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**Popular Humor and the Collective Acceptance of
Breakthrough Innovations**

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**Popular Humor and the Collective Acceptance of
Breakthrough Innovations**

by

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Dedication

This dissertation is dedicated to the researchers who spent untold hours bringing belimumab out of the lab and into the lives of lupus patients. You will never know me and I will never know you, but you made this possible and I am forever in your debt.

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No clever combination of symbols and syntax could ever completely express my heartfelt gratitude to the many individuals who provided guidance, support, and crucial acts of kindness throughout this journey. And yet I will try.

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Now, a few personal notes. To my mother, Patricia Skelley Sharek, who made me and my brother Stevie write countless reflective essays during our adolescence on a range of topics including why “crass and vulgar jokes are the lowest form of humor”: I forgive you. These efforts may have failed to make us well-behaved children, but they no doubt succeeded in making us competent writers. Thank you, Momma. And sorry we’re still wild.

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And to my wonderful Fox, thank you for lighting up my world like a brilliant firecracker in the darkness of night.

Abstract

Popular Humor and the Collective Acceptance of Breakthrough Innovations

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Breakthrough innovations are strikingly unfamiliar additions to everyday life, and novel technologies encounter significant barriers en route toward successful commercialization and widespread acceptance within a given society. This dissertation examines popular humor as a distinctive form of adaptive discourse that communities engage in as they negotiate the potential domestication of a breakthrough innovation. The link between popular humor and collective-level responses to breakthrough innovations is explored via a theory-building, in-depth historical case analysis of major joke cycles during the introduction of the automobile (1897-1929). Analysis of 2,627 jokes, supplemental cultural ephemera, and contemporaneous media accounts reveals the significance of humor as distinctive form of discourse and demonstrates how popular humor can facilitate evolving acceptance of a previously resisted breakthrough technology. In sum, this study extends our understanding of social, cultural, and emotional processes that influence the trajectories of radical innovations, draws attention to collective-level, identity-based forces embedded in the rhythms of everyday life that influence the acceptance or rejection of breakthrough innovations, and introduces humor as a mechanism for negotiating the meaning of novel technologies in society.

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Chapter 1: A Review of Individual and Collective-Level Challenges in the Commercialization of Breakthrough Technologies

Breakthrough innovations are strikingly unfamiliar additions to everyday life. As individual consumers grapple with the novelty of innovations and weigh adoption decisions, a parallel process occurs at the collective level in which society negotiates whether and under what conditions a breakthrough technology may become an accepted and noncontroversial aspect of everyday life. Although the successful introduction of breakthrough innovations shifts the competitive landscape in significant ways, the processes which impel a new technology to cross the chasm from initial introduction to market creation (Moore, 1991) and toward widespread acceptance are not yet fully understood. As Hill and Rothaermel (2003) emphasize: “Many seemingly promising innovations fail the test of market acceptance. It is not uncommon for a swarm of competing new technologies to vie with each other as potential replacements for an established technology, with only one or two ultimately rising to the fore. Ex ante, there is substantial uncertainty as to the commercial potential of radical technological innovation” (258).

The commercial viability of a breakthrough innovation is uncertain, in part, because the adoption of new technologies cannot be predicted based solely upon its functional superiority over alternative solutions (David, 1985; Rogers, 1962). Innovations are introduced into a rich social and cultural context that shapes perceptions of functionality and value (Hargadon & Douglas, 2001), and in recent years organizational scholars have

increasingly recognized the role of social, cognitive, and cultural forces that influence the decisions of would-be adopters. On balance, however, this literature has focused largely on the direct producer-consumer relationship, emphasizing individual adopters while downplaying or ignoring the role of society in the acceptance of innovations. In contrast to the growing body of work delving into the mind of individual consumers (e.g., Lee, Ha & Widdows, 2010), the influence of collective-level social, cognitive, and emotional processes is comparatively neglected and undertheorized. In this chapter, I examine the hurdles breakthrough innovations must successfully negotiate in order to achieve widespread adoption, explore the mechanisms and processes innovation scholars have identified for overcoming these hurdles, and introduce a previously unidentified mechanism for negotiating the place of breakthrough technologies in society: humor.

CHALLENGES AND HURDLES IN THE WIDESPREAD ADOPTION OF BREAKTHROUGH TECHNOLOGIES

Breakthrough innovations represent radical departures from past practice (Abernathy & Clark, 1985) and consumers must reconcile this incongruity between the known and the unknown in adopting new, unfamiliar technologies. The challenges a breakthrough innovation face in its journey toward successful commercialization differ at the individual and collective levels. At the individual level, the emphasis is on potential adopters and their experience with, and perceptions of, unfamiliar technologies. The dominant focal variable for strategy, marketing, and technology scholars exploring this phenomenon is *individual adoption* and immediate antecedents to adoption such as intent to use (Rogers, 1962; Davis, 1985). At the collective level, by contrast, the emphasis is on

the degree of *collective acceptance* the innovation enjoys in society, and related constructs include whether controversies surrounding the breakthrough have been largely resolved (i.e., rhetorical closure) and its taken-for-grantedness as part of the status quo in a given society (i.e., sociotechnical stabilization) (Pinch & Bijker, 1987; Pinch & Bijker, 1984; Misa, 1992). For example, the design of what is today recognized as the common bike was surprisingly unsettled and controversial upon the technology's introduction in the 19th century. By 1898, however, the concept of the bicycle had stabilized and attained widespread acceptance in society such that "one did not need to specify [technical] details; they were taken for granted as the essential 'ingredients'" of the bicycle (Pinch & Bijker, 1984: 416). In the following sections, I elaborate upon the hurdles breakthrough innovations must successfully negotiate at both the individual and collective levels.

Individual-Level Challenges in the Adoption of Breakthrough Innovations

In contrast to incremental innovations which build upon breakthrough technologies in the form of new features, extensions, or complements to them (Dunlap-Hinkler, Kotabe, & Mudambi, 2010), the core functionality embedded in breakthrough innovations typically supports newly articulated and often previously unimagined user needs (Flammia, 2018). Accordingly, consumer perception is at the heart of user adoption models. Built upon the Theory of Planned Behavior (Ajzen, 1991) and its forerunner the Theory of Reasoned Action (Fishbein & Ajzen, 1977), consumers' perceptions of how useful and how easy a novel technology is to use form the core of the Technology Acceptance Model (TAM) shown in Figure 1.1 below (Davis, 1985). When weighing the potential adoption of a new

technology, users consider the benefits it offers over available existing alternatives (performance expectancy) and make predictions about whether their effort in attempting to use the technology will be successful (effort expectancy). If either of these calculations are unfavorable, it becomes unlikely that a user will develop the intention to adopt the technology under voluntary conditions (Venkatesh, Morris, Davis & Davis, 2003).

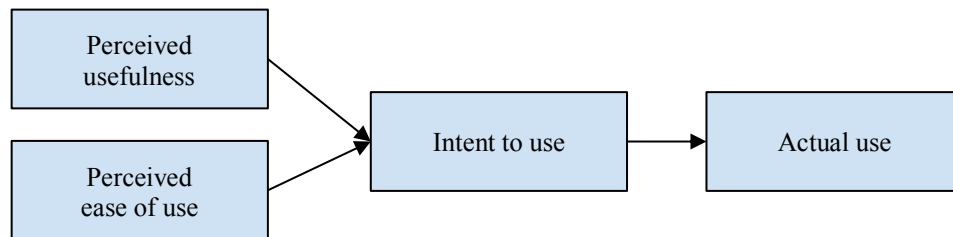


Figure 1.1: Technology Acceptance Model

In addition to performance expectancy and effort expectancy, a number of additional factors influence whether would-be adopters develop the intention to use a novel technology. Prior success with new technologies has been shown to positively bias individuals toward future adoption of technologies in workplace settings (Martins & Kambil, 1999), and the consumer-focused Unified Theory of Acceptance and Use of Technology model (identified in the literature as UTAUT2) recognizes that not only prior experiences with technology but also an individual's age and gender bear strongly on whether he or she opts to adopt new technologies (Venkatesh, Thong & Xu, 2012). In their study of 1,512 mobile internet users in Hong Kong, Venkatesh and colleagues further determined that price value, habit, and hedonic motivation (how fun or enjoyable it seems

to use the technology) each play a significant role in an individual's decision to voluntarily adopt and use a new technology.

Over and above the variables specified in the TAM and UTAUT2 models that apply to innovations with varying degrees of radicalness (the mobile internet study cited above, for example, relied on existing mobile phone users such that the adoption of mobile internet did not represent a truly radical departure from past practice), the sociocognitive view of adoption emphasizes further challenges faced by breakthrough technologies en route to successful commercialization. The high degree of novelty embodied in breakthrough technologies presents both cognitive and emotional hurdles that, if not successfully negotiated, can lead to negative appraisals of the innovation's inherent value and decrease likelihood of adoption.

At a cognitive level, past experience and knowledge may be insufficient to fundamentally understand the technology. Its essential newness and lack of familiarity generate cognitive incongruity which must be resolved in order to comprehend the functionality, potential benefits, and value of the innovation (Rindova & Petkova, 2008). Furthermore, according to the Coping Model of User Adaptation, grappling with technological change is an inherently emotional process (Frijda, 1988; Beaudry & Pinsonneault, 2005), and interactions with novel technologies may generate emotional distress ranging from loss-oriented emotions such as anger, frustration, and disgust to deterrence-oriented feelings such as anxiety and fear. In a study examining the voluntary adoption of a new suite of integrated IT applications across 249 banking account managers, for instance, the degree of emotional anxiety individuals experienced in response to the

technology was a strong predictor of their eventual adoption of it (Beaudry & Pinsonneault, 2010). Likewise, consumer researchers stress that the cognitive and emotional reactions individuals have toward the outward appearance of innovations can dramatically alter determinations of value based on superficial perceptions of functionality, ease of use, and quality (Creusen, Veryzer & Schoormans, 2010). For example, the number of controls a new technology presents (e.g., buttons) conveys complexity to would-be adopters, and greater numbers of controls correspond to negative evaluations of its ease of use and, ultimately, its value (Norman, 1988).

In sum, user adoption of breakthrough innovations is fraught at the individual level, with perceived expectations of the technology, cognitive incongruities, emotional reactions and individual differences such as age, gender, prior experience, and habit influencing the go/no-go decision of engaging with a new technology. Later in this chapter, I review the literature on mechanisms and strategies scholars have explored for successfully negotiating these challenges.

Collective-Level Challenges in the Widespread Acceptance of Breakthrough Innovations

At the collective level, we must account for competing groups of users, arbiters, and even non-users who influence the shape and fundamental acceptance of the technology in a given society, as the successful commercialization of a breakthrough innovation cannot be reduced simply to the aggregation of individual decisions to adopt based upon relative advantage. Although opposition in spite of relative advantage is particularly problematic for radical innovations (Kleijnen, Lee & Wetzels, 2009), even incremental innovations –

such as screwcaps as the functionally superior but widely resisted replacement for corks in wine bottles (Garcia & Atkin, 2005) – are not shielded from potential failure based upon relative advantage alone.

Contradiction, controversy, and conflict characterize the collective-level challenges faced by breakthrough innovations, and significant resistance to innovation (Ram & Seth, 1989) surfaces across a broad spectrum of domains such as healthcare (e.g., stem cell therapy), agriculture (e.g., GMOs), education (e.g., common core), and digital technology (e.g., biometric facial recognition) (Evans, 2002; Motta, 2014; Kirp, 2014; Ellerbok, 2011). Whether a technology should be permitted to exist in a given society, in what form, and under what conditions are frequently subject to debate at the dawn of a radically new technology's life cycle. In the following section, I explore four bases of contestation in detail - disruptions to the quotidian, negative externalities, moral opposition, and lack of shared understandings - and describe how these collective-level phenomena influence the trajectory of breakthroughs.

Disruptions to the Quotidian

When the sociotechnical status quo is in equilibrium, members of society more or less peaceably coexist with the technologies that serve them in countless ways (McGinn, 1991; Latour, 1992). With successfully commercialized breakthroughs of the past, entire categories of innovation (e.g., automobiles, personal computers, and mobile phones) and the complex set of human behaviors surrounding them have made the transition from initially unfamiliar and exotic to ordinary and mundane. When this transition is made, the

now-familiar technologies become woven into the fabric of everyday life, and like other patterns of social interaction, are typically only noticed when they fail us (Jepperson, 1991; Latour, 1992).

Yet in their infancy, breakthrough innovations represent a form of social change, introducing the potential of departing from the way things have been to a new version of how things could be. The patterns of everyday life within a given society, including those related to existing technologies, compose the *quotidian*, and the degree of potential social change introduced by an innovation depends on the extent to which its adoption disrupts these patterns (Snow, Cress, Downey & Jones, 1998). Directing attention to the quotidian trains our theoretical lens upon the pragmatic, lived, day-to-day experience of social change brought about by technological innovation and sharpens our focus upon the ways members of a society interact with new technologies and how these interactions may give rise to both positive and negative collective responses.

Challenges to the well-worn patterns of everyday life seed the conditions for collective responses. According to sociologist David Snow and his colleagues (1998), disruptions of the quotidian typically stem from one of four conditions: (1) actual or threatened intrusion into and/or violation of citizens' sense of privacy, safety, and control, (2) alteration in subsistence routines because of unfavorable ratios of resources to claimants or demand, (3) man-made accidents that throw a community's routines into doubt and/or threaten its existence, and (4) dramatic changes in social control.

In Kline and Pinch's account of negative collective responses to the introduction of the automobile, for example, the discontent experienced by rural citizens due to the loss of

control over their lives and communities to wealthy, urbanite auto enthusiasts is palpable (1996: 768):

When they first appeared in the countryside in the early years of [the 20th] century, driven by rich city folk out for a spin, they often met a hostile reception. Indeed, farmers joined small-town residents, suburbanites, and even irate city dwellers in many parts of the country in hurling such epithets as "red devil" and "devil wagon" at the dangerous, speeding car - names that soon symbolized the rising clamor of rural protest.

In American society prior to the rise of the automobile, country roads were built and maintained by local residents who, in turn, viewed them “in a proprietary manner” (Kline & Pinch, 1996: 771). Strikingly discordant with the rhythms of everyday life in rural and suburban communities, automobiles violated this sense of ownership, bringing lethal danger and nuisance with them. Upon further consideration, it becomes clear that the automobile generates controversy and ignites negative collective reactions precisely because it disrupts the quotidian in each of the four possible ways articulated by Snow and colleagues: (1) rural citizens’ sense of privacy, safety, and control is violated, (2) the day-to-day business of securing and maintaining a livelihood is interrupted as livestock is threatened and travel from farm to market is impeded, (3) man-made accidents raise immediate concerns that necessitate significant changes in everyday routines, and (4) wealthy city-dwellers threaten the social control rural families have over their own communities.

Externalities

A key consideration in understanding how controversy develops surrounding a given breakthrough innovation is accounting for the heterogeneity of experiences among differing factions of society, specifically users of the new technology (i.e., adopters) versus everyone else. The experiences and impressions of bystanders become especially important in the fate of publicly conspicuous technologies with greater relative novelty (i.e., those likely to introduce greater contradiction to the quotidian and related emotional intensity) and an observable impact on non-users and/or the community as a whole. For breakthrough innovations that create negative externalities on either the production or consumption side (Ayres & Kneese, 1969), non-users may be forced to cope with disruptive sensory experiences, violations of social norms and routines, and/or existential concerns in the absence of any counterbalancing benefit or enjoyment of the use of the technology itself. And first impressions matter. With breakthrough innovations of this ilk (i.e., conspicuous and impactful to the broader community), non-users can systematically form first impressions based upon a very different or lopsided set of experiences than users. And, without beneficial experiences to balance it out, these impressions may be overwhelmingly negative. Furthermore, because shared emotional responses may be experienced vicariously (Rime, 2007), strong impressions may be formed by members of society that have *never even come into direct contact with the new technology*.

Moral Opposition

In addition to conflict and contestation borne from disruptions to the quotidian, some breakthrough innovations ignite controversy based on whether they should be allowed to

exist on moral grounds, and, if so, in what form. Whereas conflict based on disruptive contradiction with the quotidian is characteristically a non-ideological and pragmatic affair underpinned by constitutive schema about how the world usually works, moral appraisals of appropriateness are rooted in ideology and sacred beliefs (Zald, 2000; Scott & Davis, 2015; Tyler, 2006). For example, the rapid pace of development in genetic engineering and reproductive technology in the 1990s generated widespread controversy based on the moral denouncement and ethical concern of “playing god” (Evans, 2002). Likewise, in the early 2000s, breakthrough medical advancements using embryonic stem cells generated heated public opposition from pro-life groups based on the moral belief that life begins at conception. As a result of public outcry, President George W. Bush effectively banned new embryonic stem cell research and related treatment innovations in 2001. Over the course of the following decade, however, public support for embryonic stem cell research grew substantially as the technology became better understood and its promising medical benefits more clear. With opinion polls showing a dramatic swing toward 60% of the American public supporting the expansion of embryonic stem cell research in the United States, President Barack Obama revoked the ban in March 2009 (Murugan, 2009).

Lack of Shared Understanding

As the case of embryonic stem cell research highlights, a society’s broader understanding of a breakthrough and its potential benefits constitute a key success factor for whether the technology achieves widespread acceptance at the collective level. The development of collective-level understandings of breakthrough innovations is necessary for the creation

and stabilization of the new markets they forge (Rosa, Porac, Runser-Spanjol & Saxon, 1999; Abernathy & Clark, 1985). Defined as shared, socially constructed knowledge structures (i.e., product conceptual systems), emerging product markets “start as unstable, incomplete, and disjointed conceptual systems held by market actors which is revealed by the cacophony of uses, claims, and product standards that characterize [them]” and, in the case of successful innovations, evolve to become coherent based upon interested parties making sense of one another’s discourse and behavior (Rosa, Porac, Runser-Spanjol, & Saxon, 1999: 64).

Breakthrough innovations, by their very nature, do not fit neatly into existing product categories or other shared, socially constructed knowledge systems. This misfit with existing schemas available at the collective level makes radically novel technologies often incomprehensible and their value uncertain (Rindova & Petkova, 2007). For example, when the minivan market emerged in the early 1980s, consumer reception was initially cool as conceptualizations for how to categorize the product with respect to existing, shared understandings of the automobile market (i.e., cars and trucks) competed with one another. As the dominant shared understanding of the minivan shifted to “car-like” and became both coherent and settled, however, sales of this new automobile design took off (Rosa, et al, 1999).

A more radical example is that of the smallpox vaccine, the first vaccine invented and one of the most influential breakthrough innovations to date (Richter, 2005). Pioneered in 1796 and published broadly in 1798, British physician Edward Jenner derived the vaccine from cowpox, a closely related pathogen, after observing that farm workers who

contracted cowpox appeared to be subsequently immune to the much more severe and often fatal smallpox virus. The general public, unlike communities of medical practitioners across the globe which championed the innovation, actively resisted efforts by public health officials to encourage vaccination (Sköld, 1996). The typical “consumer” in this context did not have a basic understanding of how vaccine technology worked or the nuance of how it differed from its more dangerous forerunner, inoculation. At the turn of the 20th century, more than 100 years after the breakthrough’s initial introduction, widespread social resistance to the vaccine led to the militarization of public health units in New York City which went door to door during outbreaks and forcibly vaccinated citizens with the help of NYPD police officers. And when local governments mandated vaccination “ordinary Americans... responded in a variety of ways, ranging from ready compliance to violent riots” (Willrich, 2011: 13).

They organized antivaccination societies, conducted legislative campaigns, and flooded the courts with lawsuits challenging compulsory vaccination as a violation of their constitutional rights. More often, people resisted public health authority in more private, mundane ways: by concealing sick family members, forging vaccination certificates, or simply dodging their legal duty to be vaccinated. (Willrich, 2011: 13).

The draconian efforts of U.S. public health officials in the early 1900s largely succeeded in the effective containment of smallpox. In this pursuit, however, they experienced the pitfalls of compulsory vaccination, and future vaccine campaigns urged voluntary adoption of the life-saving technology in a new way, one which closed the gap between the

collective-level understanding of the medical community and that of the general public: public health education (Hornik, 2002).

Aside from the hurdles posed by disrupting the quotidian, responses to negative externalities, moral opposition, and lack of shared understandings, breakthrough innovations may also encounter other collective-level challenges. In order to make that transition from the exotic to the mundane and achieve an enduring spot in the marketplace, breakthrough innovations must often navigate a competitive landscape in which facilitating conditions commonly favor existing or alternative technologies (i.e., path dependencies such as those that led to the rejection of the Dvorak keyboard design and hobbled the trajectory of the electric car) and resolve disputes among competing groups of users concerning what shape a given innovation should take and who it should best serve (i.e., interpretative flexibility such as that which gave us the common bicycle) (David, 1989; Kirsch, 2000; Pinch & Bijker, 1984). In all, it seems like an unlikely journey. In the following section, I discuss the inroads innovation scholars have made in understanding mechanisms for negotiating these challenges at both the individual and collective levels.

UNDERSTOOD APPROACHES FOR NEGOTIATING THESE CHALLENGES

Individual-Level Mechanisms

Breakthrough innovations support newly articulated user needs (Abernathy & Clark, 1985) and innovation scholars have identified several strategies that may help bridge the gap between the inherent benefits offered by a novel technology and users' ability to experience and understand those benefits. Conceptually, approaches to negotiating the

individual-level adoption hurdles that breakthrough innovations encounter in the marketplace may be grouped in terms of design strategies and communication strategies.

Design Strategies

The apparent novelty of breakthrough innovations can hamstring users' perceptions of not only how easy the technology would be to use (effort expectancy) but also how useful it would be if such effort were made (performance expectancy). However, clever design can promote an improved experience and address some of the cognitive and emotional barriers to adoption. When a radical technology resembles an existing product, for instance, the visual similarity can stimulate analogical reasoning such that the user accesses existing schemas for clues about how to engage with the new product (Rindova & Petkova, 2007). Such a similar resemblance need not stem from similar functionality to be effective, as is the case with skeuomorphs. Skeuomorphs are "those elements of a design that serve no objectively functional purpose but are essential to the public's understanding of the relationships between innovations and the objects they displace" (Hargadon & Douglas, 2001: 491). For example, Thomas Edison's design insight to make electric lighting visually akin to existing gas lighting - which involved *reducing* the standard functionality of the technology by dimming the bulbs to only 12 watts - helped pave the way for the technology's success (Hargadon & Douglas, 2001).

Making design choices that reduce the apparent complexity of the technology for end users can also promote more favorable appraisals of effort expectancy. As the mobile phone made its transition from fledgling technology to everyday necessity in the late 1990s

and into the early 2000s, Nokia dominated the market with a peak market share of 49.4% (Lee, 2013). One of the appeals of Nokia's mobile phone design was its simple keyboard structure and menu navigation. According to a detailed study of mobile phone usability, compared with the offerings of its two biggest competitors at the time, Nokia's simplified design reduced "detours" (i.e., missteps) on tasks such as sending a text message by as much as 48.7%. Furthermore, the learnability of Nokia's design - i.e., design that enables users to rapidly improve performance - notably outpaced that of its competitors (Ziefle, 2002).

In addition to design as a means of mitigating individual-level cognitive barriers to adoption, it may also serve to attenuate negative emotional reactions as well. The design strategies already discussed (i.e., visual similarity to existing products, skeuomorphs, and reduced apparent complexity) can indirectly reduce the stress experienced by users. However, aesthetic appeal stemming from color, shape, and so on can trigger a positive emotional response based on these sensory cues alone. The aesthetic form a breakthrough innovation takes may be distinct from its functionality and alternatively "generates symbolic and aesthetic properties by providing cues that elicit social, cultural, and aesthetic meanings, as well as visceral emotional reactions" (Rindova & Petkova, 2007: 218).

