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Social Emotions and the Legitimation of the Fertility Technology Market

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45 **Running Head:** MIMOUN, TRUJILLO-TORRES, AND SOBANDE

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ABSTRACT

Using the sociology of emotions, we investigate the role of social emotions as a legitimating force in the market. In a longitudinal study of the media coverage surrounding U.S. fertility technologies, we find that legitimation involves the establishment of hierarchies among feeling rules, which dictate what social emotions are expressed toward markets, consumers, and technologies. We delineate three mechanisms (polarizing, reifying, and transforming social emotions) that are affected by trigger events such as product innovations and historical developments. These mechanisms work to (re)shape regulatory, normative, and cultural-cognitive legitimacy pillars, influencing the overall cultural attention paid to a market. Consequently, legitimation is ongoing and fragmented as the dominance of feeling rules varies across multiple entities and over time, with negative social emotions and controversies at times aiding this process rather than exclusively hindering it.

Keywords: emotion, legitimation, feeling rule, assisted reproductive technology, innovation, controversy

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3 In the fall of 2019, news media reported more than 60 deaths from poisoning by e-cigarettes, as
4 well as a fear of a “vaping crisis among youth” and that manufacturers were “luring young
5 people into addiction” (Bokat-Lindell 2019). This widespread reporting launched a “vape panic”
6 (Bokat-Lindell 2019), followed by a swift banning of flavored e-cigarettes in some U.S. states
7 and the strong recommendation by federal agencies against all vaping products (Sullum 2020).
8 These events severely affected the legitimacy of the e-cigarette market; in addition to increased
9 regulatory, law enforcement, and cultural scrutiny, leading brands (e.g., JUUL) were forced to
10 ban teen-friendly flavors (Centers for Disease Control and Prevention 2020) redefining the
11 boundaries of the market. Emotion-laden developments such as these, then, can affect the
12 cultural attention paid to market entities and exemplify that “emotions are a powerful force in the
13 structure and change of societies” (Scheff 2000, 84).
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28 This study focuses on the intersection of emotions and market legitimation, defined as the
29 social process by which the legitimacy of a market entity (e.g., product, practice, market) is
30 accepted by its stakeholders (Humphreys 2010b). Legitimacy is “a generalized perception or
31 assumption that the actions of an entity are desirable, proper, or appropriate within some socially
32 constructed system of norms, values, beliefs, and definitions” (Suchman 1995, 574). Market
33 legitimation is crucial to grasp how markets emerge and evolve (Giesler 2012) and how
34 consumption practices and ideologies are constructed, adopted, and reproduced (Dolbec and
35 Fischer 2015; Humphreys 2010a, b; Sandikci and Ger 2010; Scaraboto and Fischer 2013). We
36 explore the following question: How do emotions affect the legitimation of potentially
37 controversial markets?
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51 In extant literature, emotions play a limited role in market legitimation, despite recent
52 calls for more attention to this intersection (Deephouse et al. 2017; Valor, Lloveras, and
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Papaoikonomou 2020). Thus, this process remains mostly conceptualized as cognitive, rational, and systematic (Deephouse et al. 2017; Voronov 2014). This oversight has two main implications for our current understanding of market legitimation. First, an understanding of the broader impact of emotions on market legitimation beyond the agentic, strategic actions of adversarial consumers is lacking. For example, Valor et al. (2020) show that emotions in activists' public condemnation of villains can drive the delegitimation of a particular consumption practice. By contrast, we argue that emotions can encourage legitimation, complicate it, or change its course. Thus, we investigate the multiple roles of emotions in market legitimation as historical, sociocultural, and product changes take place.

Second, we complement and expand literature by considering the heterogeneous impact of emotions on market entities such as consumers and technologies. Indeed, prior research has only investigated the uniform impact of emotions on the (de)legitimation of a homogeneous group, such as Valor et al.'s (2020) study on villains. Understanding the role of emotions in legitimation could be significant in many contexts. For example, recent research shows that, by activating a threat of contagious disease, new vaccines induce fear and disgust that limit their acceptability and adoption (Galoni, Carpenter, and Rao 2020). Beyond technologies, Haack, Pfarrer, and Scherer (2014) show that scandals can weaken the legitimacy of governance schemes by inducing negative emotions.

