized when it was embodied in testing and standards organizations. These organizations catered to producers rather than consumers. Special-purpose testing agencies for consumers appeared in the late 1920s in the form of non-profit consumer watchdogs.

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*Horseless Age* (various issues).