Communication Strategies

Communication strategies can also help users learn about the benefits of breakthrough innovations and become more likely to adopt novel technologies. According to the two-step model of communication, mass media informs the consumption patterns of opinion

leaders, trend setters, and influencers (i.e., *innovators*), while observing the behavior of and engaging in interpersonal communications with these innovators informs the consumption patterns of *imitators* which compose a far larger segment of society (Katz & Lazarfeld, 1955; Katz, 1957). For new, complex innovations, Rogers (1995) argues that mass media campaigns (rather than interpersonal communication) are a more effective for accelerating the rate of adoption in the early phase of an innovations life cycle. This claim is bolstered by an empirical study of 1,000 adults which examined the link between communication sources and modes and adoption of e-banking technology in the late 1990s (Lee, Lee & Schumann, 2002). The study found that, compared to imitators, innovators were disproportionately tuned in to and often actively sought out written communications from authoritative sources. Imitators, by contrast, were more tuned in to conversational communications with family, friends, and producers such that imitators became more than twice as likely to adopt e-banking when both forms of communication were present. And ultimately, collective, widespread acceptance shifts normative expectations of individual behavior, e.g., from pressure *not* to adopt, to passive acceptance of individual adoption, to active pressure *to* adopt.

Collective-Level Mechanisms

In contrast to the growing body of work delving into the mind of individual consumers, the influence of collective-level social, cognitive, and emotional processes are comparatively neglected and undertheorized. In the management literature, cognitive and sociocultural work has called attention to the importance of understanding collective-level

forces that influence the adoption of innovations. For example, Rosa and colleagues (1999) argued that shared categories influence product markets and individual consumers, while Rindova and Petkova (2007) argued that collective-level generic schemas must emerge to define new categories of innovation. Furthermore, research citing the influence of institutions (Hargadon & Douglas, 2001), tradition (Ram & Sheth, 1989), and the use of narratives (Lounsbury & Glynn, 2001) implicitly acknowledges the broader role of society and culture in the acceptance of or resistance to breakthrough innovations. That said, this literature has focused largely on the direct producer-consumer relationship with some attention to how arbiters mediate this relationship (e.g., Bijker, 1992). On balance, the focus in the extant literature has emphasized how individual target adopters respond to breakthrough technologies while downplaying or ignoring the broader role of society in the acceptance of innovations. However, for a new technology to be made readily available for individual consumption, its sheer existence must be tolerated by society at large.

While it is understood that some degree of society-level tolerance toward a breakthrough innovation is imperative for its survival (Bijker & Law, 1992), underlying processes that drive the emergence and mobilization of influential collectivities and, relatedly, a firm's strategic options for fostering collective-level acceptance or overcoming collective-level resistance are not clear. While "a technology is stabilized if and only if the heterogeneous relations in which it is implicated, and of which it forms a part, are themselves stabilized" (Bijker & Law, 1992:10), our theoretical understanding of this phenomenon remains limited.

Although insights into collective-level mechanisms that drive widespread acceptance are scarce in the organizational and innovations literature are scarce, sociologists have long considered the question of how unknown or unpopular ideas gain popularity and become woven into the fabric of everyday life. Drawing upon the social movements literature provides insights into possible collective-level mechanisms that are used to negotiate the place of breakthrough innovations in society. Integrating social movements theory into our understanding of how society responds to breakthrough innovations positions us to understand and critically analyze who is going to become engaged and whether they can, in practical terms, exert an influence over the trajectory of the technology. Furthermore, this theoretical approach avoids the reductionist tendency to focus solely on the producer-consumer relationship and allows for the conceptual integration of other stakeholders that can influence the success or failure of breakthrough innovations.

Framing Strategies

Social groups use framing strategies to wield influence through constructing (and/or reconstructing) the broader cultural meaning of objects, events, and players in a given arena of contention. Use of the verb “framing” to conceptualize the process of meaning construction “denotes an active, processual phenomenon that implies agency and contention at the level of reality construction” (Benford & Snow, 2000: 614). Organizational scholars have begun integrating insights from the social movements literature to understand the diffusion of new practices (Strang & Soule, 1998) and the

processes by which specific meanings (e.g., cultural codes) become associated with ideas and products in society (Weber, Heinze & DeSoucey, 2008). For example, the creation of the premium grass-fed beef and dairy market in the United States stemmed from social groups' framing of farming techniques as authentic and sustainable versus manipulated and exploitative. Movement actors associated meanings such as "sincere," "honest," and "transparent" with the "authentic" grass-fed farming while framing conventional farming techniques as "instrumental," "deceitful," and "obscured" to the "manipulated" (Weber, Heinze, and DeSoucey, 2008: 539). Similarly, grass-fed beef products were culturally framed as sustainable while conventional farming was negatively framed as exploitative.

The way individuals talk with one another about a breakthrough innovation - i.e., its discursive framing - directly affects the interpretative lens used to make sense of its place in society and, consequently, the formation of related intentions to passively accept, actively accept (i.e., adopt), passively ignore, or actively contest its bid to become part of everyday life. The sociology literature calls attention to various forms of framing. In the context of breakthrough innovations, these can serve to define the meaning of a specific technology (articulation frames), clarify and invigorate interpretations (amplification frames), designate the technology as potentially problematic (diagnostic frames), cast associated social actors as victims or antagonists (prognostic frames), and suggest a rationale for action or inaction related to the technology (motivational frames) (Benford & Snow, 2000; Hunt, Benford & Snow, 1994; Gamson, 1995).

Arguably, innovating firms get the first word in framing the place of a technology in society when they debut their breakthrough. Just as first impressions matter at the

individual level when a potential adopter initially encounters a novel technology (and thus attention to design details can make or break the trajectory of promising technologies), it follows that firms also exercise agency with initial framing as they offer the preliminary interpretation of how their breakthrough can be understood in the context of society. Beyond this, however, the producer becomes one voice among many that begin to shape the discourse surrounding a radically new technology. Changing the conversation (i.e., collective-level discourse) when negative interpretations become popular and threaten the success of an innovation is difficult though not insurmountable. For example, later in this chapter I discuss how the spread of playful applications of surveillance technology (e.g., tagging friends in photos for social media) changed the discourse surrounding this breakthrough from creepy to cool (Ellerbrok, 2011).

Identity-Based Networks

Personal interactions with highly novel, unfamiliar innovations are salient life experiences that marshal our attention and elicit complex emotional responses (Rindova & Petkova, 2007; Lee, Ha & Widdows, 2011). Whether by capturing the imagination of eager would-be adopters or disrupting the day-to-day routine unsuspecting bystanders, these emotionally-charged initial experiences with breakthrough technologies lay the foundation for the formation of collective identities.

Drawing upon the social movements literature, collective identity speaks to the shared definition of an emergent dynamic “generated and created between individuals” (Flesher Fominaya, 2010: 394) and deriving from “members’ common interests,

experiences, and solidarity” (Taylor & Whittier, 1992:105) as opposed to traditional social group distinctions of class or demography (Melucci, 1995). The basic essence of collective identity “resides in a shared sense of ‘oneness’ or ‘we-ness’ anchored in real or imagined shared attributes and experiences among those who comprise the collectivity and in relation or contrast to one more actual or imagined sets of others,” and “embedded within the shared sense of we is a corresponding sense of collective agency” (Snow, 2001: 3). Formative experiences with breakthrough technologies, then, not only promote the formation of a collective identity in the shared sense of “us,” it does so in direct relation to some other presumed group: “them.” This adversarial framing by a given social group in relation to others intensifies its members’ sense of identification and this enemy mindset “mobilizes them to achieve group goals” (Rindova, Becerra & Contardo, 2004: 677; Gamson, 1995). Considering Pinch and Bijker’s (1987) historical case analysis competing social groups vying to shape the form and trajectory of the bicycle through this lens, for instance, the anticyclist movement forged a collective identity around shared opposition to this new technology whereas female cyclists and young male cyclists forged other distinct collective identities around their competing preferences for the ideal bicycle design.

The impetus for collective identity may be based upon an individual’s direct lived experience or formed indirectly based on a perception of shared status or relation to affected others (Poletta & Jasper, 2001). Applying this logic to breakthrough innovations, not only are direct experiences with novel technologies relevant to the formation and activation of collective identities in response to it, but also indirect experiences based on others’ accounts of their experiences with it. Once individual responses to new

technologies begin to take shape, informal “submerged networks” (Melucci, 1985) of likeminded individuals begin to surface as imagined communities with collective identities (Hassan and Staggenborg, 2015), and the emergence of these collective identities informs their collective action. This identity-based embrace or rejection of breakthrough technologies occurs because “people adopt new personal technologies not only for what they do (i.e., their functional value), but also because of what they mean (i.e., their symbolic value)” and “innovations occupy a special place among products to be able to express self-identity” (Arbore, Soscia, and Bagozzi (2014: 91). For consumers who identify as environmentally conscious, for example, hybrid vehicles hold symbolic value as a means of identity expression over and above the technology’s essential functional utility (Arbore, Soscia and Bagozzi, 2014). Therefore, collective identities related to new technologies guide the ordinary, individual behavior of would-be adopters in the sense that those repelled by symbolic features of the new technology are unlikely to adopt it (Harrison & Laberge, 2002), while, alternatively, those that embrace the technology’s symbolic features are more likely to adopt it.

As economists have long recognized, consumer choice is a potent form of collective action (Micheletti & Stolle, 2015: 479):

Over the years campaigns about consumer choice have become increasingly important for activism around the world. Social movements recognize that not only can people be mobilized to take a stand on important political issues, for instance GMOs, animal treatment, or worker welfare, when demonstrating and protesting, but also when they go shopping.

The concept of ‘political-consumerism’ identifies these different kinds of efforts as a form of collective action, formally defined as consumers’ use of the market as an arena for politics in order to change institutional or market practices found to be ethically, environmentally, or politically objectionable. When people mobilize politically in the market and use their economic means to attempt to influence political matters they function as ‘citizen-consumers’ who believe that citizen responsibility also applies to private market transactions.

Indeed, collective identity lays the groundwork for collective action. In the past, social movements scholars delimited collective action as a group activity. More recent scholars, however, have acknowledged another form of collective action: a potent phenomenon composed of the informal actions (or inactions as it pertains to consumerism) and forms of “everyday resistance” by ordinary individuals connected by a common identity “through largely impersonal networks” (Hassan and Staggenborg, 2015: 347-348). Collective identity and action in this form is more subtle than highly structured social movements; it is more embedded in the day-to-day activities of ordinary individuals and some of the terms traditionally associated with social movements – protest and activism, for example – fail to capture this nuance. Instead, ordinary individuals find their place among likeminded others in an “imagined community” resisting disruptions to the quotidian or, alternatively, “pushing for gradual and less confrontational social change” (Hassan and Staggenborg, 2015: 349).

Firms bringing breakthrough technologies to the market are not completely at the whim of unknown submerged identities that may be triggered by their innovation. To the contrary, marketing research demonstrates that firms have agency in how they position their products with respect to triggering latent identities. For example, a series of studies

found that associating an underdog narrative with an emerging brand - i.e., highlighting humble beginnings, lack of resources, and “determined struggle against all odds” - resonated with consumers that identified as underdogs themselves such that these participants were significantly more likely to form intentions to buy (Paharia, Keinan, Avery & Schor, 2010: 708).

As the underdog effect further demonstrates, the stories that both producers and consumers tell to others and themselves can affect widespread acceptance at the collective level and adoption behavior at the individual level. Even with groups for whom the adoption of a breakthrough technology seems most unlikely, discursive strategies make a difference. For example, discursive strategies led to the common use of the internet among ultra-orthodox Jewish women despite staunch religious principles banning and discouraging technologies that expose adherents to the sinful secular world (e.g., television is banned and phone use is heavily regulated) (Livio & Tenenboim Weinblatt, 2007). In ultra-orthodox Jewish communities, women are commonly economic providers as men focus their energies on religious studies, and the collective-level discourse among these women carefully parses the broader danger of the internet for the community from the economic possibilities created for individuals. The collective-level discourse further constructs dichotomies between the technology itself versus the content it provides, the use of technology by adults versus children, and the agency to choose content versus coerced exposure (as with television or radio technologies that have set programming). From their existing repertoire of religious arguments and instruction, the women construct nuanced

rationales to legitimize internet acceptance and adoption even when their use in practice diverges from these religious rationales (e.g., engaging in secular pregnancy and marriage forums). Based on their findings, the authors of this study suggest that “when investigating the domestication of new technologies, examining technology-related discourse may be no less important than the more common to date focus on practice” (Livio & Tenenboim Weinblatt, 2007: 29).

In the following section, I introduce a particular form of technology-related discourse that communities engage in as they negotiate the potential domestication of a breakthrough innovation: popular humor.

HUMOR AS A DISTINCT DISCURSIVE MECHANISM FOR OVERCOMING BARRIERS TO INDIVIDUAL ADOPTION AND COLLECTIVE ACCEPTANCE

Popular humor is a ubiquitous form of social discourse which is linked to key phenomena for the success of technologies at both the individual (e.g., cognitive and emotional modulation) and collective level (e.g., information sharing and social bonding). At an individual level, getting a joke triggers the release of dopamine and the positive emotion of mirth (Ashby, Isen & Turken, 1999; Mobbs, et al., 2003). Positive emotions, particularly those linked with an achievement such as the figuring out of joke, are in turn correlated with increased acceptance and use of novel technologies (Beaudry & Pinsonneault, 2010). Further, humor allows individuals to better cope with anxiety (Boskin, 1997), an emotional state commonly associated with decreased adoption behavior (e.g., “technostress”). The demonstrated linkages between emotion and technology

adoption have led scholars to call for “more research on the role of happiness and other achievement emotions in [technology] usage” (Beaudry & Pinsolneault, 2010).

At a collective level, recent research has called attention to the unique role of playfulness in changing the discourse about breakthrough technologies. For example, the controversial technology of facial recognition surveillance quietly transitioned from a widely opposed technology to an ordinary part of everyday life through the playful practice of “tagging” friends and family in images on social media (Ellerbrok, 2011). Initially in the discursive realm of security and surveillance, making the use of facial recognition technology social and playful has not only reduced the controversy surrounding it but has successfully recruited millions of users to coach the facial recognition algorithms to become increasingly accurate and connect facial templates to real-world identities.

Playfulness and humor have the capacity to change collective-level discourse. When Steve Jobs debuted Macintosh on January 24, 1984, computers were considered impersonal machines that were too complex for amateur users. Coupled with the iconic “1984” ad that aired during Superbowl XVIII just two days earlier (Stein, 2002), Jobs’ introduction of Macintosh shattered that framing and changed the conversation about personal computing forever. He did so with tactical use of humor (Bond, 2016).

“All of the images you are about to see on that screen will be generated by what’s in that bag,” Jobs says¹ before silently striding across the stage, quietly unzipping a bag to reveal the Macintosh. He then sets it up in a matter of seconds and inserts a floppy disk.

¹ “The Lost 1984 Video: Young Steve Jobs Introduces the Macintosh”
<https://youtu.be/2B-XwPjn9YY>

Chariots of Fire begins playing in the auditorium as the Macintosh silently and playfully demonstrates some of its functionality (see Figure 1.2).



Figure 1.2: Demonstration of Macintosh Drawing Application in 1984.

Then the music stops and in this now-iconic moment, Jobs says, “We’ve done a lot of talking about Macintosh lately, but today I’d like to let Macintosh speak for itself.”

Macintosh opens with the deadpan delivery of a joke and presciently pauses as the auditorium erupts with joyful laughter: “Hello, I’m Macintosh. It sure is great to get out of that bag.” When Macintosh continues, it is to tell another: “Unaccustomed as I am to public speaking, I’d like to share with you a maxim I thought of the first time I met an IBM mainframe: NEVER TRUST A COMPUTER YOU CAN’T LIFT.” This next joke, poking fun at the dominant competitor in the computing industry and highlighting the uniquely

diminutive size of the Macintosh, kills and the audience again erupts into uproarious laughter.

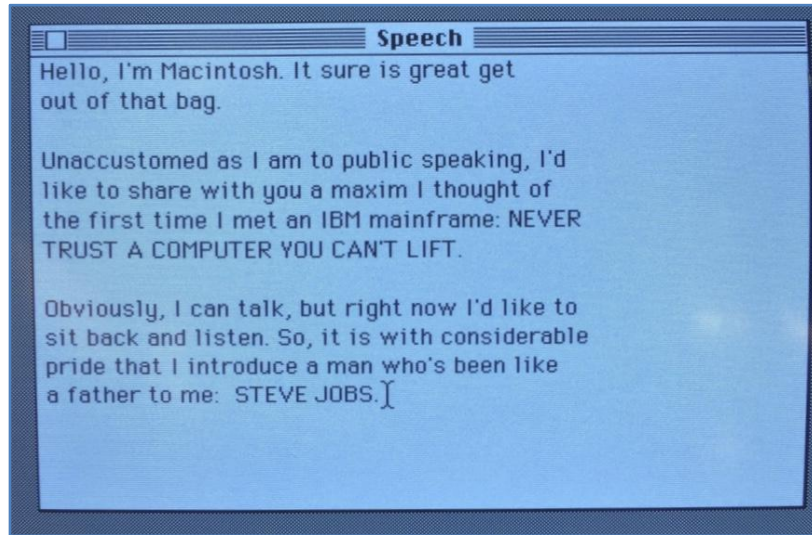


Figure 1.3: Macintosh's Speech Demonstration at Its Debut in 1984.

In addition to emotional modulation, humor is associated with key cognitive phenomena crucial to individual-level adoption such as task adaptation (Isen, Daubman & Nowicki, 1987) and manipulation of existing cognitive schemas (Suls, 1972). And at the collective level, humor can enhance social bonding in emerging collectivities and provide a conduit for surreptitiously signaling and exchanging unpopular opinions. These linkages, among others, are explored further in the following chapter which reviews the literature on humor and examines how the jokes we tell one another about emerging technologies may significantly influence their ultimate commercial success or failure.

Chapter 2: A Review of the Humor Literature

Although jokes, puns, and moments of levity punctuate and pervade daily life, macro organizational scholars have not yet taken humor seriously. Within the strategy and entrepreneurship literatures, the role of other forms of discourse in shaping the meanings ascribed to – and the perceived value of – firms and their offerings is increasingly well understood (e.g., Lounsbury & Glynn, 2001; Weber, Heinze & DeSoucey, 2008; Kahl & Grodal, 2016). Yet when occasional discussions of humor do appear in the management literature, the focus is at the micro-level, on individual and small group behavior as it relates to the workplace (e.g., interactions between leaders and subordinates, diffusion of high stress situations in the C-suite, and the dynamics of temporary group formation) (Avolio, Howell & Sosik, 1999; Sutton & Callahan, 1987; Terrion & Ashforth, 2002).

Popular humor is broad phenomenon which is not restricted to idiosyncratic interactions between individuals and small groups. What a given society finds funny in any one epoch reflects the underlying tensions, anxieties, and contradictions of the period, acting as a “cultural seismograph that registers the slightest tremors of daily existence” (Boskin, 1997: 202-203). As discussed in Chapter One, the introduction of breakthrough technologies often disrupts the well-worn patterns of everyday life, i.e., the “quotidian.” Weaving radically new technologies into the existing fabric of society requires a reimagining of the quotidian and revision of expectations of day-to-day life.

It is no secret that adaptation to a new reality is difficult. Habits, institutions, and beliefs are deeply ingrained into the taken-for-granted rhythm of everyday life and these

patterns of interacting with physical objects and one another are rarely even consciously noticed much less actively altered (Duhigg, 2012; Latour, 1992; Orlikowski, 2007). Like the case of the QWERTY keyboard versus superior challengers such as the Dvorak design, persistent and widespread resistance to change may humble the ambitious trajectories of even “obvious, proven” technologies (Rogers, 1962: 8; David, 1985).

“There is a considerable distance,” sociologist Piotr Sztompka observed, “between the moment when some individual or group of individuals conceive of an innovation, and the time when it becomes finally accepted and replaces earlier ways and modes of human conduct” (1994: 256). Novel technologies introduce social, cognitive, and emotional incongruities that must be resolved in order for breakthrough innovations to achieve collective acceptance (i.e., stabilization) within the revised quotidian. And though human beings are creatures of habit, we are also adept at adaptation, capable of solving novel problems, developing new routines, and creatively adjusting to changing circumstances (Bandura, 1998).

Humor is a universal human phenomenon that plays a key role in human adaptation (Flamson & Barrett, 2008). Although preferences for content and style vary across cultures (Ziv, 1988), humor is a fundamental characteristic of our humanity that should be “considered trivial only from the perspective that holds humanity itself to be trivial” (Oring, 2003: x). According to evolutionary perspectives on the topic, the underlying value of humor stems from the fact that it brings usually tacit assumptions and beliefs front-and-center in our consciousness and provides the opportunity to reexamine and revise previously accepted modes of thought (Hurley, Dennett & Adams, 2011). This feature of

humor enables it to be deployed to promote change or resist it, to engender creative problem solving or to censure nonconformity (Martin, 2007). Furthermore, humor is a valid proxy for the implicit attitudes and preferences of individuals (Lynch, 2010), and jokes reflect the underlying tensions, conflicts, and contradictions within a society (Gruner, 1997). As a particularly salient and potent coping mechanism during periods of change (Martin, et al. 1993), humor provides a mechanism for “bringing significant problems down to manageable size” (Winick, 1976: 128). Alongside other common motifs about relationships and sex, politics, religion, and minority groups, jokes about technological innovations surface regularly, and existing joke templates are commonly co-opted to create jokes about emerging technologies (Davies, 2011).

To be clear, the purpose of this research is not to demonstrate that people tell jokes about novel technologies – it is evident that they do – but rather to understand how this phenomenon influences the process of sociotechnical stabilization and can inform strategies that enable breakthrough innovations to cross the chasm from fledgling technologies to taken-for-granted aspects of our everyday lives. In this chapter, I review several complementary theories of humor, describe the implications of these theories for adaptation processes, and unpack the specific social, cognitive, and emotional functions of humor.

HUMOR AND HUMAN ADAPTATION

Teasing Apart Humor and Laughter: The Experience Versus the Expression of Amusement

Although early theorists discussed humor and laughter interchangeably (e.g., Beattie, 1779; Darwin, 1872; Freud, 1905), modern perspectives acknowledge that, although these phenomena frequently coexist, they remain theoretically distinct from one another (Gervais & Wilson, 2005). Humans seldom laugh in the absence of others, and the physiological *expression* of amusement (i.e., smiles and laughter) can be faked or suppressed as needed to conform to social and cultural expectations (Martin, 2007). The common “non-Duchenne laughter” is typified by the contraction of muscles primarily around the mouth whereas a Duchenne expression of happiness or amusement is marked by the significant contraction of muscles around both the eyes and mouth (Duchenne, 1862; Keltner, 1996). By contrast, however, the *experience* of amusement (i.e., humor) is internal and spontaneous. As humor theorist Matthew Hurley and his colleagues observe, “the relation between humor and laughter has some similarity to the relation between thought and speech. Thoughts ‘happen in the mind,’ but their expression in speech acts is usually indirect, monitored, and often censored. There is thought without speech and speech without thought” (Hurley, Dennett & Adams, 2011: 19).

Bolstered in part by new empirical techniques such as fMRI (Fry, 2002), a resurgence of interdisciplinary academic interest in humor has taken hold in recent years. This renaissance spans a number of fields including neuroscience (e.g., Franklin & Adams, 2011), evolutionary biology and sociobiology (e.g., Lynch, 2010; Gervais & Wilson, 2005;

Greengross & Miller, 2011), anthropology (e.g., Flamson & Barrett, 2008), sociology (e.g., Davies, 2011), social psychology (e.g., Proulx, Heine & Vohs, 2010; Warren & McGraw, 2016), linguistics and communications (e.g., Weinberger & Gulas, 1992; Norrick & Chiaro, 2009), as well as organizational behavior and leadership studies (e.g., Cooper, 2005; Robert & Wilbanks, 2012; Avolio, Howell & Sosik, 1999).

Across academic disciplines, there is now wide agreement that humor is a distinct phenomenon from laughter, and current scholars conceptually define humor not in terms of any physical display, but rather its cognitive and emotional manifestations (Fry, 2002). Accordingly, humor can be very simply defined as the cognitive *experience of amusement* and is most commonly associated with the positive *emotion of mirth* (Martin, 2007; Tangney, Miller, Flicker & Barlow, 1996).