We use the sociology of emotions (Hochschild 1983; Scheff 1994) and theorize *social emotions* as “both an outcome of and inherent to the process of negotiating and settling on an institutional order” (Voronov 2014, 171). We also integrate *feeling rules*, or the “implicit and informal guidelines to what emotions we are expected to feel and in what social context” (Illouz, Gilon, and Shachak 2014, 224). Feeling rules highlight the interactions between structural

emotional norms and explain how emotions are experienced and expressed.

We conduct a longitudinal examination of the U.S. fertility technology (FT) market from 1987 to 2017. This is an appropriate context because constant technological innovations and controversies involving scientific, ethical, moral, legal, political, and economic issues (Ben-Asher 2009) regularly reopen the question of FT legitimacy (Patala et al. 2019). FT-associated events can cause extreme and explicit emotional displays related to the high uncertainty and risk associated with products, technologies, users, and expectations (Grodal and Granqvist 2014; Patala et al. 2019). While prior studies on FT (e.g., Fischer, Otnes, and Tuncay Zayer 2007; Tuncay Zayer, Otnes, and Fischer 2015) have studied how people persist in and manage the risky endeavor of consuming FT, little is known about the cultural and socioemotional structures that are available to support these choices or how these structures have changed the market over time.

While most processes of market legitimation involve emotions, we chose to focus on the FT market because it is representative of markets in which emotions play a key role—that is, markets whose legitimacy is often challenged. These may be emerging markets in which legitimation is ongoing (Grodal and Granqvist 2014) or mature markets in which new products and technological innovations go hand-in-hand with controversies (Deephouse and Suchman 2008; Giesler 2012; Patala et al. 2019). Our study relies on a media data set comprising 3,078 articles from three U.S. newspapers and nine U.S. magazines. We analyzed this data set to capture how changes in emotions are constructed and expressed in public discourse associated with the evolution of technologies and the historical and sociocultural environment. We contextualized this data set with background data from fertility clinics, health organizations, and consumer blogs to provide information on the institutional environment, the timeline of innovations, and the sociocultural context and its emotional resonance.

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3 We find that emotions affect legitimation through three social emotions-driven
4 mechanisms underscored by feeling rules: polarizing, reifying, and transforming. When
5 polarizing emotions, news media counterpose two antagonistic feeling rules that coexist as moral
6 batteries and create two equal-power emotional extremes that market actors are motivated to
7 defend. When reifying emotions, news media reveal and reinforce dominant feeling rules
8 associated with an entity, making emotional assessments more comprehensible and accessible to
9 a broader audience. When transforming emotions, news media update the feeling rules associated
10 with an entity through exception-triggered transforming or precarious transforming.
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22 Our work contributes to the literature on market legitimation by evidencing how changes
23 in emotions and feeling rules (re)shape the legitimacy of a market throughout the legitimation
24 process. First, we show that market legitimation takes place through the emergence,
25 maintenance, and change of hierarchies of feeling rules and their associated emotions, which
26 increases cultural attention to the market and influences legitimacy pillars. Second, by showing
27 that the applicability of feeling rules is not homogeneous to all consumers and all technologies in
28 a market, we reveal the heterogeneity of market legitimation within a market. In doing so, we
29 also answer the calls for further research on collective emotional dispositions (Gopaldas 2014,
30 1008) and greater integration of “emotions to the study of legitimacy” (Deephouse et al. 2017,
31 38). We provide a nuanced understanding of emotional multiplicity in legitimation by
32 recognizing how negative emotion, contestation, and controversy can aid legitimation processes
33 rather than exclusively hindering them.
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52 THEORETICAL FRAMEWORK