Here, I am principally concerned with humor (as opposed to laughter) for two reasons. First, “getting” a joke is a cognitive, social and emotional experience closely associated with our capacity to adapt (Flamson & Barrett, 2008). During this familiar process, our brains resolve a small mystery and we feel something – the positive emotion of mirth – as a result (Hurley, Dennett & Adams, 2011). And second, humor reflects underlying truths and facilitates honest signaling between likeminded individuals. Using implicit association tests (IATs), evolutionary psychologists have empirically demonstrated a strong correlation between what individuals find funny and what they unconsciously hold as true (e.g., those with a strong preference for whites found a stand-up routine about how frightening black neighborhoods are significantly more amusing than those with a weak or no implicit preference) (Lynch, 2010). As a proxy for closely held

biases and beliefs, popular humor holds potential to unmask authentic and unvarnished attitudes and values shared among members of society (Lynch, 2010; Flamson & Barrett, 2008).

Humor as a Selected Trait: The Evolutionary Origins of Humor

Evolutionary perspectives of humor and the principles of positive selection provide a jumping off point for understanding why human beings tell jokes and illuminating the nontrivial role of humor in our everyday lives. Although it is a fairly straightforward exercise to understand how some traits correspond to survival and reproduction – speed and strength to outmaneuver enemies, intelligence to outwit them, etc. – the evolutionary path of other human traits is less clear, and our proclivity for humor is a particular curiosity. Darwin (1872) himself spent a great deal of time pondering how humor could be linked to evolutionary adaptation because it is a seemingly improbable trait. Amusement is a distraction and spontaneous laughter a potentially maladaptive behavior when hunting food or avoiding enemies, he reasoned. So why then is it part of the fundamental human experience?

Insights into the evolutionary link between humor and adaptation remained sparse until scholars began to develop credible theories to address more basic questions about how humor works in the mind and in exchanges between members of a society. Today, evolutionary approaches to humor, such as the encryption-based theory of humor and the computational perspective of humor, focus on the question of *why humor exists as a pervasive, universal form of exchange in human societies*. Complementary approaches to

humor, such as various theories related to cognitive incongruity, alternately focus on the fundamental question and underlying processes of *what we find amusing*. For the purposes of developing a complete understanding of how humor influences the widespread social acceptance or rejection of breakthrough technologies, both of these literatures inform the cognitive and social linkages between humor and human behavior in the context of technological progress.

The Encryption-Based Theory of Humor: A Group-Level Fitness Approach

The encryption-based theory of humor accounts for the cognitive process of “getting” a joke, with additional implications for the social functions of humor. Flamson and Barrett’s (2008) encryption theory of humor suggests that jokes are intentionally obfuscated (i.e., “encrypted”) messages that can only be deciphered if one holds the appropriate, unstated knowledge to decode its meaning, (i.e., the “key”). To put this to the test, Flamson and Barrett conducted a series of experiments in which they varied whether or not unstated knowledge would be necessary to appreciate a joke (high versus low encryption) as shown in Table 2.1 and measured the degree to which participants found jokes in each condition amusing. In colloquial terms, the results of Flamson and Barrett’s experiment confirm the intuition that jokes are not funny if they have to be explained; rather, humor occurs only with hidden subtext.

High encryption	<p>In the confusion of the early days of the Iraq War, many of the smaller stories were missed and are only now being told. On the eve of the war, a bunch of Saddam Hussein's body doubles were waiting in a lounge. They turned on the TV and heard on the news that Saddam's palace had been bombed. One of Saddam's advisors called then and said he had good news and bad news.</p> <p>The doubles said they wanted the good news first, so the advisor said that Saddam had survived the blast. The doubles were greatly relieved.</p> <p>"Then what's the bad news?" they asked.</p> <p>"Saddam lost one of his arms," the advisor replied.</p>
Low encryption	<p><i>Until recently, Saddam Hussein was the brutal dictator of Iraq. Constantly fearful of assassination attempts, Saddam Hussein acquired a number of men to serve as body doubles and make public appearances on his behalf, so they would be the targets.</i> A bunch of his body doubles were waiting a lounge when they heard on the news that Saddam's palace has been bombed. One of Saddam's advisors called them and said he has good news and bad news.</p> <p>The doubles said they wanted the good news first, so the advisor said that Saddam had survived the blast. The doubles were greatly relieved.</p> <p>"Then what's the bad news?" they asked.</p> <p>"Saddam lost one of his arms," the advisor replied, <i>"So we'll have to cut one off of each of you."</i></p>

Table 2.1: A Sample Joke from Flamson and Barrett's (2008) Experiment.

The requirement of a key – that is shared, non-random, unstated knowledge – needed to decode humor, suggests that this trait developed at the group-level as a discreet means of “honestly signaling” shared knowledge, attitudes and beliefs. This encryption process makes humor an efficient and low-stakes mechanism for individuals to “broadcast information about the self and to obtain information about others” (Flamson & Barrett, 2008: 261).

In the context of sociotechnical change, then, the encryption theory implies that messages in humor may be used to express potentially novel, unpopular, taboo, or antiestablishment beliefs and attitudes and to determine whether one is in the company of likeminded others. This is a notable phenomenon because, while the use of breakthrough technologies may be necessarily conspicuous (as in the case of everyday objects such as

the automobile or mobile phone), humor allows for the surreptitious exchange of information, attitudes and beliefs about them.

The Computational Perspective: An Individual Problem-Solving Approach

Building upon evolutionary theory, the computational perspective provides an alternative account for why humor persists as a selected human trait. Whereas the encryption-based theory emphasizes the social dimension of humor and views it through the lens of group-level fitness for survival, the computational approach illuminates the evolutionary benefits that humor confers upon the individual. This perspective posits that humor is essentially our brain's way of bribing us to revisit taken-for-granted knowledge and beliefs in order to debug or update our implicit models of how the world works (Hurley, Dennett & Adams, 2011). Hurley and his coauthors argue that the positive emotion of mirth acts as a potent reward that induces human beings to bring to the surface, audit and potentially revise latent knowledge structures. Humor, they argue, allows individuals to maintain more accurate models of the world and adapt to changing circumstances.

In explaining the link between humor and adaption, the computational perspective suggests “an original adaptive purpose for mirth and the epistemic emotions – to encourage a particular task of knowledge maintenance” (Hurley, et al., 2011: 289). Although they do not directly address the encryption-based theory of humor, the two perspectives are not inherently incompatible: the encryption theory directly addresses the *social and cultural nature of humor* while the computational perspective emphasizes the *emotional and*

neurocognitive mechanics of humor in everyday life. Humor, like hands or language, serves more than one function in the adaptation and survival of our species².

Taken together, these perspectives emphasize that humor can fundamentally contribute to our ability to revise taken-for-granted expectations and schemas. The encrypted information packaged in humor is granted “surreptitious entry” into a person’s mental space (Hurley, et al., 2011) that helps sneak it past the powerful guardian of closely held assumptions and beliefs: confirmation bias. While the confirmation bias compels a person to form expectations based on existing schemas and then seek evidence that reinforces them (Nickerson, 1998), humor does the exact opposite: it compels a person to form expectations based on existing schemas and then violates them. The search for information that follows is rather for the appropriate “key” that can make sense of the violation (i.e., decrypt the joke). Unlike other violations of implicit expectations, humor is generally a pleasant experience accompanied by the positive emotion of mirth. Indeed, after a successful search for the encryption key, the brain rewards itself with a shot of dopamine to celebrate (Mobbs, et al., 2003).

² The encryption-based theory of humor and the computational approach need not be mutually exclusive. With the nested hierarchy framework of the multilevel selection theory of evolution, the computational approach would align with the individual unit of selection whereas the encryption-based theory of humor would align with a group-level unit of selection (Wilson & Sober, 1994).

What Makes Something Funny? Incongruity as a Source of Humor

Despite recent gains in humor research across several fields, it remains difficult to precisely predict the particular content of a joke that a given individual will find amusing³. Content notwithstanding, a number of theoretical contributions seek to identify the underlying cognitive mechanisms of humor and unpack the processes by which a person finds something funny. The literature on humor is diverse, and several complementary and converging theoretical perspectives shed light its social, cognitive, and emotional dimensions. Among these perspectives, those emphasizing the role of cognitive incongruity as the basis of humor have become most popular due to their ability to account for what is funny across a number of contexts.

The following sections expound upon the historical foundations of incongruity theory, discuss modern refinements to the theory, and provide an integration of incongruity theory with the evolutionary approaches covered in the preceding sections.

Forerunners and Foundations of Incongruity Theory⁴

Jokes are born out of social ambiguities and tensions (Davies, 2011), and the underlying cognitive mechanisms of humor reflect this internal process of grappling with

³ Contemporary scholars have begun this task. With a database of over 40,000 jokes, recent studies (Wiseman, 2007) have sought to classify common themes of Western humor, and claim to have identified the “World’s Funniest Joke”:

*Two hunters are out in the woods when one of them collapses. He doesn't seem to be breathing and his eyes are glazed. The other guy whips out his phone and calls the emergency services. He gasps, "My friend is dead! What can I do?"
The operator says "Calm down. I can help. First, let's make sure he's dead."
There is a silence, then a gunshot is heard.
Back on the phone, the guy says "OK, now what?"*

⁴ Humor is a complex and multidimensional construct (Martin, 2007), and in this chapter I emphasize evolutionary approaches and incongruity-based theories of humor. Freud’s (1905) Relief Theory of Humor as well as the Superiority Theory of Humor (Hobbes, 1840; Gruner, 1997) are not discussed in depth

conflict and contradiction. The intuition that comedy stems from a mismatch between what is expected versus what actually happens traces back to Aristotle's essays on *The Art of Rhetoric* in which he illustrates how a speaker "can get a laugh by setting up a certain expectation in the audience, and then jolting them with something they did not expect" (Morreall, 1987: 14). This violation of expectations is quickly illustrated in the common "set up, punch line" syntax of many jokes, and hints at the significance of incongruity in humor.

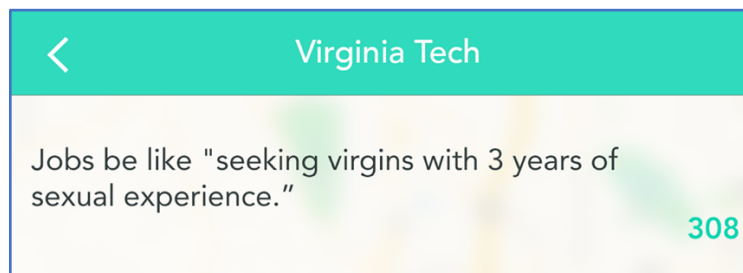


Figure 2.1: Example of Violation of Expectations in Joke from Social Media Forum.

The joke seen above in Figure 2.1 illustrates this contradictory structure. The quip, posted on an anonymous Virginia Tech YikYak forum, exploits the inherent contradiction between virginity and substantial sexual experience to evoke humor while making a point about the difficulty of the job market for recent college graduates.

Eighteenth-century philosopher James Beattie was the first to characterize humor in terms of contradiction and incongruity: "Laughter arises from the view of two or more inconsistent, unsuitable, or incongruous parts or circumstances, considered as united in one

because they have largely been supplanted in favor of more precise incongruity theories in the current social psychology literature.

complex object or assemblage, or as acquiring a sort of mutual relations from the peculiar manner in which the mind takes notice of them” (1779: 318). Likewise, Immanuel Kant argued that the comedic effect of a joke stems from the incongruity between a specific expectation and the rapid evaporation of that expectation: “Laughter is an affection arising from the sudden transformation of a strained expectation into nothing” (1892: 1,1, 54).

In modern terms, jokes are funny because they call to mind two seemingly dissimilar or incompatible frames of reference (i.e., schemas) and connect them in an unexpected manner. In recent decades, the basic intuition expressed by Aristotle, Beattie, and Kant has been distilled into more nuanced incongruity theories of humor. The following one-liner by stand-up comedian Emo Philips illustrates this phenomenon:

A computer once beat me at chess, but it was no match for me at kickboxing.

The first part of this quip calls to mind a person engaged in a contest of wits with a programmed computer game and, based on this frame of reference, we make predictions about what will happen next. In the second part of the joke, these implicit predictions are unexpectedly violated. We must call to mind a second frame of reference – that of a physical altercation with an inanimate object – to get the joke. Through the process of resolving the contradictions between the two frames of reference, the humorous implication that the person is frustrated with the computer becomes apparent.

Modern incarnations of incongruity theory trace their direct lineage to German philosopher Arthur Schopenhauer’s essay *The World as Will and Representation* in which he asserts that “laughter results from nothing but the perceived incongruity between a concept and the real objects that has been thought through it in some relation; and laughter itself is just the

expression of this incongruity” (1969: 59). Further, William Hazlitt’s lecture “On Wit and Humor” (1859) built upon the notion of incongruity in the production of amusement, yet also noted the role of incongruity in triggering alternate emotions such as sadness and fear (Morreall, 1987). Hazlitt’s critique hints at a fundamental weakness in incongruity theory that 21st century scholars have grappled with: although humor is typically linked to cognitive incongruity, cognitive incongruity itself may produce a number of responses. In other words, how can incongruity theory predict a humorous response instead of, say, a frightened one? This question was in the impetus for the first major refinement to incongruity theory: incongruity-resolution theory.

Refinements to Incongruity Theory

Cognitive incongruity is a common facet of the human experience, directing our attention to that which is novel, unexpected, or out of place in our environment (Fiske & Taylor, 1991), and incongruity alone is not sufficient to produce the experience of humor. A two-stage model of the role of contradiction in humor was put forth by Jerry Suls (1972) who proposed an information processing-based view of humor in which the forming of predictive expectations which are suddenly violated represents only the first stage. This first stage of information-processing corresponds to Schopenhaur and others’ notion of incongruity. Suls’s novel contribution was the proposal of a second stage: resolution of the incongruity. During this second stage, the receiver engages in the task of searching for the information that allows him or her to reconcile the incongruous parts of a joke. The primary objective of the second stage is *problem solving*, i.e., identifying the unexpected linkages

that allow the receiver to get the joke. Humor, according to the Incongruity Resolution model, “derives from experiencing a sudden incongruity *which is then made congruous*” (Suls, 1972: 82, emphasis added). To illustrate this phenomenon, Suls (1972: 83) provides the following example:

“One prostitute said to another, ‘Can you lend me ten dollars until I get back on my back?’”

In the first stage of information processing, the receiver likely forms the expectation that the prostitute will say “...until I get back on my feet” based on the schema for the common idiom for pulling oneself out of hard times. This expectation is abruptly violated, and in the second stage, the receiver must engage in problem solving to reconcile the meaning of the text by locating the knowledge that prostitutes frequently work on their back. If instead the prostitute had remarked, “...until I get back on my hands,” the text would still be recognized as incongruous (i.e., stage one), but would fail to produce a comedic effect because it is not evidently reconcilable in the context of the joke (Suls, 1972: 83-84).

A number of experiments bolster the claim that that both cognitive incongruity *and* its resolution contribute to the experience of humor. In one set of experiments, for example, school children were presented with cartoons in either their original form or redacted to remove the context of incongruity or its resolution. Cartoons that had been stripped of incongruity or resolution clues elicited significantly less expressed (based on facial analysis) mirth and self-reported amusement compared to the original versions (Shultz, 1972). Furthermore, another study of the childhood development of the appreciation of humor using funny riddles, found that incongruity alone may be a sufficient condition to

produce amusement in younger children (e.g., ages six and below), while humor appreciation was significantly enhanced under conditions of resolvable incongruity for older children (e.g., ages eight and above) (Shultz & Horibe, 1974).

For adults, whether resolution is a necessary part of getting a joke or whether incongruity alone is sufficient to generate the experience of humor (i.e., incongruity theory versus incongruity-resolution theory) has long been a subject of debate (Warren & McGraw, 2016). In proposing the two-stage Incongruity Resolution Theory of humor, Suls narrowed the scope of his model to verbal jokes and captioned cartoons, setting a boundary at other forms of non-narrative humor that he characterized as Gestalt in nature:

“Certain other forms of humor do not fit into the present paradigm, e.g., physical forms of slapstick, exaggerated gestures and facial expressions, cartoons without captions, and political caricatures. The forms of humor covered by the model may be characterized as narrative and elicit their humor from a sequence of ideas. The other forms of humor may be considered as nonnarrative and obtain their humor from a Gestalt configuration derived from a single exposure” (Suls, 1972: 81-82).

Although many scholars have disregarded these boundary conditions in their theoretical discussions of humor (Morreall, 1987), empirical evidence suggests that, under certain conditions, incongruity alone *is* sufficient to produce the experience of humor. For instance, in a series of experiments adult participants were asked to move heavy weights from one spot to another. One of the weights, however, was unexpectedly feather light! When participants lifted it up, the researchers noted outward signs of amusement such as authentic (i.e., Duchenne) smiles and laughter (Nerhardt, 1970; Nerhardt, 1976).

In the two-stage Incongruity Resolution Theory, humor is divided into *textual* (i.e., that which requires problem solving and resolution to produce amusement) and physical forms

of humor. However, others have argued that the necessity of incongruity resolution for producing comedic effect may instead depend on the type of schemata violation that occurs (Deckers & Buttram, 1990). The weight-moving experiment, for instance, conjures *within-schemata* incongruity in that “the range of a series of weights define the limits of the weight variable that is expected” (Deckers & Buttram, 1990). On the other hand, higher-order humor that relies upon *between-schemata* incongruity, such as Suls’s prostitute joke or the caption experiment conducted with school children, may require problem solving and reconciliation in order to experience the humorous intent of the joke or cartoon.

Even with the insight of the role of incongruity resolution in the appreciation of humor, a persistent critique of incongruity theories remains: although experiences that evoke amusement can be traced back to incongruity, many incongruous experiences are not perceived as humorous. What, then, separates humorous incongruity from unamusing experiences of incongruity? Indeed, the essential task of problem solving can be described in terms of identifying and resolving incongruity regardless of its humorous implications. One school of thought proposes the notion of *appropriate incongruity*, i.e., “the perception of a relationship of elements from domains that are generally regarded as incongruous” (Oring, 1992: 2). Consider the following example:

“*When is a door not a door?*”
“*When it’s ajar.*”

In this pun, the receiver is presented with the incongruous notion that there is something that is both a door and not a door. This incongruity is recognized as appropriate in the context of the linkage “ajar” and “a jar” as homophones in the English language (Oring,

1992). This distinction between resolvable incongruity and appropriate incongruity is murky, however, and relaxing the construct to include a broader range of humor comes at the cost of specificity and falsifiability of the core concept of incongruity.

A recent refinement to the concept of incongruity, the Benign Violation Theory, has added clarity and theoretical rigor to this core construct in the humor literature. According to the benign violation hypothesis, three conditions are necessary and sufficient to produce a humorous experience: “A situation must be appraised as a violation, a situation must be appraised as benign, and these two appraisals must occur simultaneously” (McGraw & Warren, 2010: 1142). *A violation is defined as something that threatens one’s sense of how things should be, and this something is simultaneously benign if it is appraised as harmless or inconsequential.* Such a violation may come in the form of a physical threat or an identity threat or as something perceived to be wrong, incorrect, or illogical according to the context and sociocultural norms (Warren & McGraw, 2016: 409).

In addition to violation, the benign violation theory conceptually parses out and empirically evaluates three other distinct forms of incongruity: surprise (i.e., something unexpected), juxtaposition (i.e., the simultaneous perception of incompatible elements or perceptions), and atypicality (i.e., something different than what is normally expected) (Warren & McGraw, 2016: 409). Although surprise in particular has a longstanding history in the humor literature extending back to Rene Descartes, empirical evidence demonstrates that none of these additional forms of incongruity stand alone as necessary and sufficient conditions for the production of humor. When coupled with violation (i.e., something that disrupts people’s sense of how the world ought to be), however, these forms of incongruity

may have an additive effect on the experience of humor (McGraw & Warren, 2010; Warren & McGraw, 2016).

In order for a violation to produce humor, it must be simultaneously evaluated as benign in nature. “A violation can seem benign if (a) a salient norm suggests that something is wrong but another salient norm suggests that it is acceptable, (b) one is only weakly committed to the violated norm, or (c) the violation is psychologically distant” (Warren & McGraw, 2016: 1142). In other words, a benign violation is one that may present a threat to an individual’s well-being, identity, or belief structure yet, at the same time, seems okay (Warren & McGraw, 2016).

Integrating Evolutionary Approaches and Incongruity Theories

The encryption-based theory of humor is inherently compatible with incongruity theories. Flamson and Barrett contend that incongruity-resolution is a subprocess within the encryption process: “Resolving incongruity or relieving tension may also reflect what we see as the final stage of the decryption process, where the encrypted meaning is derived from the more mundane surface meaning. Pleasurable surprise [mirth] occurs when hidden implicatures are discovered” (2008: 278). Likewise, the computational perspective is also compatible with the popular notion of incongruity. The central underlying mechanism in the computational perspective is the discovery of contradictions and the faulty inferences associated with them embedded in our mental representations of the world. In summary, humor arises from the discovery of an incongruity between what was previously thought to be versus what is now perceived to be true (Hurley, Dennett & Adams, 2011: 293).

SOCIAL, COGNITIVE AND EMOTIONAL FUNCTIONS OF HUMOR

Humor serves numerous functions in our everyday lives, some of which are obvious. A well-timed joke, for instance, can ease the tension of a stressful situation, cheer us up from a rotten mood, or let us know we're in the presence of another person who sees the world in similar way we do. Other functions of humor are less obvious, however. In the following section, I unpack the effects of humor across three dimensions: social, cognitive, and emotional. These effects are summarized in Figure 2.2 below.

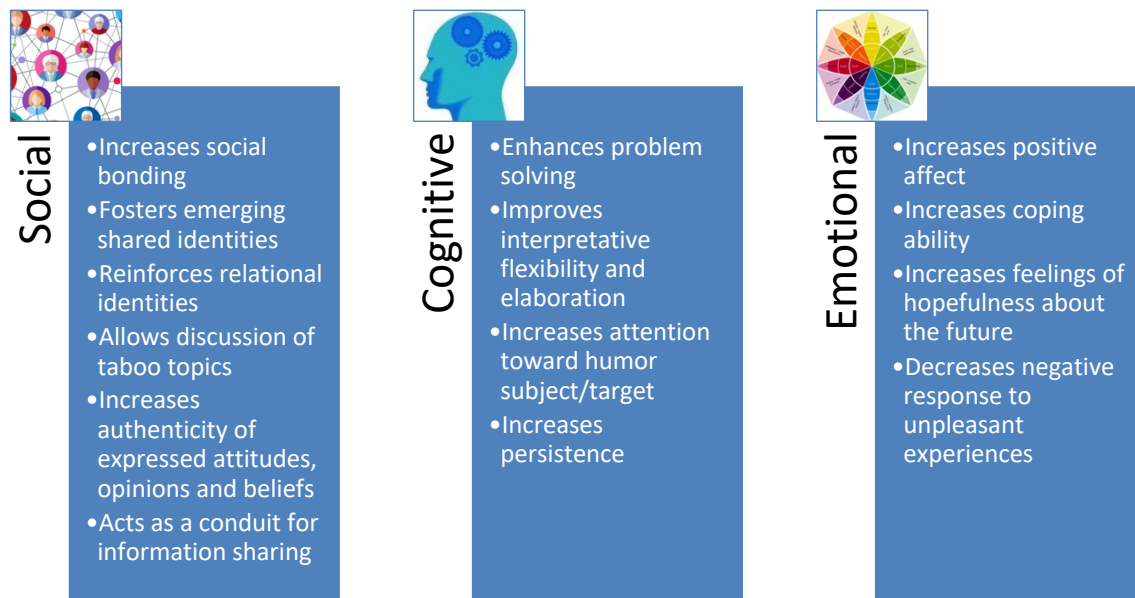


Figure 2.2: Social, Cognitive and Emotional Functions of Humor

Social Functions of Humor

Humor is “a fundamentally social phenomenon” (Martin, 2007: 5), and when we joke with others, information is exchanged, values and attitudes are expressed, and social bonds are reinforced. In contrast to less playful forms of communication, humor allows members of

a society to suspend social norms and permits the discussion of unpopular attitudes or beliefs without the typical consequences that accompany social deviance (Davies, 2011). Furthermore, humor provides a low-stakes mechanism for testing the social acceptability of an emerging attitude or belief (with the classic fallback “Just kidding!” if the topic is not well received) as well as a means for identifying and solidifying bonds with likeminded others.

Conversational humor has been demonstrated to reinforce relational identities among individuals, and this phenomenon holds for communities across the globe, in various languages, and in locations as diverse as Philadelphia, Pennsylvania and Buenos Aires, Argentina (Boxer & Cortes-Conde, 1997). Humor not only serves to reinforce identity, it can serve a notable role in the formation of emerging identities as well. For example, in one study of group cohesion among police executives in a six-week residential training program, “it quickly became evident that humor... was a potent and pervasive communication medium for fostering a sense of belonging and meaning” (Terrion & Ashforth, 2002:56). In this study, humor served to enact a sense of community among a temporary group, fostering a shared identity as it provided a mechanism for developing shared trust, inclusion, and solidarity.

As a surreptitious means of “honest signaling” (Flamson & Barrett, 2008) and revealing authentic information about one’s attitudes, beliefs, and values (Lynch, 2010), humor provides a low risk form of information sharing in order to identify likeminded others. Furthermore, the apparently playful nature of humor suspends social norms and allows for the discussion of otherwise off-limits or taboo topics. It is not uncommon for

popular jokes to tackle sensitive and taboo subjects related to sex, race, death, disasters, and the like that may be unacceptable topics in traditional conversation. For example, as American society grappled with the contrast between the institution of the ideal nuclear family and its practical reality in the early 1960s, dark humor playing upon family tensions became popular (Boskin, 1997:57).

*Mommy, why are we pushing the car off the cliff?
Shut up, or you'll wake up your father.*

This trend culminated in the “dead baby” joke cycle which played upon the taboo of murdering children, bringing twisted levity to the difficulties of family life hidden behind the veneer of suburban picket fences and tidy lawns.

*What's red and green, red and green?
A baby going through a lawn mower.*

As these macabre jokes from the mid-20th century illustrate, members of society often turn to humor to cope with underlying social anxieties and frustrations. In their qualitative study investigating how firms manage the stigma of bankruptcy and related negative social evaluations, for instance, Sutton and Callahan (1987) observed that humor and joking behaviors were deployed both within the firm and in communication with outsiders. Based on their observations, they proposed humor as one of four core strategies organizations may use to cope with stigma. In a similar vein, a four-year ethnography of homeless children in the San Francisco Bay area identified humor as a strategy deployed by the youth to negotiate their disenfranchised social position. In this context, humor was used to emphasize shared identity and create solidarity within the disenfranchised group by

"reinforcing their assumed superiority over other stigmatized groups" (Roschelle & Kauffman, 2004:38).

Popular humor is not monolithic across society and rather operates at a subcultural level based upon socioeconomic differences and disparate interests. That said, popular humor both reflects and influences the cultural zeitgeist, i.e., spirit of the times, and "the various types of people's humor provide a cultural seismograph that registers the slightest tremors of daily existence" (Boskin, 1997: 202-203). As an "early warning system of emerging social issues" (Boskin, 1997: 204), jokes reveal underlying tensions and anxieties often before these issues become otherwise well-articulated in the collective discourse.

Cognitive and Emotional Functions of Humor

The ability to get a joke comes not only from appreciating its inherent incongruity and novelty, but also from enjoying the small mystery contained within it. Someone who has been initially slow to understand the meaning of a joke can relate to the idiom "He who laughs last, laughs best" because the effort expended in decrypting the joke is often met in kind with an intense feeling of mirth. From the computational evolutionary approach, humor provides this reward (i.e., the positive emotional experience of mirth) to incentivize the continuous auditing of our understanding of the world around us and our place in it (Hurley, et al., 2011). Following this perspective, the novelty and incongruity inherent in humor captures and directs our attention to potentially flawed underlying knowledge structures (i.e., schemas, scripts, etc.), and the experience of mirth provides a positive frame of mind that is more conducive to learning, problem solving, and ultimately revising

knowledge structures than do neutral or negative moods (Fiske & Taylor, 1991; Hurley, et al., 2011; Martin, 2007).

The power of humor to alter cognition and foster adaptation stems in large part from the potency of the positive emotional affect it creates. According to the dopamine hypothesis, pleasant experiences like getting a good joke increase dopamine levels in the brain, creating positive affect which has significant implications for cognitive functions⁵ (Ashby, Isen & Turken, 1999; Mobbs, et al., 2003). This release of dopamine activates “brain regions that include frontal areas responsible for high-level thinking, executive processes such as working memory, and processes such as ability to switch attention and resolve conflicting stimuli” (Isen, 2008: 550). The benefits of positive affect on cognitive faculties are numerous and further include greater interpretative flexibility and elaboration (Isen, 2008), broadened attention without diminished focus (Derryberry, 1993; Baumann & Kuhl, 2005), and enhanced creativity and problem solving (Amabile, Barsade, Mueller & Staw, 2005).

Individuals experiencing the kind of positive affect that humor induces outperform those with negative or neutral affect in a variety of tasks that rely on creativity, innovative thinking, and problem solving. For example, participants in positive affect conditions trample those in control conditions on Duncker and Lees’ (1945) candle problem task. For this test of innovative thinking, individuals are provided with a box of thumbtacks, a book of matches, and a candle, and asked to affix the candle to the wall so that it can be lit

⁵ Although not with the intention to directly investigate the effects of humor, exposure to various forms of comedy is a common method researchers use to induce positive affect in their study participants (e.g. Isen, Johnson, Mertz & Robinson, 1985).

without wax dripping on the floor. To successfully affix the candle on the wall, the participant must recognize that the box holding the tacks is the key to solution and use this box as a platform for the candle. The influence of emotion on the ability to successfully execute this innovative task is significant with 58-75% of those in positive affect conditions solving it correctly compared to only 11-16% in the control group (Isen, Daubman & Nowicki, 1987; Isen, 2008).

When confronted with threats or adversity, humor is also a powerful coping mechanism for reducing stress and making challenges seem, at least momentarily, manageable. “Because it inherently involves incongruity and multiple interpretations, humor provides a way for the individual to shift perspective on a stressful situation, reappraising it from a new and less threatening point of view... Thus, by laughing at the fundamental incongruities of life and diminishing threats by turning them into objects of nonserious play, humor is a way of refusing to be overcome by the people and situations, both large and small, that threaten our well-being” (Martin, 2007: 19). Moreover, joking about a threatening topic can provide a sense of control or superiority over it (Morreall, 1987), and humor itself can evoke feelings of hopefulness about the future (Vilaytho, Arnau, Rosen & Mascaro, 2003).

Humor in the Context of Breakthrough Technologies

In the context of novel and unsettled technologies, humor becomes an important mechanism for honest signaling of progressive attitudes and beliefs about a new technology, one which allows members of a society to surreptitiously endorse a new

technology with appearing to, themselves, directly challenge the status quo. The manifold social, cognitive, and emotional functions of humor hold potential to facilitate adaptation to new technologies and help negotiate the hurdles breakthrough innovations face along the path to widespread acceptance and successful commercialization. Sharing jokes about an unfamiliar technology introduces the opportunity to consciously evaluate and resolve incongruous and incomplete schema, nudging individuals and collectivities toward a revised shared understanding of its value and place in society. The positive emotional experience of mirth that accompanies humor holds potential to fortify individuals against common negative emotional reactions toward novel technologies and cope with the stress of externalities. Given the fraught path toward successful commercialization faced by breakthrough innovations, a deeper understanding of the role of humor in adaptation to and acceptance of new technologies is warranted. In the following chapters, the linkages between the acceptance of breakthrough technologies, humor, and social acceptance are further explored through an historical case study of popular jokes about automobile from its initial commercial introduction through its rise to a dominant technology, richly woven into the revised quotidian of the early 20th century.

Chapter 3: Methods

Without society's widespread approval, breakthrough innovations remain controversial and, in spite of nascent signs of progress in the marketplace, their long-term fate hangs in the balance. The prior chapters have argued that popular humor may play a unique and crucial role in widespread responses to novel technologies.

The relationship between new technologies and humor is manifold. Not only can popular humor can serve as a barometer for the contradictions and underlying tensions that breakthrough technologies introduce into society, the inner workings of humor hold potential to help shepherd common emotional and cognitive incongruities to a point of resolution. This form of candid social discourse has not yet received attention in the management and innovation literatures, and this study seeks to answer the following fundamental question: How does popular humor influence the widespread acceptance and adoption of breakthrough technologies in society?

To understand the relationship between popular humor and widespread social responses to breakthrough technologies, I have conducted an in-depth longitudinal case study based on jokes told about the automobile in the United States during the "Automobile Age" which spans from its initial commercial introduction in 1897 to the point of widespread adoption in 1929. Leveraging an assembled database of 2,627 jokes, the first wave of analysis focused on the type of discourse that surrounded the automobile over time (i.e., joke themes and tropes that came and went in popularity). This wave of analysis enabled me to observe of the appearance and resolution of dominant concerns over time,

as well as how these concerns related to automobile category generally or certain examples of the technology in particular (e.g., Ford's Model T). Next, a second wave of analysis focused on the "mini-cases" of individual jokes that were repeated over time with the core joke template remaining intact but often with small but telling details changed to reflect updated attitudes toward the automobile as the technology spread throughout society and widespread social acceptance began to take root. This second wave of analysis was used to triangulate and confirm patterns identified in the first wave of analysis. Lastly, discursive themes derived from popular humor were compared to those derived from popular media coverage (e.g., magazine articles) during the same period to determine whether the popular humor acts as a distinctive discursive mechanism during the introduction of a breakthrough technology.

RESEARCH SETTING

Following the logic of disruptions to the quotidian, particular attributes of new technologies may make them more salient targets for popular humor. These attributes relate to the characteristics of the technology or its user base that are strikingly incongruent with everyday life and, as such, increase the severity of disruptions to the quotidian. Such characteristics include (1) higher degree of apparent novelty, (2) public conspicuousness, (3) uneven distribution of benefits and social costs, (4) apparent conflict with sacred beliefs or practices, and (5) relationship to divisive or controversial social groups.

The dawn of the automobile is a salient theoretical context for studying the relationship between popular humor and the widespread social acceptance of a breakthrough technology. As an instance of disruption to the quotidian (Snow, et al., 1998), the impact of the automobile on the rhythms of everyday life for ordinary members of society was extreme (Pettigrew, 1990), and the overlap between the rise of the automobile and an abundance of published jokes at the time provides a rare opportunity to examine the relationship between humor and new technologies.

The Automobile Disrupts the Patterns of Everyday Life

The sweeping impact of the automobile on day-to-day life in the United States is difficult to exaggerate. In order for the auto to become an accepted and dominant technology, society had to change in tangible and fundamental ways. Part of the reason that this technology necessitated the reshaping of the quotidian is that the use of the automobile inherently played out in the public sphere. Furthermore, the automobile represented not only a high degree of technological novelty, it also made feasible activities with a high degree of *social* novelty. The following section elaborates upon features of the automobile that make it an especially appropriate technology for examining the theoretical relationship between breakthrough innovations and humor.

The automobile was quintessentially and unapologetically conspicuous. By its very nature, the automobile was a technology consumed publicly and openly on shared roads and thoroughfares. Although the earliest wealthy owners may have been able to joyride around large estates, the major advantage of gasoline combustion automobiles over

existing personal transportation alternatives such as horses and bicycles was its ability to quickly cover far-reaching distances (Kirsch, 2000). Furthermore, automobiles were loud, gasoline combustion gave off a distinct and unpleasant odor, and the rapid speed of cars kicked up plumes of dirt visible at a distance; thus, they announced their arrival to the public in plain terms (Flink, 1970). Not only did automobiles draw attention with movement, noise, and smell, contrary to the now-common lore that adopters could only have “any color you want as long as it’s black”, autos also drew significant attention with their visual aesthetic: many early cars were painted in a range of eye-catching colors such as bright blue, red, and green.

From a functional perspective, the automobile boasted a high degree of novelty over commonly accepted technologies of the day. Previous forms of personal transportation included horses and other beasts of burden as well as the bicycle which had come into vogue in the 1870s (Rae, 1965). Both of these forms of personal transportation were constrained by the physical limitations of livestock and human bodies, and travel of greater than 20 miles per day was uncommon. In practice, this meant that most individuals lived their day-to-day lives within a 10-mile radius of their residence that would allow them to get to their destination and back within the same day (Berger, 1979). Thus, the automobile’s ability to cruise along at 20 miles or more *per hour* without fatiguing was a radical advancement over existing alternatives. For long distance travel, the railroad infrastructure was in place by 1869; however, railways only provided efficient transportation from one depot to another and ran on predetermined schedules. The automobile, by contrast, provided point-to-point transportation across the entire country,

at a pace and schedule determined by the whims of the individual driver. In sum, the long-haul capabilities and point-to-point flexibility of the automobile provided an unprecedented degree of individual movement and freedom (Flink, 1988).

Lastly, the automobile is theoretically salient because it had an observable impact on society as a whole, including users and non-users alike. Regardless of one's place in society or status as an owner or an other, the adoption of the automobile was a phenomenon that pervaded everyday life. The use of the automobile created negative externalities such that a host of social costs were displaced onto the public while owners retained the exclusive benefits of the technology's use. For example, the use of the automobile led to semi-private roads becoming busy thoroughfares, the imperiling of human life and animals, and the rise of air and noise pollution (Berger, 1979). In urban areas, local children were struck and killed by cars while playing in the street, and close-knit neighborhoods were haphazardly split apart in favor of new roadways (Burns, 1999; Loomis, 2015). As the use of the technology increased, so too did the scale of these externalities, leading to what historian James Flink referred to as pockets of "rabid motorphobia" throughout the United States (1970: 8). In his longitudinal study of automobile diffusion and social attitudes toward the technology in the small town of Dexter, Michigan, for example, sociologist Lowell Carr observed (1932: 65):

From 1902 to 1905, ridicule and opposition dominated the tone of the references. Of the 50 editorial comments during these years, not one favored the automobile, only six were neutral, and 44 were distinctly hostile. Of the 70 other references, 26 had to do with speed or accidents, and only 14 with what might be called business or normal use of the automobile. Apparently there was a widespread fear in the Dexter region at this time that the automobile was escaping social control.

Yet automobiles ultimately changed the previously accepted ways of life fundamentally and pervasively (Berger, 2001). Over time, the ascent of the automobile radically altered where people lived, how they worked and sought leisure; it reshaped patterns of education, courtship, gender relations and family structure, and even the practice of religion (Flink, 1970: 3). “Family life simply became more complex. No longer did one choose friends, recreation, and religion on the basis of proximity.” (Berger, 1979: 74) For example, common family routines were interrupted as the typical after dinner stroll as a nuclear family was replaced by members splintering off to go for a spin. By contrast, new forms of family bonding became feasible as the automobile allowed for more frequent contact with distant family members (Berger, 2001). And in terms of courtship, the auto provided a “parlor or bedroom on wheels” that afforded an unprecedented ability for young couples to “escape the prying eyes of adults” (Berger, 2001: xxi).

The automobile also gave rise to heightened participation in and new forms of popular entertainment and recreation. It became increasingly practical for people to gather en masse at distant locales such as seaside resorts, and a parallel increase in individual recreational activities – sport hunting, for example – also took hold as it became more practical for people to access out-of-the-way places (Lynd & Lynd, 1929; Berger, 2001). Additionally, the automobile challenged deeply ingrained cultural values and norms. For women, the automobile provided transportation with a measure of safety, privacy, and speed; with the car, women could more readily escape the gravitational pull of the homefront and expand their sphere of activities (which might include new-found

participation in political and social activities) without the presence of a male chaperone. Even religious observance was altered by the rise of the auto as the solemnity and sanctity of the Sabbath was challenged by the exuberance of a new tradition: the Sunday Drive (Berger, 2001).

One of the most notable impacts of the automobile was as an agent of social and cultural change. Technologies and the manner in which they are woven into the fabric of society have the capacity to lead to greater social and cultural convergence or, alternatively, to greater fragmentation. For example, the television initially led to social and cultural convergence as broad swaths of the public consumed the same media at the same time. However, the proliferation of multiple televisions in the home, coupled with the expansion of programming options via cable TV and the rise of on-demand media has reversed this trend and led to rapid social and cultural fragmentation (Meyrowitz, 1986; Ludes, 2008). Conversely, although the automobile may have initially led to fragmentation in the public sphere, by the late 1920s its adoption was a powerful force of social and cultural homogenization “to an extent unknown before, as regional, sectional, and rural-urban differences were subordinated to the mass culture of which the automobile was an integral part” (Berger, 2001: xxi). When sociologists Robert and Helen Lynd conducted their landmark study on daily life in early 20th century America, one interviewee bristled at their inquiry: “Why on earth do you need to study what’s changing in this county?” he said, “I can tell you what’s happening in four letters: A-U-T-O!” (Lynd & Lynd, 1929: 251).

Popular Humor at the Dawn of the Automobile Revolution

The crucial period of study for the automobile begins with its fledgling commercialization in 1897 through its ascent and weaving into the fabric of American society. By 1929, the end of the Automobile Age, the auto had become a fixture in the daily lives of Americans and a taken-for-granted part of the new quotidian. Then, as now, popular humor, was a pervasive form of social expression and discourse. During the early part of the 20th century, popular humor was shared in day-to-day conversations and captured in the public sphere primarily in text through periodicals, books, and pamphlets. Analogous to internet image memes and viral videos today, small, inexpensive and mass-produced “joke book” pamphlets were the popular media format du jour for sharing humor during the turn of the 20th century and into the 1920s (Weiss, 1943). Humor was also expressed through staged plays, Vaudeville performances, and the emerging media of silent films. Radio broadcasts were introduced later in the period (i.e., the 1920s) as the first comedy programming was introduced in a single market in 1926 (Kantor & Malson, 2008).

Joke books uniquely, however, represented the voice of the people. The jokes’ authors were anonymous, therefore the popularity of this form of humor cannot be credited to the celebrity of a famous figure. As illustrated by the joke book excerpt in Figure 3.1, joke books were typically compiled based on material mailed in from the general public for the promised compensation of \$1 per published joke. They were sold for pocket change at general stores and gas stations (commonly advertised as “25 Cents Worth of Jokes for 10 Cents!”) and were meant to be an ephemeral item (Weiss, 1947).

The reader will note that in many cases in this book credit is given some person for having contributed certain jokes. These paragraphs and stories were received in answer to an offer to pay \$1 each for all jokes sent to us by the readers of the first number of Jokes and Jests about the Ford, which had not yet appeared in print and which we considered worth using for this issue.

Figure 3.1: Excerpt from Foreword of “Jokes and Jests About the Ford: Volume II”

Auto historian James Flink laments the lack of “man on the street” perspective on the social revolution of the automobile: “The American automobile revolution did not become a topic for serious scholarly study until almost a generation after the introduction of the motor vehicle in the United States, and then no one has the foresight to survey systematically the man on the street about what he thought happened” (1970: 7). Of course, the documented joke cycle in part makes up for this lack of foresight. Although individual jokes may be used to illustrate themes, no *one* joke represents the attitudes and beliefs of an entire culture or society. After all, different people find different things funny. However, the aggregate themes in widespread *joke cycles* can provide a unique view into the social values, norms, and tensions of a given time and place. Joke cycles – i.e., “clusters of jokes that emerge, evolve, and eventually plateau” (Phillips, 2015:116) – are used as a common unit of analysis in humor research (e.g., Barrick, 1980; Simons, 1986; Dundes, 1987; Rahkonen, 2000; Ellis, 2001; Abedinifard, 2016) because they illuminate themes that are

telling about the order of society and the serious tensions coursing beneath its surface in a given period of time (Davies, 2011).

Jokes, unlike other forms of humorous cultural expression and ephemera such as novels and diaries, are characteristically brief. They are compact, succinct time capsules of social thought and opinion. Furthermore, as a result of this structural constraint, jokes “get to the point” quickly; characters and plots are rapidly developed, and underlying social tensions expediently unmasked with minimal excess embellishment.

Additionally, it goes without saying that those sharing jokes and laughs in the early 20th century probably never suspected that their words would be dissected by an academic researcher a century later. Aside from the obvious benefit afforded to archival research of eschewing researcher demand concerns, popular humor provides benefits that go a step beyond typical archival discourse analysis in that it also significantly mitigates social desirability bias. Indeed, popular humor is precisely the channel of communication used to circumvent the constraints of desirable social norms and discuss taboo topics and authentic, even if unpopular, attitudes.

DATA COLLECTION

Acquisition of resources for this project began with the identification of a large collection of cultural ephemera related to the automobile located at the Benson Ford Research Center (BFRC) on the campus of the Henry Ford Museum in Dearborn, Michigan. The holdings of the BFRC included a rare collection of 11 original American automobile joke books from the early 20th century, the only known archive of this kind.

To estimate the representativeness of the BFRC collection and identify additional artifacts for inclusion in the dataset, I conducted a systematic and exhaustive search of the U.S. Copyright records for the time period of interest (1897 to 1929). A keyword list was developed, detailed in Appendix B, which accounted for wildcard variations and included words that referenced automobile technology or culture (e.g., auto and chauffeur), names of auto manufacturers and common models (e.g., Ford, GM, and Oakland) common slang for automobiles (e.g., flivver and Lizzie), major automotive events (e.g., the Great Race) and words commonly appearing in known joke book titles (e.g., jest and fun). Any titles that contained relevant keywords were scrutinized for relevance and, as appropriate, added to the existing collection. This effort led to the discovery and acquisition⁶ of 15 additional joke books for a total collection of 26 books.

In order to create an electronic database for the collection, all pages of the original joke books were scanned, converted to suggested ASCII text via Abby FineReader, manually reviewed and corrected to reflect original text, extracted into a relational database for coding and analysis, and assigned a unique identifier based on year of publication, source, and chronological appearance in its joke book. In order to accurately capture jokes that would be shared from person to person in popular discourse, this initial dataset was reviewed, analyzed, and streamlined in two ways. First, because it was not uncommon for published jokes to be accompanied by humorous images such as cartoons, published jokes

⁶ Joke book titles discovered via the copyright search were acquired via library services or purchased from online rare book dealers. At the conclusion of this project, the additional artifacts will be donated to the BFRC to complete their collection.

were eliminated from the main dataset if the text did not make sense on its own. Second, jokes shared in verbal discourse must be simple and easily memorized, and thus are short in length (Martin, 2007). For the overall dataset, jokes averaged 48 words with a median of 33 words. As shown in Figure 3.2, the word count distribution clustered closely to the median.