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Market Legitimation

Market legitimation is the process that brings changes to the legitimacy of a market entity (e.g., market, industry, brand, consumer segment, consumption practice) as it becomes accepted by its stakeholders as congruent with dominant social norms and values. In other words, the entity “has demonstrated its appropriateness and goes unchallenged regarding societal rules, norms, values, or meaning systems” (Deephouse et al. 2017, 32). Consumer research has mobilized institutional theory, in particular new institutional theory (DiMaggio and Powell 1983; Meyer and Rowan 1977), to explain how market entities’ legitimacy emerges and changes (Dolbec and Fischer 2015; Giesler 2012; Humphreys 2010a, b; Scaraboto and Fischer 2013). Market legitimacy is attained when producers, consumers, and other involved market actors “come to certain shared understandings of what is being exchanged and why” (Humphreys 2010a, 2). We examine the FT market’s legitimacy, which involves the legitimacy perceptions of market actors (e.g., buyers, sellers) who surround multiple technological products. Legitimacy has implications for how these actors access FT, develop goods and services related to FT, set prices, and advertise their offers.

This alignment of shared understanding occurs through legitimacy pillars; pillars are “bases” (Scott 1995, 74) or “dimensions” (Suchman 1995, 573) of legitimacy. The regulatory pillar includes “a stable system of rules, whether formal or informal, backed by surveillance and sanctioning power” (Scott 1995, 64) that defines what is legal or not. The normative pillar stands for the collective consensus on whether the entity is appropriate in relation to norms, values, and morality. The cultural-cognitive pillar involves a collective consensus on whether the entity is comprehensible and taken for granted (Scott 2008). These manifestations of legitimacy are not

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3 mutually exclusive or completely distinct from one another (Deephouse et al. 2017).
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6 Broadly speaking, changes to market legitimacy (i.e., the legitimation or delegitimation
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8 of market entities) are brought forward by nonemotional mechanisms that emphasize cognitive
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10 and strategic aspects that affect one or multiple legitimacy pillars. These include changes in
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12 institutional structures (e.g., emergence of new institutional actors), shifts in semantic
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14 associations (e.g., introduction of new frames), and material changes (e.g., deployment of new
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16 physical structures) (Dolbec and Fischer 2015; Humphreys 2010a, b; Scaraboto and Fischer
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18 2013). For example, shifts in semantic associations can include the deployment of rhetorical
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20 strategies to bridge frames (Dolbec and Fischer 2015), change frames (Humphreys 2010b), and
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22 introduce new frames (Scaraboto and Fischer 2013) to increase legitimacy. Rhetorical strategies
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24 are complemented by material and institutional changes often requiring the coordination of
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26 multiple actors. These mechanisms work through the accumulation of small, incremental
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28 individual changes and/or the large-scale mobilization of multiple, powerful actors (Dolbec and
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30 Fischer 2015; Humphreys 2010a, b; Scaraboto and Fischer 2013).
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36 While this body of research has expanded the field's understanding of how legitimation
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38 takes place, an emerging stream of organizational research shows that the emotional dimensions
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40 of this process are neglected. Organizational scholars note that emotions "are connected to and
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42 are an intrinsic part of cognitions, beliefs, and moral judgments" (Voronov and Vince 2012, 75)
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44 and are essential to "produce, sustain and disrupt institutional practice" (Friedland 2018, 515).
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46 Yet "[r]esearch has only just begun incorporating emotions to the study of legitimacy"
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48 (Deephouse et al. 2017, 38). It is, therefore, not surprising that scholars have called for further
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50 investigation of such emotional dynamics and emotional experiences (Deephouse et al. 2017;
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52 Voronov and Vince 2012). This is an important gap to address given that emotions can motivate
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3 and/or be antecedents to changes in pillars and thus affect legitimation.
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8 An Emotional Turn for Market Legitimation Studies 9