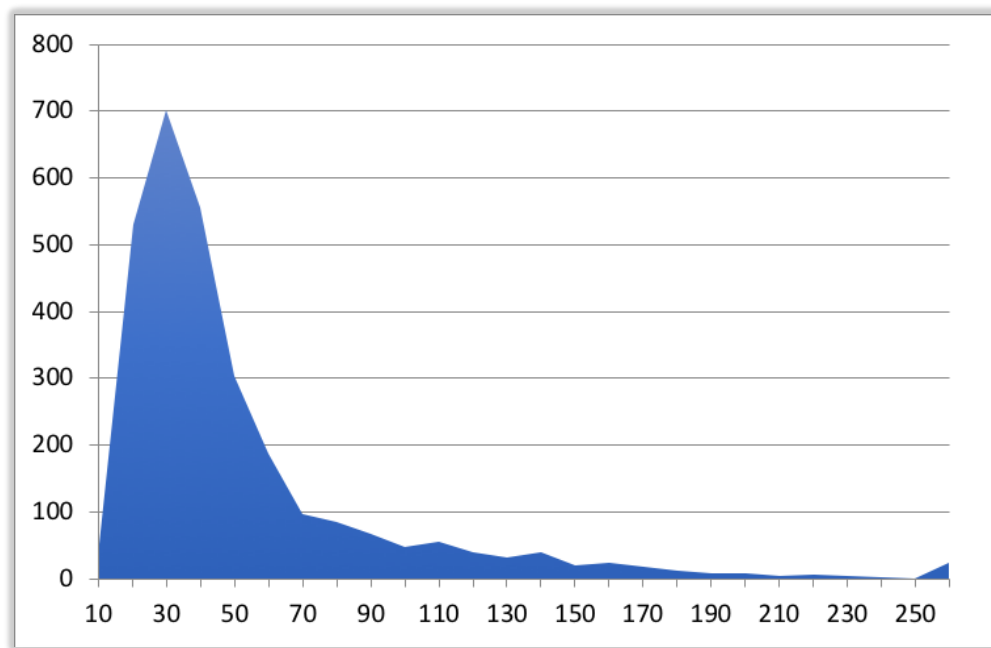


Figure 3.2: Distribution of Word Count for Individual Joke Text

In order to delineate published text in the dataset that would be characterized more aptly as humorous essays, then, jokes exceeding 100 words were identified and set aside. As shown in Table 3.1, the 26 joke books included an initial set of 2,906 individual instances

of published text spanning 1900-1927⁷; of these 279 instances were recategorized as humorous essays resulting in a final dataset of 2,627 jokes. This approach is consistent with the few other scholars who have studied widespread joke cycles and note that, in contrast with other forms of humor, “jokes have the great advantage of being short, numerous, and anonymous” (Davies, 2011: 4).

Year	Title	Origin	All Jokes	Jokes ≤ 100 Words
1900	Auto Fun - Pictures and Comments from "LIFE" (Compilation 1900-1905)	New York, NY	22	16
1905	Mother Goose Rhymes	New York, NY	55	55
1905	Chauffeur Chaff of Automobilia	Boston, MA	55	44
1906	Automobile Joker	New York, NY	226	205
1906	The Auto Guyed	New York, NY	26	26
1908	My Auto Book	New York, NY	78	77
1907	A Bunch of Horseless Nonsense by Otto Moebel, Chauffeur	New York, NY	39	23
1909	Joker Number One	Galesburg, IL	6	6
1913	Ford Jokes and Stories	Baltimore, MD	204	193
1913	Jokes of the Automobile	Baltimore, MD	291	263
1913	LBA Picture Book compliments of Willard Storage Battery	Cleveland, OH	16	8
1915	Ford Joke Book	S. Norwalk, CT	42	36
1915	Fun About Fords	Chicago, IL	95	86
1915	Funny Stories About the Ford (Volume 1)	Hamilton, OH	74	59
1915	Funny Stories About the Ford, Volume 2	Hamilton, OH	56	52
1915	More Fun About Fords	Chicago, IL	100	93
1915	Original Ford Joke Book	Binghamton, NY	146	134
1916	Rattling Ford Jokes	Baltimore, MD	159	151
1916	A Book of Ford Jokes Compliments of Standard Thermometer Co	Boston, MA	74	79
1917	Ford Smiles - Jokes About a Rattling Good Car	Chicago, IL	448	398
1917	Fun About Fords 1917 Model	Chicago, IL	66	61
1918	Auto Joke Book	Baltimore, MD	237	228
1919	Jitney Joke Book	S. Norwalk, CT	42	36

⁷ This observed closure of the auto joke cycle in 1927 coincides with a major symbolic event harkening the end of the Automobile Age: it was during this year that the last Ford Model T rolled off the line after 20 years in production.

1919	Jokes and Jests About the Ford - Vol. 1	Pittsburgh, PA	91	76
1920	Jokes and Jests About the Ford - Vol. 2 - 1921 Model	Pittsburgh, PA	67	54
1927	A Book of the Best Ford Jokes	Girard, KS	191	168
		TOTAL	2906	2627

Table 3.1: Summary of Joke Book Sources and Data

As shown in Figure 3.3, analysis of the joke collection by year reveals major three joke cycles during which automobile technology was a dominant theme in popular humor.

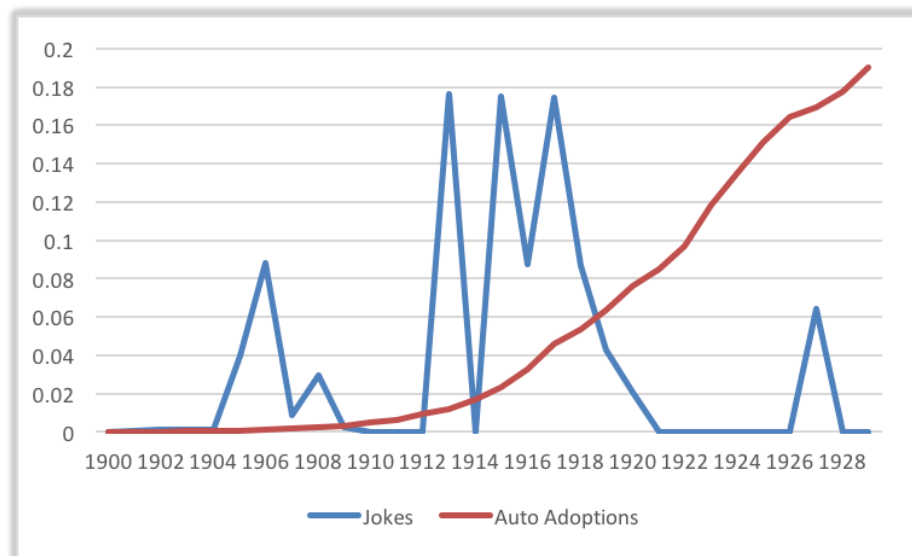


Figure 3.3: Concentration of Automobile Jokes and Automobile Adoptions by Year

Combining the annual joke data with annual automobile sales and registration data from the period (see Appendix A) illuminates four distinct eras: the bellwether era from 1900 to 1903 during which the automobile was rare and only one in approximately 4,000 Americans owned a vehicle (0.02%); the innovator era from 1904 to 1908 during which one in approximately 750 Americans owned an automobile (0.13%); the early adoption era

from 1913 to 1920 during which the largest major joke cycle occurred and the automobile jumped to 3.55% market penetration with one in 28 Americans owning an auto; and, lastly, the early majority era in 1927 during which the final major joke cycle occurred and one in every six Americans owned a car (16.96%). These joke cycles are summarized in Table 3.2 below.

	Years	Market Penetration (%)	Ownership Ratio	Major Joke Cycle	Description
Bellwether Era	1900-1903	0.02%	1:4021	No	First examples of popular humor related to the automobile surface.
Innovator Era	1904-1908	0.13%	1:754	Yes	First major joke cycle observed.
N/A	1909-1912	0.61%	1:164	No	No joke cycle observed during this period.
Early Adoption Era	1913-1920	3.55%	1:28	Yes	Second major joke cycle observed.
N/A	1921-1926	11.82%	1:8	No	No joke cycle observed during this period.
Early Majority Era	1927-1927	16.96%	1:6	Yes	Final major joke cycle observed.

Table 3.2: Description of Popular Humor Eras

During the data collection, it was noted that a significant number of jokes pertained specifically to Ford's Model T. Therefore, all jokes in the collection were identified as either related to the automobile generally or Ford's Model T specifically, and it was determined that more than half of the jokes in the collection targeted the Model T (i.e., 1,409 of the total 2,627 or 53.6%). Joke cycle scholar Christine Davies notes that "it is always necessary to consider the kind of jokes that could have multiplied and circulated but did not" (2011:5). Accordingly, I searched for references to other specific makes and models of automobiles in addition to the Model T. However, only one joke of the 2,627 in the dataset singularly targeted an automobile manufacturer other than Ford. It was a joke about Dodge that appeared during the last major automobile joke cycle in 1927:

Wise: “The chief of police turned in his Star yesterday.”
Guy: “How come?”
Wise: “He’s going to buy a Dodge.”

In contrast, as shown in Figure 3.4, after the Model T was introduced in 1908, it became a core target of jokes during both of the major joke cycles that followed.

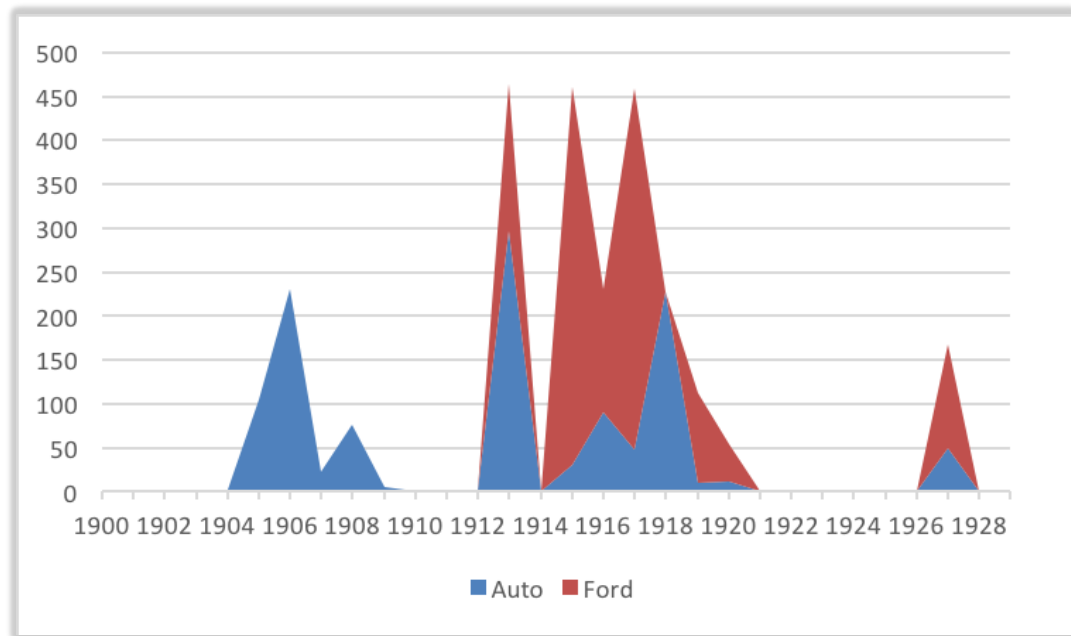


Figure 3.4 Generic Automobile Jokes Versus Ford Model T Jokes by Year

DATA ANALYSIS

Of the 2,627 jokes in the collection, 263 jokes (i.e., 10%) were initially selected⁸ for intensive coding to identify emergent themes and trends. The resulting dataset included jokes from each book in the collection, spanned the entire time period of interest, and contained 41.8% Ford Model T jokes. This subset of jokes was meta-coded based on type

⁸ In order to increase the likelihood of identifying jokes that were repeated over time, the joke collection was sorted by word count so that identical or nearly identical jokes would be clustered close together.

of joke construction, decrypted to uncover hidden implicatures (Flamson & Barrett, 2008), and then subject to open coding to identify first-order concepts (Gioia, Corley & Hamilton, 2013). Following the initial coding and decryption process, I constructed a chronology of first-order concepts in popular humor over time, identifying 114 distinct concepts by year. Of these 114 concepts, 18 commonly occurred in jokes about both the automobile generally and the Model T specifically (e.g., the technology is unreliable) and 38 were present exclusively in jokes related to the Ford Model T (e.g., Model T owners are poor and/or low class). Following this, the remaining jokes in the dataset were coded to a point of theoretical saturation via iterative, abductive analyses to identify second-order themes, theoretical constructs, and the fluctuations of these over time.

Coding and Joke Decryption Procedures

As discussed in the prior chapter, although jokes are characteristically brief forms of discourse, they are densely packed with meaning for their intended audience. Unpacking this meaning involves not only identifying overt references and themes, but also “decrypting” a joke to decipher its incongruities and hidden implications (Flamson & Barrett, 2008). Given this, initial coding proceeded in multiple stages, beginning with the meta coding of the type of joke construction (e.g., double entendre or humorous analogy) and social actors involved (e.g., husband and wife, doctor and patient, etc.), followed by in vivo coding of the text, then intermediate descriptive coding, and, ultimately, descriptive coding of the decrypted hidden meaning. For example, as shown in Table 3.3, the hidden implication that the automobile is potentially lethal to pedestrians is deciphered from the

following text: “‘Ran across an old friend of mine today,’ remarked the chauffeur. ‘Did you kill him?’ enquired the bartender.” The joke works because of two possible meanings for the phrase “ran across.” As a listener hears the set up to the joke, an expectation is formed for a story about a friendly chance meeting; however, the punchline (“Did you kill him?”) violates this expectation, introducing an incongruity that the listener resolves by calling to mind a different, more literal meaning of the phrase “ran across”. The listener “gets” the joke when he or she realizes that it is actually about the dangerous nature of automobiles and their drivers. Thus, the unencrypted joke meaning noted in the coding procedure is equivalent to the meaning a listener must understand for the joke to make sense.

Joke	Meta Coding	In Vivo Coding	Descriptive Coding	Unencrypted Joke Meaning
“Ran across an old friend of mine today,” remarked the chauffeur. “Did you kill him?” enquired the bartender.	Construction: double entendre Social actors: chauffeur, bartender	“Ran across an old friend” “Did you kill him?”	chance meeting // running over a pedestrian Is the pedestrian dead?	Automobile and/or chauffeur is lethal to pedestrians
“Why do you compare your wife with your Ford?” “Both keep me broke!”	Construction: analogy Social actors: Two friends Husband and wife	“compare your wife with your Ford?” “Both keep me broke!”	Wife compared to Model T automobile Wife is expensive to have // Model T is expensive to own	Model T is expensive to own and maintain

Table 3.3: Examples of Joke Coding

SUPPLEMENTAL DATA COLLECTION AND ANALYSIS

A central thesis of this research is that humor is a unique discursive mechanism with properties that distinguish it from other forms of common discourse. To interrogate

this thesis, I collected and analyzed mass media coverage of the automobile for the period of study (i.e., 1897-1929) and compared the dominant themes with those present in popular humor at the same time.

Magazine articles featuring the automobile for the period of interest (1897-1929) were extracted from the *American Periodicals Series* in the ProQuest database. The *American Periodicals Series* includes expansive digitized full-text records dating from 1740 to the early 20th century and features the most popular general interest magazines circulated in America 1897-1929 such as *Vanity Fair*, *McClure's* and *Ladies Home Journal*. In total, the database includes 1,509 periodical titles and contains over 3 million pages of text. *Scientific American*, a widely circulated technology magazine that frequently published articles on the automobile, appears in the database for 1897-1908. For the remaining period, 1909-1929, additional *Scientific American* articles were extracted from the *Reader's Guide Retrospective* database.

	Database	Source Type	Document Type	Full Text Only	Search term	Date Range	Results
1	American Periodicals Series	Magazine	Feature	Y	TI = "automobile"	1897-1929	866
2	American Periodicals Series	Magazine	Feature	Y	TI = "motor car"	1897-1929	92
3	American Periodicals Series	Magazine	Feature	Y	TI = "the ford"	1903-1929	19
4	American Periodicals Series	Magazine	Feature	Y	TI = "henry ford"	1903-1929	60
5	American Periodicals Series	Magazine	Feature	Y	TI = "ford" and FT = "auto*"	1903-1929	17
6	American Periodicals Series	Magazine	Feature	Y	TI = "ford" and FT = "model t"	1903-1929	3
7	American Periodicals Series	Magazine	Feature	Y	TI = "model t"	1903-1929	0
8	Readers' Guide Retrospective: 1890-1982	Magazine	N/A	N/A	PUB="scientific american" AND TI = "automobile" OR "motor car" OR "ford" OR "model t"	1909-1929	238
							1295

Table 3.4: Popular Media Coverage Database Queries

As shown in Table 3.4 above, a total of 1,295 full-text articles from popular mass market magazines were extracted from the *American Periodical Series* and *Reader's Guide Retrospective* databases using search parameters with relevant keywords such as “automobile,” “motor car,” “the ford,” “henry ford,” and so on. From this set of articles, I eliminated duplicate records (i.e., 16 reprints) and manually reviewed the remaining records to extract non-fiction, relevant, feature-length articles for further investigation. This yielded 291 articles. Further, I researched the target demographics and readership for each periodical title that appeared in the refined search results (43 periodical titles) in order to focus in on “general interest” mass-market periodicals and eliminate niche publications such as trade magazines and children’s titles. The resulting dataset is derived from 17 “general interest” periodicals targeted toward the general public with broad circulation and includes 135 feature-length articles totaling 545 pages of text. As shown in Figure 3.5 below, 75% of this mass media coverage discussed the automobile generally while the remaining 25% focused on Ford Motor Company and its founder, Henry Ford (4% and 21%, respectively).

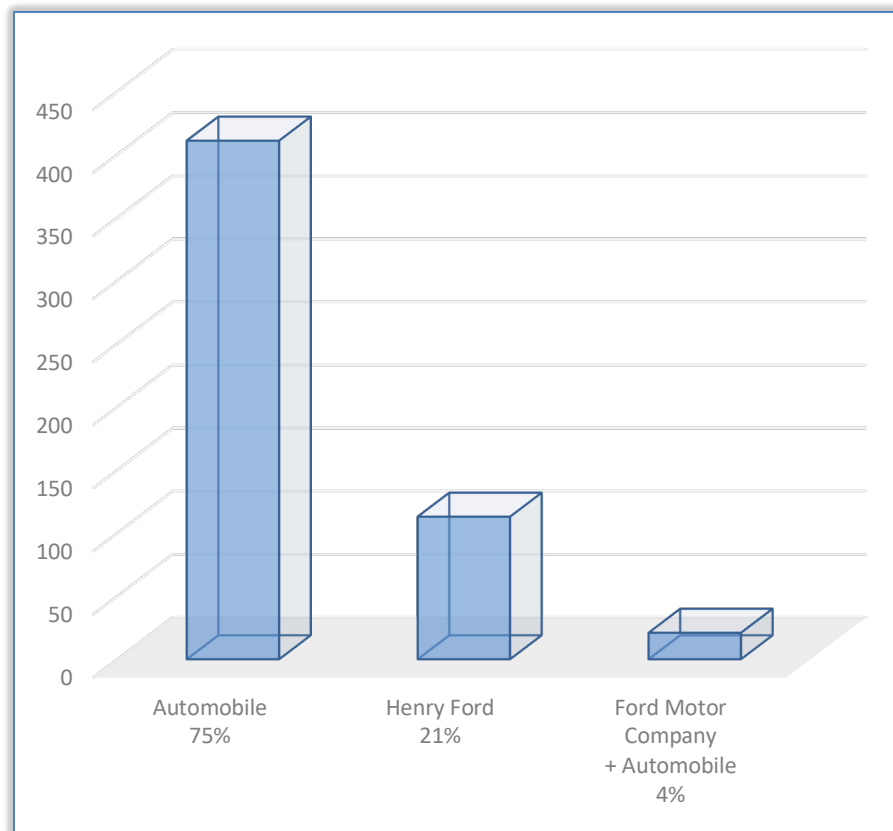


Figure 3.5: Mass Media Coverage by Topic

Coding of the 135 feature-length magazine articles proceeded chronologically with special attention to the time periods that coincided with major joke cycles. In vivo quotes and article summaries were compiled in a research document organized chronologically. These quotes and summaries were then subject to abductive higher-order coding to identify emergent concepts and themes, iteratively returning to the full-text articles as needed to refine observations. Salient theoretical constructs included characterizations of the technology itself, framings of the technology's place in society, and emotional timbre of

the mass media coverage. Following this coding process, I compared emergent themes from the joke data and mass media data for each major time period to determine similarities and differences over time.

Beyond this, I assembled a supplemental collection of cultural ephemera related to the automobile to enable triangulation of observations based on the joke dataset. This collection includes two British joke books from 1900 and 1911 containing 191 jokes (the earlier of which contains humor about both bicycles and automobiles), 54 songs, seven poems, three one-act play scripts, and digital copies of cover art images from the original joke books. Additionally, a set of 431 unpublished retrospective essays submitted for a Popular Science “My Funniest Experience with a Model T” contest in 1953 are included in the supplemental dataset.

Lastly, in order to match themes identified in the joke books with corresponding trends in diffusion of the technology, I obtained annual automobile sales and registration data from 1900, the earliest available date, through the mid-20th century. Furthermore, because Ford’s Model T was a particularly salient cultural touchstone (e.g., several of the joke book titles in the collection directly refer to the “Ford” which was synonymous with the Model T), I compiled detailed annual production data for the Model T’s run 1908-1927 as well.

Chapter 4: Results

Analysis of public discourse surrounding the automobile during its market introduction yields a number of significant observations. Key characterizations of the automobile differ across mass media discourse and popular humor during crucial periods in the technology's trajectory (e.g., safe vs dangerous, reliable vs unpredictable, etc.). Furthermore, unlike mass media coverage which characterized the automobile category as a monolith for most of the period under study, analysis of popular humor reveals nuanced parsing of Ford's Model T and related attributions from the broader automobile category. Results are presented here and implications of these findings are discussed further in the following chapter.

LAUGHING IN THE FACE OF DANGER

The earliest joke in the complete dataset comes from 1900 and introduces a theme that would persist for two decades: the lethal danger of automobiles to human beings. In this joke, for example, the narrator demurs from getting into the gory details of the death of a reckless driver who made a practice of speeding (i.e., "scorching").

There once was a reckless chauffeur⁹
Who scorched with a whizz and a whir
Till one day in his "mobe"
He scorched clean off the globe.
So the rest we're obliged to defer.¹⁰

⁹ For the jokes that appear in this chapter, I have preserved the original formatting and syntax of texts as they appeared in their original published form.

¹⁰ *Auto Fun: Pictures and Comments from LIFE* (1900)

Existential concerns about the life-ending danger of the automobile dominated the earliest popular humor on the subject. For the bellwether period (1900-1903), 57.1% of all jokes about the automobile addressed its lethal peril to both drivers and pedestrians. In the subsequent innovator era (1904-1908), a full quarter (i.e., 25%) of jokes about automobiles dealt with this “infernal machine’s” capacity to kill. Humorous epitaphs about auto-related deaths and cynical puns about cavalier manslaughter became commonplace during this era.

AUTO EPITAPH

Their end was rather risqué
Chaffeur was really tres gai
A cliff they were nearing
He forgot about steering
Too bad – ma petite fiancée¹¹

What follows the Automobile?
An Autopsy.¹²

De Style – “There were eight hundred killed in the Philippines.”
Gunbusta – “I didn’t know they had automobiles out there.”¹³

Mass media coverage during this time, by contrast, downplayed the lethality of automobiles and attributed the source of danger to horses on the roadway, poorly constructed roads, an ignorant public, and the rare bad driver or careless chauffeur. In 1902, for example, a feature article in *Overland Monthly* lamented that “until horses become accustomed to this strange machine, there are bound to be accidents even with the greatest care.” That same year, the renowned inventor Thomas Edison wrote an editorial¹⁴

¹¹ “Mother Goose Rhymes” (1905)

¹² “A Bunch of Horseless Nonsense” (1907)

¹³ “Chauffeur Chaff of Automobilia” (1905). This reference to the Philippines would have been understood in the then-contemporary context of the Spanish American War.

¹⁴ Edison, Thomas A. “The Storage Battery and the Motor Car.” *The North American Review*. July 1902.

defending the automobile and explaining that any perceived danger is due the design of roads and an inept general public in the United States. “We hear of fewer accidents in France and Europe generally than our own country,” Edison writes, “One reason for this is that in Europe there are wider roads and less traffic; another is that the public have been educated up to the situation.” Edison goes on to predict that in the “near future” automobile accidents “will soon become things of the past.” Similarly, in the following month, the closely related innovation of the motorcycle was hailed as “the poor man’s automobile”¹⁵ and a feature article on the topic asserted that using a motorcycle was just as safe as walking:

Facts have proven that riding a bicycle is as safe as walking. So with the motor bicycle. To the uninitiated the motor-bicycle appears dangerous. Really there is no danger connected with the use of a motor bicycle. It cannot explode, neither can it burn.

Figure 4.1: Excerpt from Mass Media – Riding a Motorcycle as Safe as Walking

When mass media coverage during the bellwether era (1900-1903) did acknowledge the lethal danger of automobiles, blame was shifted from the automobile itself to the primary user, typically lower-class automobile operators (i.e., chauffeurs) employed by upper-class automobile owners. Danger at the hands of automobile drivers is consistently framed as a few bad actors misusing the technology by way of careless driving

¹⁵ Bill, L.H. “The Poor Man’s Automobile.” *Overland Monthly and Out West Magazine*. August 1902.

or scorching (the common term at the time for speeding). For example, the following excerpt from a letter circulated by the Automobile Club of California in 1901 illustrates this framing:

[T]here is an increasing feeling of hostility manifested by the people around the bay of San Francisco against the use of automobiles on the county roads and driveways, and this is due, in a large measure to the conduct of a few people, who by reckless driving and lack of consideration for the occupants of passing [carriages], have caused accidents and fright to the drivers of horses.

This few bad actors logic is a common theme in mass media coverage during the same period. Contents a 1902 feature magazine article: “[T]he many who own their automobiles and run them with proper care should not be made to suffer on account of the few reckless chauffeurs.”¹⁶ However, unlike mass media characterizations which assiduously decoupled the actions of a “few reckless chauffeurs” from the automobile itself, popular humor during this period characterized chauffeurs and autos as one in the same.

The Devil at the Wheel

Prior to the introduction of the Model T for the mass market in 1908, automobiles were commonly operated by an employed chauffeur who had a distinct skillset from coach drivers responsible for managing horse-drawn carriages (Chauffeurs Lord It Over Their Employers, 1906). Early automobiles were complex machines that required both time and technical expertise to start up and maintain, and were almost exclusively owned by the wealthy upper class. Both in the handful of 1900-1903 bellwether jokes and in the larger

¹⁶ Hawkins, G.A. “Automobile Endurance.” *Overland Monthly and Out West Magazine*. August 1902.

1904-1908 joke cycle, the new and novel profession of chauffeur appears to be synonymous with, and the designated personification of, the breakthrough technology of the automobile. As Figure 4.2 illustrates, chauffeurs were cartoonishly portrayed as villains on joke book covers, a theme echoed in the pages inside.

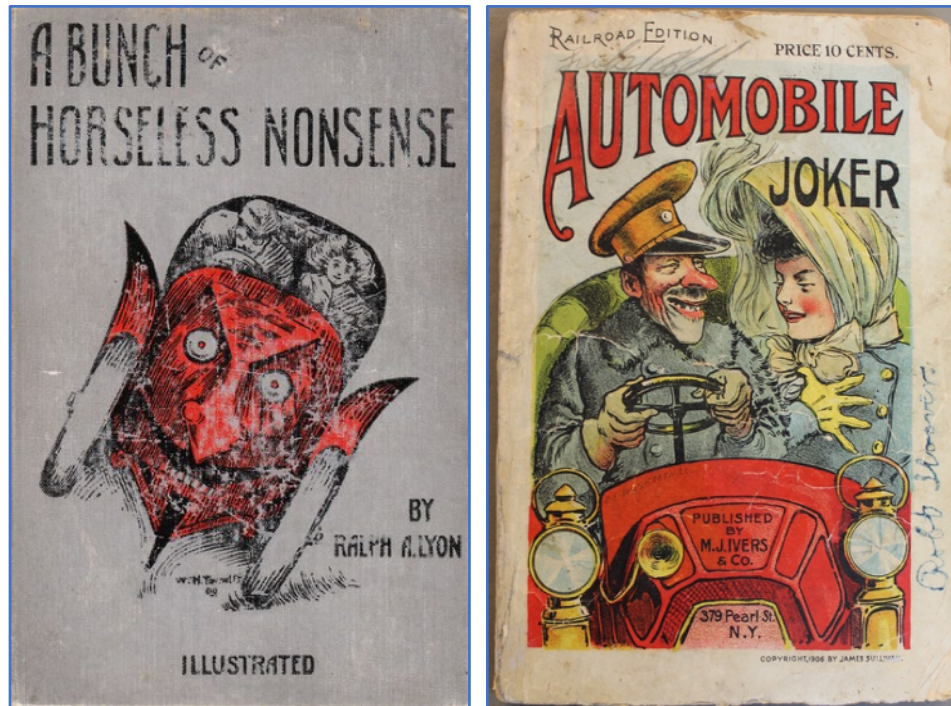


Figure 4.2: Joke Book Covers from 1906 and 1907 Portraying Chauffeurs as Villains and the Automobile as an “Infernal Machine”

Although existential concerns about the danger of the automobile resurfaced during the 1913-1920 joke cycle, the incidence of this theme decreased 54.0% from the bellwether and innovator eras and the broader theme of danger became more nuanced during this period. Whereas variations of the term “kill” and “killing” dominated jokes about existential danger in the first two joke cycles, the 1913-1920 joke cycle introduced similar

themes but evoked diverse terminology that typically implied less moral turpitude and often less drastic consequences of automobile use such as non-lethal danger (e.g., survivable injuries). This contrast is illustrated in Table 4.1 below.

Innovator Era (1904-1908)	Automobilist (to duck hunter) – “Morning. Killed anything?”
	Duck Hunter – “No. Have you?” ¹⁷
	He – Isn’t this scorching great sport? She – Perfectly “killing!” ¹⁸
Early Adoption Era (1913-1920)	Gent— “Can you produce references from your last employer?”
	Chauffeur— “In about a month.”
	Gent— “Why that delay?”
	Chauffeur— “He’s in the hospital.” ¹⁹
	Beneath this slab, Lies Charlie Vix. Rum and autos Will not mix. ²⁰

Table 4.1: Comparison of Existential Danger Terminology Across Joke Cycles.

In this same vein, the language used in jokes from the early adoption era demonstrates a shifting of attribution for deaths due to autos from “infernal machines” and “reckless chauffeurs” to rather the unfortunate outcome of inexperienced or ignorant drivers. As

¹⁷ “Automobile Joker” (1906)

¹⁸ “My Auto Book” (1908)

¹⁹ “Jokes of the Automobile” (1913)

²⁰ “Auto Joke Book” (1918)

illustrated in the pithy witticism below, jokes from the early adoption era (1913-1920) trended toward a more neutral tone regarding the moral character of drivers.

A green driver maketh a fat undertaker.²¹

Fords Go to Heaven, Autos Go to Hell

During the bellwether (1900-1903) and innovator (1904-1908) eras, the automobile and their drivers were vilified in popular humor. Chauffeurs, depicted as the personification of and described as synonymous with the automobile, were characterized as morally defective (e.g., both the automobile and chauffeurs were interchangeably referred to in popular humor as “the devil”). Judging by the jokes from this period, chauffeurs were reckless, cavalier, remorseless, not to be trusted, and certainly not to be left alone with one’s daughters.

Judge – “Did you give the victim any warning?”

Chauffeur – “Ample. I passed the identical spot the previous day.”²²

Old Gentleman – But what sort of work are you fitted for?

The Tramp – Well, ye see, boss, I’m used ter bein’ in jail, and I was thinkin’ I wouldn’t mind takin’ a job as a chauffeur.²³

“They say Miss Millions has eloped with her father’s coachman.”

“Coachman? I presume you mean with her father’s chauffeur!”²⁴

The automobile itself was often likewise characterized as a morally deficient, temperamental, uncontrollable killing machine with a mind of its own. Allusions to hell

²¹ “Auto Joke Book” (1918)

²² “Auto Joker” (1906)

²³ “Chauffeur Chaff of Automobilia” (1905)

²⁴ “Auto Joker” (1906)

and damnation were common, and the automobile was slangily referred to as a devil-wagon and an infernal machine during these periods (Berger, 1979).

What is an automobile?

It is an Infernal Machine used by the Classes for dealing death to the Masses.²⁵

“What were you on Earth?” asked St. Peter at the gate.

“I was a chauffeur,” was the reply.

“Did you travel fast?”

“Fast? Well, I should smile! Nothing ever passed me on the road.”

“Ah, you were a scorcher, then.”

“That’s what was the matter with me.”

“Well,” said he of the key, “there’s no scorching here. You belong lower down.”²⁶

“It was a serpent – a green devil – that drove woman out of the garden,” mused Reverend Gunbusta, as he elbowed his way through the Auto Show.

“Yes,” retorted De Style, smilingly, “and now it is a ‘red devil’ that is driving her to the Garden.”²⁷

This tone begins to change, however, in the second major joke cycle during the early adoption era (1913-1920). Allusions to hell and damnation subside as a more nuanced joke theme emerges which parallels earlier framings in mass media: automobiles don’t kill people, drivers do.

INNOCENCE.

“He was killed by an infernal machine”

“Did they arrest the driver?”²⁸

²⁵ “A Bunch of Horseless Nonsense” (1907)

²⁶ “Chauffeur Chaff of Automobilia” (1905)

²⁷ “Auto Joker” (1906). The “Garden” here refers to Madison Square Garden in New York City, a popular auto show venue at the time.

²⁸ “Ford Jokes and Stories” (1913)

The joke above, literally titled “Innocence,” illustrates this nuance. Here, the previously accepted logic that the automobile is a morally corrupt technology responsible for killing people is critiqued, and instead moral responsibility is shifted to the human driver.

This pattern of strong vilification and condemnation of the automobile followed by later softening of this position did not apply to Fords because the Model T does not appear to have been judged as morally deficient in the first place. Not only are Model T jokes making allusions to hell and damnation not found in the data, the Model T appears to be the only type of car with a path to heaven:

“Here’s absolute proof,” writes a reverend gentleman who is also a staunch Ford enthusiast, “That the Ford is the only car mentioned in the Bible. ‘Elijah went up to Heaven on high,’ he quotes; then adds, ‘Surely nothing but a Ford could accomplish that!’”²⁹

Furthermore, the portrayal of morally deficient chauffeurs as a proxy for and personification of the technology does not extend to the Model T. To the contrary, the Model T is instead frequently personified as an unruly but beloved child. In the following joke from 1915, for example, the narrator takes on the role of a caring parent comforting and assuring a child (i.e., a Model T) that it will be able to grow up to be a taxi cab (i.e., a jitney bus) one day.

There, little Ford,
Don’t you cry;
You’ll be a jitney bus,
Bye and bye.³⁰

²⁹ “Funny Stories About the Ford: Volume One” (1915)

³⁰ “Funny Stories About the Ford: Volume One” (1915)

Apparently, however, not all Model T “parents” felt the same way about their “children” becoming taxis. The following quip parodies the title of a popular song in 1915 entitled “I Didn’t Raise My Boy to Be a Soldier”. As shown in Figure 4.3 below, this quip was subsequently developed into a full parody song titled “I Didn’t Raise my Ford to Be a Jitney” that became widely popular in its own right later the same year.



Figure 4.3: Original and Parody Sheet Music Covers for “I Didn’t Raise My Ford to Be a Jitney” (1915)

In sum, existential concerns about the automobile and attributions of moral deficiency to it appear to attenuate somewhat with the passage of time and the diffusion of the technology. And by the end of early adoption era (c.1920), the automobile was on track for its sentence to eternal damnation to be commuted in the court of popular humor. Yet nearly half of all

vehicles sold during this era (47.1%) – i.e., Ford’s Model Ts – were granted amnesty by society at large for the most significant negative externality possible: death.

AUTO CHARACTERIZATIONS: DIVERGENCE AND CONVERGENCE

The earliest jokes about the automobile grapple with contradictions and negative emotions concerning not only threats to human life, but also control over one’s personal environment and everyday routines. As previously mentioned, references to the lethal danger of automobiles are mentioned in 53.7% of jokes prior to 1904. References to the related topics of nonlethal danger and reckless chauffeurs are found in an additional 28.6% of jokes during this brief bellwether era preceding the first major automobile joke cycle. During the first major joke cycle in 1904-1908, existential concerns persist and, as nonusers began to personally cope with the negative effects of automobile technology, additional concerns about the nuisance of automobiles to the general public begin to surface. For example, concerns about automobiles creating air and noise pollution first appear during the 1904-1908 cycle in 9.38% of jokes. As shown in Figure 4.4 and the joke that follows, a popular trope at the time equated the pollution of automobiles with the foul odor of skunks.

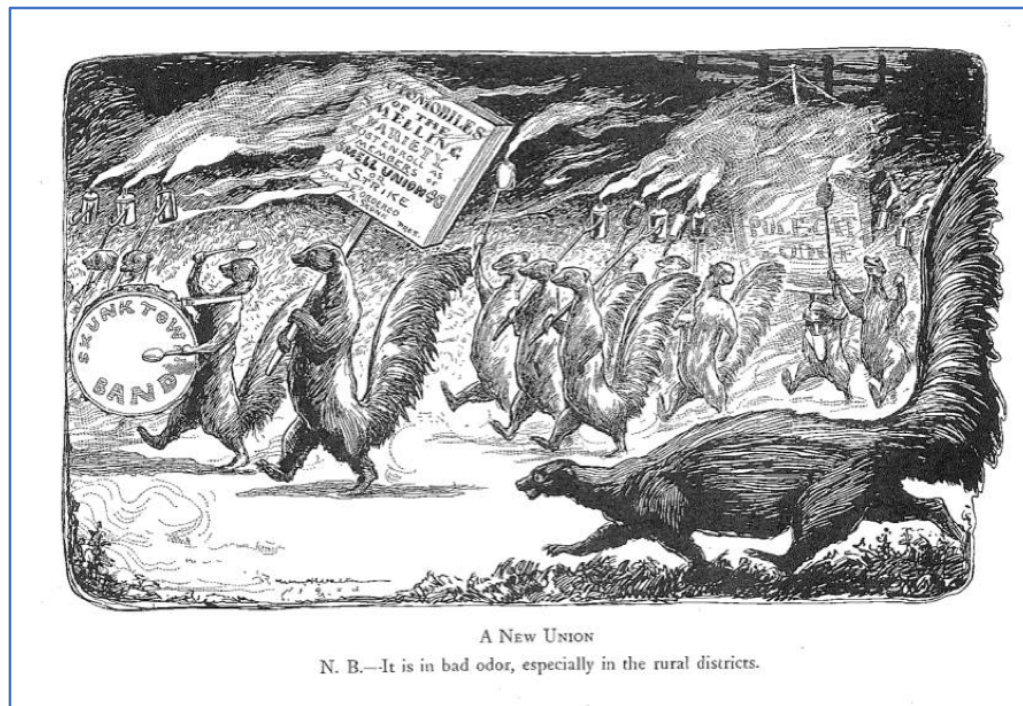


Figure 4.4: Cartoon from LIFE Magazine in 1904: Skunks Demand Autos Join Their Union.

Two lonesome skunks by the roadside stood
 As an automobile rushed by
 It left an odor far from good
 And a tear in one's eye.

“Oh, why do you weep?” asked his anxious friend.
 “Why do you sob and quake?”
 “Because that smell,” said the other skunk,
 “Is like mother used to make.”³¹

³¹ “Auto Joker” (1906)

Likewise, concerns about noise and air pollution associated with the automobile surfaced during the 1913-1920 cycle and are extended to the Model T as well, appearing in 7.59% of popular jokes from the era.

“Does [your Ford] always make this racket?”
“Oh no! Only when it’s running.”³²

What is the best way to keep Fords from smelling?
Cut off their noses.³³

Jokes that highlight the lethal nature of the automobile and jokes that highlight less grievous negative externalities such as noise and smell do not share the same trajectory. As shown in Figure 4.5, the existential concerns that dominated the popular discourse around the automobile during the bellwether period (1900-1903) still account for the largest share of discourse in the innovator era (1904-1908), though they recede to a smaller proportion of the broader conversation and are balanced by the appearance of nuisance-related themes (i.e., noise and smell) and continued discourse surrounding practical and technical concerns (e.g., breakdowns and poor quality tires). By the final stretch of the Automobile Age (1927), jokes about the noise and smell of the automobile had fallen out of favor, and existential concerns about the danger of the technology were eclipsed by jokes that dealt with the practical and technical challenges of operating and living amongst the automobile.

³² “More Fun About Fords” (1915)

³³ “Ford Stories” (1917)

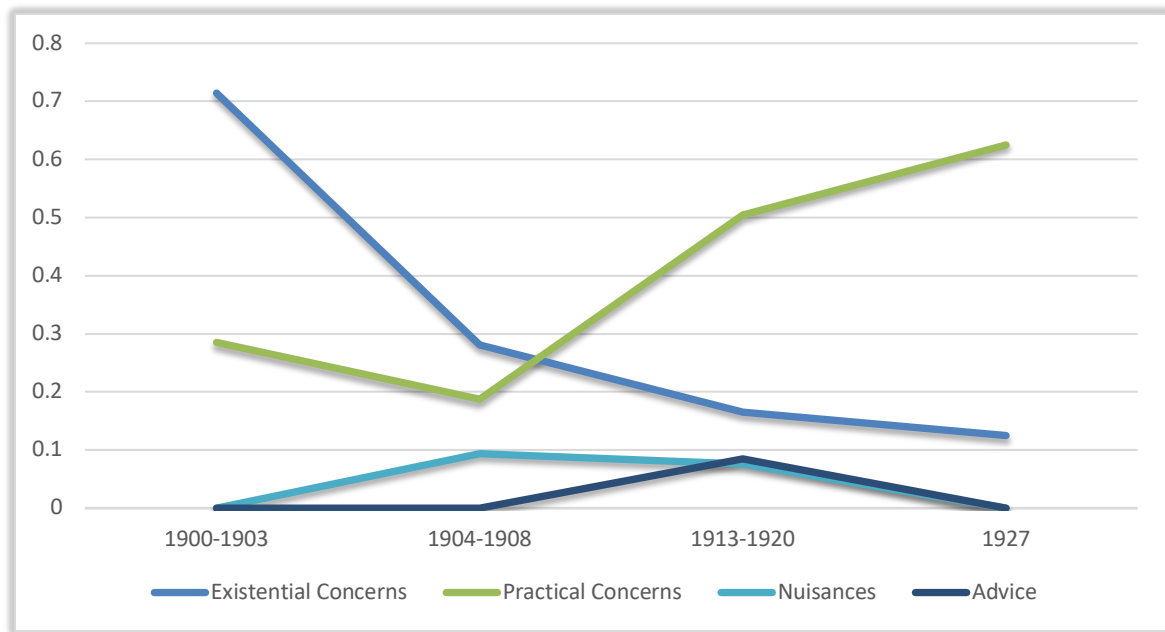


Figure 4.5: Trends in Popular Humor Topics by Era.

During the early adoption era (1913-1920), preoccupations with existential concerns that dominated the bellwether (1900-1903) and innovator (1904-1908) eras gave way to a precipitous rise of practical concerns related to the automobile. Pragmatic concerns related to the diffusion and use of the automobile more than double from 18.75% of the discourse during the innovator era to 50.45% during the early adoption era. Common pragmatic themes that surfaced during included breakdowns, poor quality tires, various types of engine trouble (e.g., overheating, catching fire, etc.), and general cynicism and skepticism about the ability of automobiles to perform consistently. Unlike existential tensions, as Figure 4.6 illustrates, frustrations about unreliable performance extended to both the automobile generally and the Model T specifically.

The Dealer—That's the finest car on the market.
The Customer—How is it on the road?³⁴

Why is a Ford like a magician?
Because it works by spells.³⁵

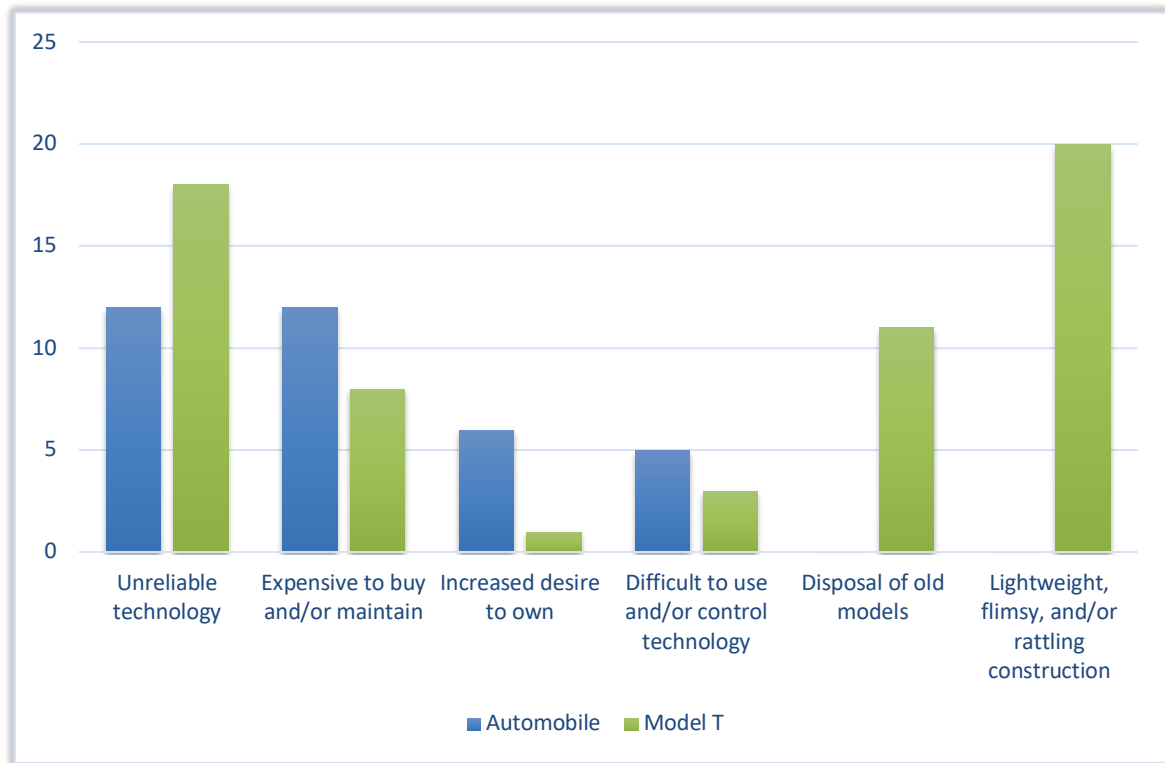


Figure 4.6: Practical Concerns Related to the Automobile and Model T.

Likewise, nonprofessional drivers found the new technology challenging to master, and common themes surfacing during the early adopter era describe both the automobile and Model T as being difficult to understand, control, and operate.

³⁴ “Auto Joke Book” (1918)

³⁵ “Ford Smiles – Jokes About a Rattling Good Car” (1917)

Automobiles are usually called she because no man understands them.³⁶

Fred— “Why did he name his automobile after his wife?”

Jack— “Well, he found he couldn’t control it”³⁷

“How long did it take you to learn to run an automobile?”

“Oh, three or four.”

“Days?”

“No, Fords.”³⁸

In addition to expressing misgivings about its reliability and ease of use, automobilists and Model T drivers expressed another practical grievance that still resonates in modern times: automobiles are expensive. Cars from the era were relatively costly to buy (exceeding the average person’s annual salary), maintain, and drive (Flink, 1970). For many, this meant financing the automobile and taking on debt.

Knicker—“Is your car up-to-date?”

Bocker—“It ought to be. I paid for it with next year’s money.”³⁹

The most derided attribute of Ford’s Model T, in particular, was its notorious vibration which was blamed on its flimsy, lightweight construction. Alternatively described in terms of rattling, shaking, or vibration, over time the Model T’s rattle became its signature feature. In fact, two of the joke books in the assembled collection – “Rattling Ford Jokes” from 1916 and “Ford Smiles – Jokes About a Rattling Good Car” in 1917 – make direct reference to the phenomenon. Consistent with the image on the front of joke

³⁶ “Jokes of the Automobile” (1913)

³⁷ “Ford Jokes and Stories” (1913)

³⁸ “More Fun About Fords” (1913)

³⁹ “Jokes of the Automobile” (1913)

book cover in Figure 4.7, references to the rattling issue in the data appeared to be framed as good-natured ribbing rather than biting wit.

Can you spell tin can with four letters?
Yes, F-O-R-D⁴⁰

“What shock absorbers do you use on your Ford?”
“The passengers.”⁴¹

Doctor—Shake well before taking.
Patient—Easy, Doc. You know I drive a Ford.⁴²



Figure 4.7: Cover Art from “Rattling Ford Jokes” (1916)

⁴⁰ “Original Ford Joke Book” (1915)

⁴¹ “Fun About Fords” (1915)

⁴² “Ford Smiles – Jokes About a Rattling Good Car” (1917)

Interestingly, the problematization (Alvesson & Sandberg, 2011) of practical concerns and troublesome technological attributes through humorous discourse is punctuated toward the end of the early adoption period (c.1918) by the arrival of an entirely new form of popular humor about the automobile: pragmatic advice disguised as pithy witticisms.

Too many tinkersers spoil the car.

A good road is rather to be chosen than great ditches.

It's a poor clutch that won't work in a tight squeeze.

All cars are gray in the dark.⁴³

These witticisms provide heuristics that challenge previous assumptions about the agency of the average person with respect to the automobile. Instead of one's fate hanging in the balance of the capricious auto, these succinct pieces of advice instead reflect that one can and should take control of and shape his or her experience with the new technology.

The practical concerns about reliability, ease of use, and controllability that appear in the earliest joke cycles (1900-1903 and 1904-1908) are sharply out of step with mass media coverage during the same periods which depict automobiles as reliable, simple to operate, and easily controlled. From 1900-1908, 48.6% of magazine articles extoll the virtues of the automobile's usefulness and reliability and 29.7% pronounce its ease of use. By contrast, only 5.7% of these articles acknowledge the noise and smell associated with gasoline engines and only one article in the mass media coverage sampled during this period briefly mentions the common difficulty associated with starting (i.e., cranking) an

⁴³ "Auto Joke Book" (1918)

engine. For example, an article from *The Independent* in 1902⁴⁴ describes the following scene in Newport, Rhode Island: “Then two ladies out for an afternoon spin flash by in a small electric carriage, their experienced hands clad in the daintiest of white gloves, guiding it in and out amid the throng of [horse-drawn] carriages and sightseers, the trained eye measuring distances with wonderful exactness, exhibiting the most perfect control over their obedient engines.” The author concludes by directly affirming the implication of this description: “The accident *which happens to* the automobile is seldom due to the machine itself,” (emphasis added) he writes, passively casting the automobile as an innocent victim in any related accidents. Similarly, in 1904 *Leslie’s Popular Monthly* declares⁴⁵ that “[today] the automobile is thoroughly efficient and reliable.” Enlisting the opinion of a physician in a 1905 feature article entitled “The Automobile as a Prescription,”⁴⁶ *Leslie’s Popular Monthly* continues its characterization of the automobile as reliable and easy to use: “In spite of popular opinion to the contrary, the automobile is a safer proposition, always under the control of the skilled operator, it knows no other will but his... As we learn our machine, we find that it is easy to control and simple to manage.”

This sharp divergence between mass media discourse and popular humor regarding ease of use, controllability, and reliability begins to converge at the end of innovator era joke cycle. In 1908, the tone of media coverage shifts markedly from celebrating the marvel of the automobile toward giving practical advice for automobile use and ownership. For

⁴⁴ Baright, G. F. “Automobiles and Automobile Races at Newport.” *The Independent*. June 1902.

⁴⁵ Merrihew, Stephen W. “Automobile Possibilities.” *Leslie’s Popular Monthly*. January 1904.

⁴⁶ Eynon MD, William G. “The Automobile as a Prescription.” *Leslie’s Popular Monthly*. February 1905.

example, the entire sample of mass media coverage for 1908-1909 (i.e., 100%) consisted of articles featuring detailed, pragmatic information for prospective automobile drivers. This information covered a range of topics including how to rent an automobile for vacation, suggested criteria for purchasing a used automobile, how to prevent auto fires, and how to settle disputes in the event of an automobile accident. Into the early adopter era (1913-1920), dominant framing of the automobile continued this shift away from exuberant veneration toward commentary on the changing demographics of automobile ownership from the elite and professional classes to the middle and working classes (i.e., 41.0% of coverage). The sober practicalities of auto ownership continued as a major theme (23.1% of coverage) during this period as well and the importance of facilitating conditions such as road quality, fuel production and availability, and service station infrastructure emerged as a major theme in the media discourse (23.1% of coverage).

US VS. THEM: FORD'S MODEL T AND THE AUTOMOBILE CATEGORY

In 1902, when automotive technology was an abstract and futuristic idea, “the broad class of the agricultural population regard[ed] automobiles with curiosity” and “more progressive farmers were already thinking of adopting the automobile for their own domestic uses.” Just two years later, however, “the ire of farmers was unexpectedly aroused against the automobile... with the advent of widespread informal automobile touring during the summer of 1904” (Flink, 1970: 67). In rural communities, familiarity with the automobile appeared to breed contempt.

In the summer of 1904, the grave dangers and irksome conditions cars subjected bystanders to were not the only attributes of the new technology that became vividly apparent to those in sparsely populated regions of the county. Wealthy automobilists literally drove home to those in lower socioeconomic classes the fundamental unattainability of the automobile and the unparalleled freedom it conferred. For the vast majority of Americans, their initial experience with the technology came with the implicit caveat that the automobile is for people like “them,” not people like “us.” It would have been a salient identity-triggering event that reminded those in the middle- and working classes of their place in the socioeconomic hierarchy.

The introduction of the Model T – heralded by Henry Ford as the car for “the great multitude” – would also have been a salient identity-triggering event for the middle- and working classes. In contrast to their experiences just four years earlier, the Model T and the benefits it conferred were imminently attainable: it was a car for “us”. Given this, it is no wonder that the Model T was welcomed as a member of the family.

Why is the Ford called the family car?

Because it has a muffler for father, a hood for mother, and plenty of rattles for the kids to play with.⁴⁷

The debut of Ford jokes in popular humor introduced a new tone in the discourse, one of warmth, affection, and lighthearted levity that notably contrasted with the often dark and cynical tones already present in automobile humor. Figure 4.8 below vividly illustrates the

⁴⁷ “Funny Stories About the Ford” (1915)

departure in tone from the darker, negative valence associated with the automobile to the warm, playful positivity expressed with respect to the Model T.

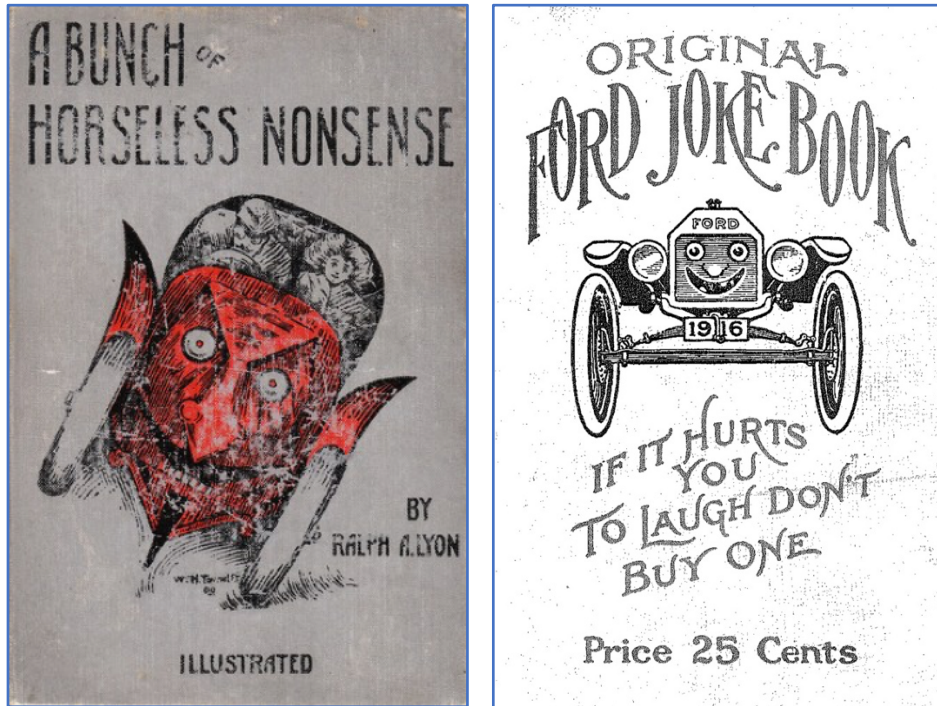


Figure 4.8: Contrast Between Depiction of Automobile (1906) and Ford's Model T (1915)

This affectionate and lighthearted tone persisted more than 25 years after the Model T's production run ended. For a *Popular Science* magazine contest in 1953, "My Funniest Experience with a Model T," hundreds of people across the country took the time to carefully type or handwrite and mail their heartfelt and humorous stories about the Model T to the editor (see Figure 4.9). Even years after the contest ended and the winning essays were published, the editor continued to receive submissions from people who, in their own words, simply felt compelled to share their stories.

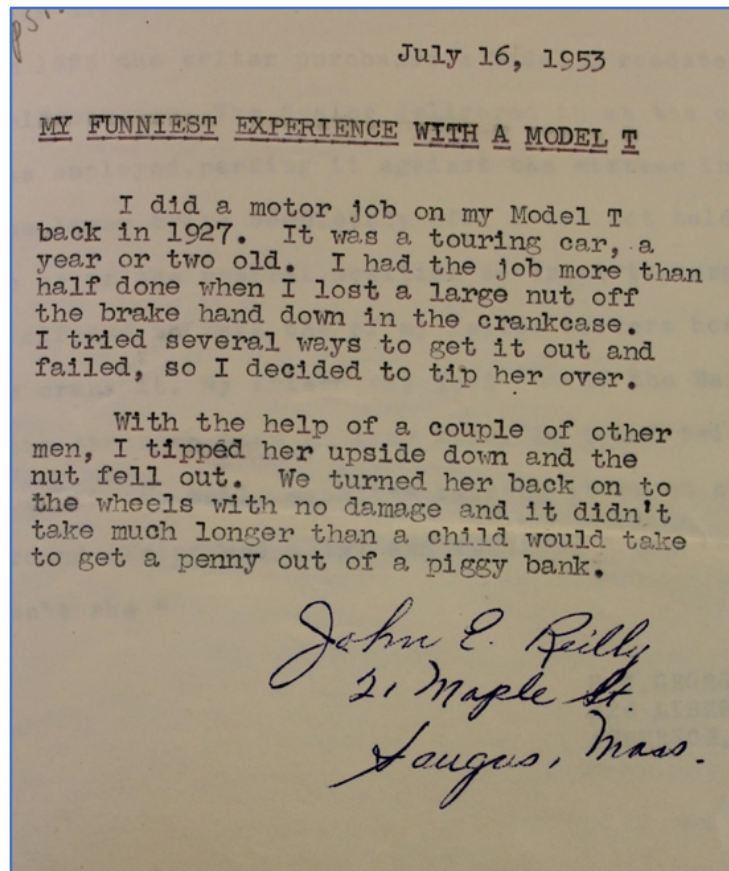


Figure 4.9: Essay Submitted to *Popular Science* for Contest in 1953

Although the Model T was embraced with affection in popular humor, it was also uniquely maligned as a social embarrassment and sign of low class. The following jokes, for example, were recycled repeatedly without significant alterations (four and seven times, respectively) during the early adoption period (1913-1920).

"What is your name, little girl?"

"You won't laugh if I tell you?"

"No."

"Iona Ford."⁴⁸

⁴⁸ "A Book of Ford Jokes Compliments of Standard Thermometer Co." (1916)

Why is a Ford like a bath-tub?
Because you hate to be seen in one.⁴⁹

The class-based stigma associated with owning and operating a Model T that comes through in these jokes is balanced against endearing and protective characterizations in others.

Why is a Ford like an entertaining book?
Because it is often looked over.⁵⁰

In other words, jokes like these contend, the Model T does not deserve the unremarkable status it has been relegated to.

Jokes about the Model T were shared among, and even used to market to, Ford owners. As shown in Table 3.1, 15 of the 26 joke books in the assembled collection have titles that refer directly to the Model T⁵¹. Examining the contents of each joke book revealed that while Ford joke books contain popular humor about both automobiles generally and the Model T specifically, automobile joke books contain only jokes related to the automobile. Producers of aftermarket accessories for the Model T such as Willard Battery Storage (which marketed batteries in order to bypass the notorious cranking required by factory-standard Model Ts) and Standard Thermometer Co. (which made speedometers and horns for the Model Ts) distributed their own joke books as advertising campaigns. While the jokes from the “LBA Picture Book compliments of Willard Storage

⁴⁹ “Jitney Joke Book” (1919)

⁵⁰ “Ford Smiles - Jokes About a Rattling Good Car” (1917)

⁵¹ This count includes the “Jitney Joke Book” from 1919 as the word “jitney” was exclusively linked to the Model T in the dataset.

Battery” (1913) do not mention the Ford by name, they extol the virtues of having an electric ignition system in order to avoid dealing with fickle and laborious crank starters⁵². The Standard Thermometer Company transparently used Model T jokes to market to Model T owners with “A Book of Ford Jokes Compliments of Standard Thermometer Co” in 1916. Considering these two findings together, it appears that jokes about the automobile were fodder for everyone, but jokes about the Model T were shared predominantly by members of the Ford in-group (i.e., owners and those aligned with owners). Returning to the observation that the Model T was welcomed as a family member, this phenomenon is akin to the idea that it’s acceptable for a person to make fun of their own family but unacceptable for outsiders to do so.

The Ford is Not an Automobile

In addition to the decoupling of the Model T from the moral deficiency of automobile as discussed above, another common theme in popular humor from the early adoption era (1913-1920) makes plain the othering of the Model T from the broader meanings attached to automobiles: the Model T is simply *not* an automobile. This paradoxical logic is indefensible from a technological standpoint; however, a host of socially constructed meanings attached to the Model T diverged sharply from those associated in popular humor with all other automobiles.

A Ford will go anywhere an automobile will.⁵³

⁵² The Model T came wired for an alternate electrical ignition to be installed aftermarket, but unlike competitors’ products at the time Ford did not include dry-cell or storage batteries to make the system operational.

⁵³ “Original Ford Joke Book” (1915)

A Ford has been called the Christian Science⁵⁴ car.
You only think you have an automobile!⁵⁵

The children in one of the lower grades of a public school were reading a story of pioneer days, and came to the sentence, “The hunter looked about for a ford.” Thinking that her pupils might not understand, the teacher asked, “Now who can tell me what a ford is?” There was silence for a moment, then one little boy raised his hand. “I know,” he said. “It’s something like an automobile.”⁵⁶

The most striking observation about themes concerning both lethal and non-lethal danger from this era is that they are linked, with few exceptions, only to automobiles generally. An explosion of jokes related to Ford’s Model T enter the popular discourse during the 1913-1920 cycle (i.e., 429 in 1915 alone), yet these new jokes contain comparatively few references to death, serious injury, and disfigurement.

Matched case analysis of jokes that were repeated over time confirmed this finding. As shown in Table 4.2, the following joke about a chauffeur almost hitting a person with his automobile is recycled four times between 1913 and 1918, yet is never altered to implicate the Ford Model T. This observation stands in spite of the fact that Model T jokes outpaced generic automobile jokes by a factor of nearly 2:1 during this period, and recycling and repurposing old jokes from targeting the auto to targeting the Model T was commonplace.

The Cop – “You just missed me by an inch.”

The Chauffeur – “Don’t worry. I’ll be back in five minutes.”⁵⁷

⁵⁴ This joke is a play on the Christian Science belief that physical sickness is a mental error or illusion. From 1906 to 1908, the Christian Science religion and its founder became a popular subject of everyday discourse and criticism due to a 14-part exposé series published in *McClure’s* magazine (Cather, 1909).

⁵⁵ “Fun About Fords” (1915)

⁵⁶ “Funny Stories About the Ford” (1915)

⁵⁷ “Jokes of the Automobile” (1913)

Year	Joke	Differences Noted
1913	The Cop – “You just missed me by an inch.” The Chauffeur – “Don’t worry. I’ll be back in five minutes.”	
1913	The Cop – “You missed me by an inch.” The Chauffeur – “Don’t worry. I’ll be back in five minutes.”	None.
1917	The Cop— “You just missed me by an inch.” The Chauffeur— “Don’t worry. I’ll be back in five minutes.”	None.
1918	Pedestrian – Hey! You just missed me by an inch! Chauffeur – Be patient! I’m coming back directly!	Change from cop and chauffeur interaction to pedestrian and chauffeur interaction. No significant change in theme or targets.

Table 4.2: Example of Joke That Remained Consistent Over Time.

By contrast, jokes with more innocuous themes were commonly repurposed from generic automobile humor to poke fun specifically at the Ford. As an example, the following joke about incurring debt to purchase an automobile was popular from 1906 to 1917, and appears five times in the full dataset of jokes.

Tom – “My brother’s just had a new attachment put on his automobile.”
Dick – “That so? What is it for?”
Tom – “Debt.”⁵⁸

As shown in Table 4.3, insignificant alterations are made to the joke over time such as changes to the characters’ names. In 1913, however, the central target of the joke changed from automobiles generally to Ford’s Model T specifically, and subsequent versions carry forward this targeting of the Model T.

Year	Joke	Differences Noted
------	------	-------------------

⁵⁸ “Auto Joker” (1906)

1906	Tom – “My brother’s just had a new attachment put on his automobile.” Dick – “That so? What is it for?” Tom – “Debt.”	
1913	“Reggy has a new attachment for his auto.” “What for?” “For debt.”	Minor change in character names.
1913	“Reggy has a new attachment for his Ford.” “What for?” “For debt.”	Switches from targeting automobiles generally to targeting the Ford Model T specifically.
1916	Tom—My brother’s just had a new attachment put on his [Ford]. Dick—That so? What is it for? Tom—Debt.	Reverts back to prior character names. Continues targeting of Ford Model T.
1917	“Reggy has a new attachment for his Ford.” “What for?” “For debt.”	Continues targeting of Ford Model T.

Table 4.3: Evolution of Joke Subject from Generic Automobile to Ford Model T.

The patterns that emerge in popular humor across the four eras of study reveal that social responses to the Model T overlapped with, yet were clearly distinct from, the broader social responses to the automobile as a breakthrough innovation. Of the themes identified in the open coding process, one-third are associated exclusively with the Model T. In a number of cases, meanings attached to the Model T are completely opposite of those attached to automobiles more generally.

For its part, the mass media does not appear to have discussed the Model T in different terms than other automobiles. Of the 135 full-text feature-length magazine articles in the dataset, only one direct reference to Ford appears before the early 1920s. This article, published in 1914, focuses on the novel profit-sharing plan adopted by Ford Motor Company rather than its flagship product, the Model T. And beginning in 1922 and

continuing through the 1920s, numerous articles explored the topics of founder Henry Ford himself (113 of 545 pages in the complete dataset 1899-1927) and the unique production and management practices of the Ford Motor Company (21 of 545 pages). The mass media it seems, however, did not exhibit the same preoccupation with the Model T that is so apparent in popular humor trends. In the following chapter, I discuss these observations further and describe theoretical implications of these results.

Chapter 5: Discussion

The central thesis of this dissertation is that humor, when taken seriously, can illuminate important, often elusive phenomena and inform theoretical insights in the strategy and innovation literatures. In this chapter, I articulate the role of popular humor as a mechanism for challenging the status quo in the context of technological innovation, discuss the significance of humor as distinctive form of discourse, and examine how popular humor can facilitate an evolving social acceptance of a previously resisted breakthrough technology. This research extends our understanding of social, cultural, and emotional processes that influence the trajectories of radical innovations, draws attention to collective-level, identity-based forces embedded in the rhythms of everyday life that influence the acceptance or rejection of breakthrough innovations, and introduces humor as a mechanism for negotiating the meaning novel technologies in society.

In exploring how breakthrough innovations become part of the status quo in a given society, the microprocesses that weave the fabric of everyday life have been generally neglected in favor of investigating macrosocial phenomena such as institutional barriers to change (McGinn, 1991). Yet the potency of humor stems from its essential ordinariness; for a breakthrough technology, popular humor can operate as a conduit of information and a potential catalyst for shaping its place in a revised status quo. For example, as computers started to become popular in the United States in the early 1990s, jokes about the technology such as the one below became commonplace:

Jesus and Satan were having an ongoing argument about who was better on his computer. They had been going at it for days, and God was tired of hearing all of

the bickering. Finally God said, “Cool it. I am going to set up a test that will run two hours and I will judge who does the better job.”

So Satan and Jesus sat down at the keyboards and typed away. They moused. They did spreadsheets. They wrote reports. They sent faxes. They sent e-mail. They sent out e-mail with attachments. They downloaded. They did some genealogy reports. They made cards. They did every known job. But ten minutes before their time was up, lightning suddenly flashed across the sky, thunder rolled, the rain poured and, of course, the electricity went off.

Satan stared at his blank screen and screamed every curse word know in the underworld. Jesus just sighed. The electricity finally flickered back on and each of them restarted their computers.

Satan started searching frantically, screaming “It’s gone! It’s all gone! I lost everything when the power went out!”

Meanwhile, Jesus quietly started printing out all of his files from the past two hours. Satan observed this and became irate.

*“Wait! He cheated, how did he do it?!”
God shrugged and said, “Jesus saves.”⁵⁹*

Here, the then-novel experience of losing one’s work on a computer⁶⁰ is lampooned to bring levity to a common frustration with the emerging technology, and information about how to overcome this issue is shared: you need to save your work, the joke tells us.

In the opening chapter, I discussed the social, cognitive, and emotional incongruities that novel technologies introduce en route to becoming an accepted part of the patterns of everyday life in a given society. Breakthrough technologies ranging from the automobile to the smartphone can disrupt the well-worn patterns of ordinary life by creating actual or threatened intrusion into and/or violation of individuals’ sense of privacy;

⁵⁹ <http://prairiehome.publicradio.org/>

⁶⁰ The dominant technology that the computer supplanted, the typewriter, naturally did not require saving one’s work. It may seem trite now, but the widespread adoption of the desktop computer required a substantial reimagining of what exactly a written document was.

altering routines and balance of resources among social groups; creating man-made accidents; and triggering changes in social norms and control (Snow, et al, 1988). In order for breakthrough innovations to survive and thrive as a taken-for-granted part of the revised quotidian, potentially intense negative responses stemming from these disruptions must be tempered and sociocultural incongruities must be resolved (Bijker & Law, 1992).

Additionally, in order to be perceived by consumers as valuable, breakthrough technologies must first overcome the hurdle of being too new and unfamiliar (i.e., high degree of apparent novelty), and potential users must contend with the misfit of this unfamiliar new thing in their understanding of the world by either extending existing schemas or forging new ones (Rindova & Petkova, 2007). Alternatively, if these hurdles are not negotiated successfully, consumers are likely to “perceive a product innovation as incomprehensible, strange or weird, and judge that it is unlikely to be useful” (Rindova & Petkova, 2007: 220). In order for a breakthrough technology to actually breakthrough, then, the fundamental incongruity it embodies must be resolved. Resolving cognitive incongruity - that is, reconciling two or more seemingly unrelated schema to discover hidden implicatures - is the specialty of humor. Furthermore, the manifold social, cognitive, and emotional effects of humor can aid in the recognition of a new technology’s value as well as foster its broader social acceptance. These effects of humor facilitate adaptation processes that support challenges to, and revisions of basic expectations about, the status quo of day-to-day life in a given society.

Encounters with unfamiliar, highly novel technologies often elicit strong negative affective responses such as frustration and are associated with the impulses to avoid and

escape (Strebel, O'Donnell & Myers, 2004). Humor not only boosts an individual's ability to cope with this stress and moderates the negative responses, it also can inject feelings of hopefulness about future encounters (Boskin, 1997; Vilaytho, Arnau, Rosen & Mascaro, 2003). Perhaps most significantly, the positive affective state a good joke evokes increases a potential consumer's persistence in the face of setbacks (Cheng & Wang, 2015). If the function and value of the breakthrough technology is not immediately evident, humor increases the likelihood that would-be adopters will stick it out until they are able to forge a better understanding of it (i.e., doing the cognitive heavy lifting required to revise existing schemas or develop new ones).

In addition to the emotional updraft humor provides, the introduction of levity has significant cognitive implications for consumers grappling with the meaning and value of unfamiliar technologies. Specifically, through increasing cognitive attention directed toward the target of humor, enhancing problem solving capabilities, and improving interpretative flexibility and elaboration, humor eases the taxing but necessary mental work of revising settled expectations and developing new ways of understanding the acceptance of breakthrough technologies requires.

Consumers' evaluations of novel technologies do not occur in a vacuum, but rather a thick social and cultural context of shared identities, norms, beliefs, and attitudes. In discussing the emotional and cognitive effects of humor vis a vis breakthrough technologies, the emphasis is necessarily on individual experiences; the social effects of humor, on the other hand, emphasize shared and collective phenomena. At the most basic level, humor acts as a conduit for sharing information among individuals, and failed

attempts at humor can signal a lack of mutual understanding. However, when a degree of shared understanding about a novel technology is present (i.e., each person has the appropriate unstated knowledge or “encryption key”), humor allows individuals to candidly table taboo issues and increases the authenticity of expressed attitudes, opinions, and beliefs.

Many commonplace products of today were controversial and taboo breakthrough innovations of the past. For example, female hormonal birth control, an innovation so taboo that it became universally known by its euphemism “the pill,” experienced a protracted period of controversy that spanned decades following its approval by the FDA in 1960 (Watkins, 2001). As a child, my first awareness of the pill’s existence came from a related popular joke overheard in adult conversation: “Why don’t blondes take birth control? The pills keep falling out.” Without the cloak of humor, my father, a working-class and self-described “God-fearing” man, would *never* have tabled the topic of hormonal birth control with his friends. (He also no doubt banked on the fact that his young daughter would not have the appropriate, unstated knowledge to decrypt the joke and discover its hidden implicatures.) Most importantly for the purposes of this discussion, concealed within my dad’s unsavory joke was crucial information about what made this breakthrough innovation so revolutionary: Unlike all previous forms of birth control, female hormonal birth control is taken *orally*.

Lastly, humor is used to foster a shared sense of identity and increase social bonding among emerging or minority social groups such as early adopters of new and unfamiliar technologies. In the early introduction of a breakthrough technology, competing social

groups - including various subsets of users as well as nonusers - significantly shape refinements to the technology itself and vie to ascribe social meaning to it (Pinch & Bijker, 1987; Wyatt, 2003). During this period of contestation and ferment, when broader social acceptance of the technology and its associated place in society are in question, humor can serve as a medium to diffuse and amplify controversial positions and provide a mechanism for recognizing similar others in the social wild, solidifying bonds, and reinforcing identity among fledging groups of users.

ADAPTIVE HUMOR VERSUS RIDICULE

Humor does not always lead to positive emotions that trigger feelings of hopefulness and stimulate the broaden-and-build creative learning process described in Chapter 2. Ridicule – i.e., “aggressive humor” – is intended to embarrass and take down its target and sanction unwanted beliefs, behaviors, and attitudes (Martin, 2007; Keltner, et al. 2001), and breakthrough technologies are not immune from becoming the target of aggressive humor. Recently, popular American comedian Dave Chappelle’s return to stand-up comedy was billed as providing “his skewed insight into the topics of race, technology... and more” (IMDb, 2017). In the following example from this comedy special, Chappelle performs a bit about the omnipresence of smartphones and the immediate access to information they provide.

[Speaking to an audience member]

We all need a break from [iPhone] technology, just for a minute.

You know I’m from a different time, young man. A dark time to you. I’m from a time that I didn’t even know who was on the phone until I answered that shit!

Like when tragedy used to strike.

I remember I was 12 years old and the teacher wheeled the TV set into the classroom. And she turned it on to one of three channels. And she said, “Class the Space Shuttle is taking off and we’re all going to watch it take off.” And, man, that shit was going great for like three to five minutes. THEN IT FUCKING EXPLODED! RIGHT ON TELEVISION. EVERYBODY ON BOARD: DEAD!... It was a goddamn national tragedy.

This was Cold War America! The Russians were laughing at us!

My point is, a guy your age wouldn’t even know the pain because to your generation it’s like the Space Shuttle blows up every fucking day.

How can you care about anything when you know every goddamn thing?⁶¹

In this routine, Chappelle critiques an unanticipated effect of the diffusion of smartphone technology in society (i.e., information overload leads to apathy about important world events), and uses humor to implore his audience to think carefully about how smartphones are changing the experience of everyday life.

Comedians like Chappelle often draw a distinction between the *subject* of a joke and its *target*. In the presence of negative emotional tone/valence, a technology and/or its users becoming a salient *target* of humor lays the foundation for ridicule whereas a technology and/or its users simply serving as a salient *subject* of popular humor is more likely to support benign adaptation. According to the Oxford English Dictionary, a subject refers to “a person or thing that is being discussed, described, or dealt with” (Subject, n.d.) whereas a target refers to “a person, object or place selected as an aim of attack” (Target, n.d.). In the context of humor, this aim of attack typically includes pinning “some undesirable

⁶¹ *The Age of Spin: Dave Chappelle Live at The Hollywood Palladium*. 2017. Netflix.

quality” to the target of the joke (Davies, 2011: 6). As British comedian Ricky Gervais explains:

The subject of a joke isn’t necessarily the target of the joke. You can make jokes about race without any race being the butt of the joke. Racism itself can be the butt, for example. When dealing with a so-called taboo subject, the angst and discomfort of the audience is what’s under the microscope.

Broadly speaking, the automobile is the *subject* of all 2,627 jokes included in this study. However, the breakthrough innovation itself is the *target* much less often. For example, although the automobile itself is clearly the target of the first joke in Table 5.1 below, the subsequent joke targets not the automobile itself but rather society’s preoccupation with it as a status symbol of upward mobility.

Subject vs. Target	Joke Description	Unencrypted Joke Meaning
Auto as target <i>and</i> subject	Gobang- “Do you think there is any real danger in the yellow peril?” ⁶² Ukerdek- “Oh yes, of course! But the red or black autos are just as bad.”	Automobiles of any color are equally dangerous.
Automobile as subject only	Smart girl (to keen motorist – “My sister has bought a beautiful motor car.” Keen motorist – “Really! What kind?” Smart girl – “Oh, lovely sage green to go with her frocks!”	Owning an automobile is a fashionable sign of social status

Table 5.1: Automobile as Target of Joke Versus Subject Only

From the standpoint of an automobile maker, the implications of the second joke are good news for the firm. The first joke, however, should raise alarm as it connects the technology itself to the undesirable attribute of danger.

A modern example of a breakthrough innovation as the target of ridicule is the Segway. “The Segway is a technological marvel!” a 2015 Wired magazine article

⁶² “Yellow peril” is a xenophobic pejorative from this era used to describe the perceived danger of immigration from East Asian countries to the United States (Miller, 1969).

proclaimed before bemoaning the personal transporter's fate as "a punchline" reduced to "a way for mall security guards to prevent sore feet" (Golson, 2015). As shown in Figure 5.1, in an era when most Americans now have a camera and an internet connection in their pocket, it has become a humorous sport to capture photos of "people looking stupid on Segways" and post them online.⁶³ This form of aggressive humor used to ridicule and express disapproval is most often used to defend the status quo and reject deviance from prevailing beliefs, attitudes, and assumptions (Martin, 2007).



Figure 5.1: "People Looking Stupid on Segways"

For fledgling breakthrough technologies vying for widespread social acceptance, the specific target of aggressive humor becomes crucial. In the case of the Segway, the

⁶³ <http://www.complex.com/sports/2013/07/segways-stupid-people/>

technology and its users are not only a common *subject* of popular humor, but typically also the central *target* of this humor as well, with the implicit undesirable attribute of the technology being that it is impossible to look anything but silly or stupid while using it.

Comparing Dave Chappelle's critique of smartphones with jokes about the Segway, it becomes clear that Chappelle is not ridiculing the smartphone technology itself but rather the social norms that have started to co-evolve with its diffusion (i.e., the constant flow of information they provide makes it more difficult to prioritize the importance of world events). The aggressive humor targeted at the Segway, on the other hand, is ridiculing the meaning of the technology itself. The message is clear: Regardless of its inherent functional magnificence, users simply look too stupid using the technology for it to be acceptable in the eyes of the general public. In contrast to the pilloried Segway, electric scooter technologies with nearly identical utility have gained momentum in recent years without suffering the ridicule levied at its predecessor. Unlike the stereotyped wealthy, middle-aged tourist or mall cop on the Segway, young consumers in hip, urban centers use e-scooters provided by firms such as Spin, Bird, LimeBike, and Jump on a per-ride basis with the help of smartphone apps (Findling, 2018). Social media savvy users and influencers have shaped the popular perception of and social meanings ascribed to this new generation of e-scooters, and although the technology is currently the subject of heated controversy in cities across the United States (Bliss, 2018), the technology's new face has spared it from the kind of targeted ridicule that humbled the original Segway.

HUMOR AS A DISTINCTIVE DISCURSIVE MECHANISM

The findings of this study suggest that popular humor, as a unique subset of the broader social discourse, offers a distinct take on the topics of the day and can point to insights not readily apparent in more conventional forms of discourse such as mass media. In contrast with mass media accounts, for example, the dominant framing of the automobile in popular humor at its introduction clearly associated the new technology with lethal danger. Historical accounts from the era describe similar negative reactions to the auto, indicating that popular humor more accurately represented commonly held attitudes and beliefs than mass media accounts which downplayed the lethal danger of the machine and externalized the source of it from the machine to any number of other targets (e.g., poor roads, uninformed pedestrians, and a handful of reckless drivers). Popular humor, however, squarely targeted the technology itself as dangerous and challenged the “few bad actors” logic popularized in the media with the broad targeting of drivers (e.g., chauffeurs) as morally bankrupt and reckless.

Over time and as the technology diffused, the discursive frames employed in mass media and popular humor converged to a middle ground that framed danger as an acceptable albeit unfortunate risk inherent in the design of the auto. It would be another half of a century before the lethal danger of the technology resurfaced as a contentious issue in public discourse. In 1965, Ralph Nader’s expose of the automobile industry, *Unsafe At Any Speed: The Designed-In Dangers of the American Automobile*, renewed public outcry. The book was a bestseller in 1966 and held auto manufacturers to account

for failure to address known safety issues and invest in proven safety features such as seatbelts (Stone, 1989).

In addition to differences in content and framing of the technology itself, mass media coverage and popular humor significantly diverge in terms of emotional tone. While magazine articles portrayed exuberant optimism about the breakthrough, contemporaneous jokes took on a more pessimistic tone. For example, the complex negative emotional tone of schadenfreude – malicious pleasure at an out-group’s misfortune (Leach, et al., 2003) – is dominant in the earliest joke cycle and continues through the innovator era.

Mass Media: Exuberance	Optimism,	“Self-propelling vehicles are as yet only in their infancy, and improvement is the word of the hour... Inventors and manufacturers are at work in every direction, and with the remarkable success and judging from the rapid introduction of these vehicles during the last ten years, there can be no doubt that so far as buggy, carriage, and truck vehicles are concerned the day of self-propelling vehicles has already dawned” ⁶⁴
Popular Humor: Schadenfreude	Pessimism,	“What are we stopping for Jimmie?” “Why, you see, the motor is so hot dat I can't start it again till it cools off a little.” ⁶⁵

Table 5.2: Divergent Examples of Emotional Tone During Bellwether Era 1900-1903

Like characterizations of the technology itself, however, the dominant emotional tones expressed in mass media and in popular humor trend toward convergence as the breakthrough becomes democratized with the introduction of the Model T. By the early adoption era, for instance, mass media coverage has shifted from exuberance to grounded

⁶⁴ “The Automobile as a Servant of Civilization” *The Arena* (1902)

⁶⁵ *Auto Fun* (1903)

optimism while popular humor has lightened up considerably on the technology and its users, evoking a more playful tone instead of a gloating one.

Mass Media: Grounded Pragmatism	"Will it be possible to keep up motor-car merchandizing [sic] on such a scale much longer? It does not require an especially sensitive finger on the pulse of things to inform you that it will not... The era of wand-waving has passed for the automobile industry. The era of sound and conservative business progress has come." ⁶⁶
Popular Humor: Playful Pragmatism	Bizer – Schnell, I lost my Ford last week. What shall I do? Schnell – Why don't you advertise for it? Bizer – My Ford can't read advertisements. ⁶⁷

Table 5.3: Convergent Examples of Emotional Tone During Early Adoption Era (1913-1920)

In sum, the findings here illuminate popular humor as a distinct discursive form. I find that, contrasted with mass media, popular humor often characterized the new technology differently, expressed and validated existential anxieties associated with it, helped signal and shape emerging collective user identities, and squarely tackled taboo subjects frequently downplayed or sidestepped in mass media accounts.

HUMOR AND THE DEMOCRATIZATION OF THE AUTOMOBILE

One significant point of divergence between mass media accounts and popular humor during the rise of the automobile was the latter's preoccupation with Ford Motor Company's automobile, the Model T. While more than half of all automobile jokes from the period called out the Model T by name, the contemporary media does not appear to have found anything notable to discuss about the now-iconic Tin Lizzie, opting instead to focus upon Ford's organizational practices at its Dearborn plants and intrigue related to its

⁶⁶ "Future of the Automobile Industry" *Current Opinion* (1914)

⁶⁷ Ford Jokes and Stories (1913)

oftentimes controversial founder. Yet the volume and richness of ephemeral texts about the Model T (e.g., jokes, songs, poems, essays, and plays) instructs that “the flivver” was a prevailing topic in everyday discourse throughout the early 20th century.

Priced within reach of middle- and working-class consumers, the Model T was heralded as a “car for the great multitude” (Casey, 2015:1) and the introduction of Ford’s Model T in 1908 essentially democratized automobile technology, making it accessible to broad swaths of society previously excluded from the market (Brooke, 2008). Such increases in the perceived accessibility of a breakthrough innovation can significantly alter fundamental perceptions of the innovation itself and because “where access to technology is constrained... attitude[s] toward adopting the technology [are] affected by whatever impediments exist to constrain” it (Martins & Kellermanns, 2004; Meso, Musa & Mbarika, 2005: 126-127). Accordingly, this introduction of the Model T created a discontinuity for the masses of middle- and working-class non-users who had derided the automobile when it could only be feasibly owned by “them,” i.e., the elite and professional classes.

As Weick and his colleagues observed, “the stakes in sensemaking are high when issues of identity are involved” (2005: 416). In the case of the automobile, the arrival of an attainable version of the innovation in the market democratized the technology and triggered the need for a new set of meanings that would untether prospective consumers from moral hypocrisy, prior attributions and attitudes. When faced with this challenge of reconciling their now-attainable desire for ownership with the prevailing characterization of automobiles as morally defective pieces of machinery, determined to “kill,” and destined for eternal damnation, the multitude used humor to create an alternative account of the

Model T to tell one another. Jokes, as a mechanism for tackling taboos and resolving incongruity, enabled and promoted adaptation to a new status quo that included the democratization of the automobile. Encrypted in humor, the multitude signaled and spread their new-found acceptance of the breakthrough technology by telling one another, tongue in cheek, that Ford's Model T was simply *not* an automobile.

IMPLICATIONS FOR FIRMS

In its infancy, the successful commercialization of a breakthrough innovation is far from certain. On the path toward widespread adoption and social acceptance, these novel technologies must negotiate challenges at both the individual and collective level in order to become woven into the accepted, noncontroversial patterns of everyday life. At this collective level, shared understandings of the breakthrough's place in society must be forged while disruptions to the quotidian, externalities and moral opposition must be negotiated. To this end, the hidden implicatures found in jokes contain potentially crucial information about how users and society at large are responding to novel technologies, crucial information that may not surface or be salient in traditional discourse.

Although driverless vehicles are still in the most nascent phase of market introduction, for example, popular humor related to the technology is already prolific and traces back several years. Anonymous user /u/NormanRB garnered over 25.6k upvotes on the social news and discussion website Reddit for the original joke seen in Figure 5.2 below.

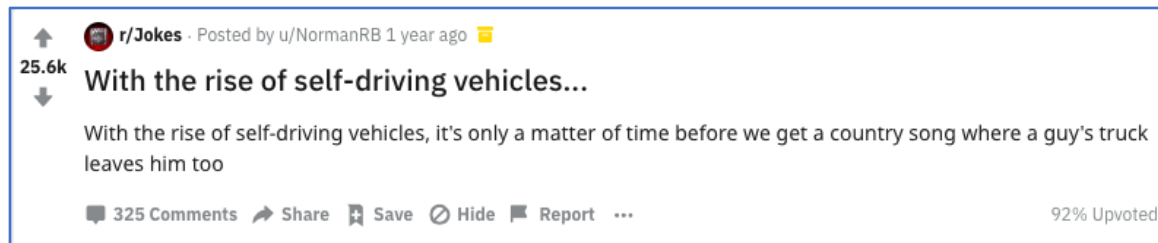


Figure 5.2: Example of Popular Humor about Autonomous Vehicles

And along with internet-based platforms such as Twitter, Instagram, and Reddit, jokes about autonomous vehicles have become common via more conventional conduits of popular humor as well. “It’s like a golf cart had sex with a pegasus,” The Late Show host Stephen Colbert said of his self-driving Tesla in 2015, “You turn it on in the morning and the screen tells you all the new stuff it can do like new navigation features or updated menus. There’s so many sudden changes overnight with your car, it’s like your car is going through puberty... which might be why sometimes it locks itself in the garage and blasts music from itself.”⁶⁸

In both of these examples, getting the joke hinges upon the encrypted implication that completely ceding control to a machine is disconcerting. Nineteen months after Colbert’s riff on his pubescent Tesla (and at least three years⁶⁹ after internet posts that humorously pointed out a similar tension began gaining traction), a study by MIT published

⁶⁸ October 15, 2015. “Self-Driving Cars Are Coming Right For Us,” The Late Show with Stephen Colbert. <https://youtu.be/9O05htLHWuE>

⁶⁹ In 2014, anonymous Reddit user /u/CerealFlakes garnered over 7,100 upvotes (i.e. likes) for an amusing conjecture about self-driving cars. “The Google self-driving car should have an “I’m Feeling Lucky” button that drives you to a random location,” it read, and the top-voted response to the post quipped, “The ocean again... dammit!” <https://bit.ly/2A4fPyt>

last year confirmed the strategic intelligence readily available in these jokes: the biggest anxiety for would-be adopters of driverless technology is giving up control (Abraham, Reimer, Seppelt, Fitzgerald, Mehler & Coughlin, 2017). Despite mass media coverage trumpeting the comparative safety of autonomous vehicles (e.g., Isidore, 2018), the average consumer remains reluctant to give up control. Across their sample of 2,976 drivers, only one in eight respondents indicated that they would be comfortable with “features that relieve the driver of all control for the entire drive (e.g., fully autonomous car)” and only an additional 14% would be willing to use “features that relieve the driver of all control for periods of time” (Abraham, et al, 2017: 6). While the makers of autonomous vehicles were no doubt aware of this phenomenon prior to the MIT study, tuning into popular humor early and often can serve to clarify consumer preferences and illuminate those concerns that should be proactively addressed via design, aesthetic and communication strategies.

CONCLUSION

In the innovation literature, a number of scholars have highlighted the need to investigate collective-level social and cultural forces that influence the successful commercialization of breakthrough innovations (e.g., Rosa, et al, 1999; Hargadon & Douglas, 2001; Rindova & Petkova, 2007; Eisenman, 2013). This study contributes to our understanding of collective-level schema development in emerging markets (Bingham & Kahl, 2013) and highlights the role of nonusers and society at large in constructing schemas for novel technologies. While prior studies have examined the top-down constitution of meaning from organizations, industry actors, and the media (e.g., Hargadon & Douglas, 2001;

Bingham & Kahl, 2013), the focus here on popular humor provides a complementary account of meaning construction originating from and embedded in the everyday life experiences of ordinary people.

Though the particulars vary across time and place (Ziv, 1988), jokes are a universal cultural phenomenon that reflect the needs, fears, and values of the members of a society that hold the key to their meaning, and popular humor can serve as a “valid type of social indicator” (Anderson & Jolly, 1977: 477) that provides a window into the systems of meaning shared within a society. As innovation and strategy scholars seek to understand the challenges breakthrough innovations confront on the path toward social acceptance in the context of cultural expectations (e.g., Rindova & Petkova, 2007; Weber, et al. 2008), investigations into the content and timing of jokes about technology provide unique access. Deciphering encrypted themes in popular humor affords us the ability to observe how the socially constructed “truth” about an innovation evolves over time and what implications this has for the widespread acceptance (or rejection) of the fledgling technology.

What sets humor apart from other means of grappling with incongruities is the conscious, efficient transition from problem recognition to problem resolution and the emotional payoff of mirth. Though encrypted and meaningless to naïve outsiders, jokes are communicated with the intention that they will be understood by the people that they are shared with. The moment a joke about a breakthrough technology is shared, an opportunity is created to consciously evaluate the role of a new technology in one’s life and either double down on the status quo or to potentially revise taken-for-granted assumptions,

beliefs, and patterns of living ingrained in the quotidian. The identity of the audience member, along with the target and tone of the joke informs which path is chosen.

Appendices

APPENDIX A: AUTOMOBILE MARKET PENETRATION 1900-1927⁷⁰

Year	Vehicles Sold	U.S. Population	Auto Registration	Ownership Rate
1900	4,192	76,094,000	8,000	0.000105133
1901	7,000	77,584,000	14,800	0.000190761
1902	9,000	79,163,000	23,000	0.00029054
1903	11,235	80,632,000	32,920	0.000408275
1904	22,130	82,166,000	54,590	0.000664387
1905	24,250	83,822,000	77,400	0.000923385
1906	33,200	85,450,000	105,900	0.001239321
1907	43,000	87,008,000	140,300	0.001612495
1908	63,500	88,710,000	194,400	0.00219141
1909	123,990	90,490,000	305,950	0.003381037
1910	181,000	92,407,000	458,377	0.004960414
1911	199,000	93,868,000	619,000	0.006594367
1912	356,000	95,331,000	902,000	0.00946177
1913	462,000	97,227,000	1,190,000	0.012239399
1914	548,000	99,118,000	1,664,000	0.016788071
1915	896,000	100,549,000	2,332,000	0.023192672
1916	1,526,000	101,966,000	3,368,000	0.033030618
1917	1,746,000	103,266,000	4,727,000	0.045774989
1918	943,000	103,203,000	5,555,000	0.053825955
1919	1,652,000	104,512,000	6,679,000	0.063906537
1920	1,906,000	106,466,000	8,132,000	0.076381192
1921	1,468,000	108,541,000	9,212,000	0.084871155
1922	2,274,000	110,055,000	10,704,000	0.097260461
1923	3,625,000	111,950,000	13,253,000	0.118383207
1924	3,186,000	114,113,000	15,436,000	0.135269426
1925	3,735,000	115,832,000	17,481,000	0.150916845
1926	3,692,000	117,399,000	19,268,000	0.164124056
1927	2,937,000	119,038,000	20,193,000	0.169634907

⁷⁰ Adapted from Jarvis (1972) *The Diffusion of the Automobile in the United States: 1895-1969*.

APPENDIX B: LIST OF KEYWORDS USED IN SEARCH OF U.S. COPYRIGHT DATABASE TO IDENTIFY ADDITIONAL RELEVANT JOKE BOOKS

Search Term	Technology Reference	Auto Maker	Joke Book Terminology	Auto Slang	Notable Auto Event
auto*	✓				
buick		✓			
car	✓				
chauf*				✓	
chev*		✓			
engine	✓				
fivver				✓	
ford		✓			
fun*			✓		
gm		✓			
"general motors"		✓			
"great race"					✓
jest					✓
jitney			✓		
joke*			✓		
lizzie				✓	
maxwell		✓			
mechanic	✓				
model	✓	✓			
"model t"		✓			
motor*	✓				
oakland		✓			
olds*		✓			
"paris race"					✓

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