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12 To understand the place of emotions in studies of legitimation, we rely on the sociology
13 of emotions (Hochschild 1983; Illouz et al. 2014). This approach understands emotions “in the
14 context of cultural repertoires, social practices, rituals, institutions, and discourses, or what we
15 can call language games” (Illouz et al. 2014, 237). Accordingly, emotions and social structures
16 are interdependent, as emotional experience and expression “are constrained in [human]
17 interaction by culture and social structure” (Stets and Turner 2008, 32). This means that
18 “emotions are shaped by cultural models of the self, moral codes and forms of sociality” (Illouz
19 et al. 2014, 222). Thus, this view supports calls for understanding emotions as structured by and,
20 at the same time, structuring social phenomena, beyond their individual, collective, and/or
21 embodied-level implications (Barbalet 2001; Hareli and Parkinson 2008; Lupton 1998).
22 Appendix A provides a comparison of individual and social emotions, and appendix B shows
23 differentiation within individual and social emotions.
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40 Relying on the works of Hochschild (1983) and Scheff (1994), we define “social
41 emotions” (hereinafter “emotions”) as cultural products aligned with norms and expectations
42 originating in social settings. We need to study emotions to understand legitimacy dynamics as
43 “social solidarity, group bonds, attachments, legitimation of social structures, and social control
44 depend far more on emotions than culture or language” (Turner 2014, 21). We highlight three
45 ways that emotions play a role in legitimation and institutional change. First, emotions can be
46 *indicators* of legitimacy. For example, the emotions disseminated by news media or brands
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3 indicate the legitimacy of a market entity when positive and its lack of legitimacy when negative
4 (Gopaldas 2014; Humphreys 2010b). Though useful, this view does not unpack the role of
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6 emotions in legitimacy dynamics. Second, emotions can *moderate* legitimation by amplifying or
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8 diminishing the impact of cognitive or strategic legitimation mechanisms. Specifically, Grodal
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10 and Granqvist (2014) indicate that emotions can amplify the impact of rhetorical strategies on
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12 actions, thus fostering institutional change. Third, recent studies suggest that emotions can be
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14 present in *legitimation mechanisms*, either at the individual level by driving legitimacy
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16 judgments (Haack et al. 2014; Jakob-Sadeh and Zilber 2019) or at the market level as a
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18 subcomponent of cognitive processes (Friedland 2018; Toubiana and Zietsma 2017).
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20 Specifically, at the market level, emotions can affect the pillars of legitimacy and the overall
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22 cultural attention paid to the market (Valor et al. 2020; Voronov 2014). For example, by
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24 stigmatizing consumption practices, vilifying emotions can engender a loss of regulatory
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26 legitimacy (Valor et al. 2020), contempt for institutional actors stereotyped as villains can
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28 negatively affect normative legitimacy (Gopaldas 2014; Kuruoğlu and Ger 2015), and love and
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30 hatred can discredit the cultural-cognitive legitimacy of institutional bodies (Toubiana and
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32 Zietsma 2017). While research has advanced the understanding of the interplay of emotions and
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34 legitimacy, more work is necessary to delineate exactly how emotional mechanisms participate
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36 in the legitimation and delegitimation of market entities.
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45 To address this gap, we use feeling rules, defined as “guidelines for the assessment of fits
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47 and misfits between feeling and situation” (Hochschild 1979, 566) and as “implicit and informal
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49 guidelines to what emotions we are expected to feel and in what social context, or what emotions
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51 are to be expressed and when” (Illouz et al. 2014, 224). This concept provides a direct link
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53 between emotions and a structural mechanism. That is, feeling rules constrain the expression and
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3 experience of emotions by market actors (Hochschild 1983). For example, Higgins and Hamilton
4 (2018) show that feeling rules in wellness servicescapes require extreme displays of therapeutic
5 emotions, such as public crying. Furthermore, feeling rules and actors' emotional responses to
6 them can and do change over time (Lupton 1998). For example, news media can participate in
7 the construction and dissemination of both old and updated feeling rules as new developments in
8 a market emerge. Consumers in wellness servicescapes can also engage in emotional work or
9 emotional reflexivity (Hochschild 1983), as they attempt to obey feeling rules regarding what,
10 when, where, for how long, and how strongly to feel.
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24 Linking Emotions and Pillars at the Market Level

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28 An understanding of emotions in legitimation must also account for the mechanisms
29 through which emotions affect legitimacy of and within a market. We argue that emotions play a
30 role in legitimation through legitimacy pillars, notably by shaping regulatory, normative, and
31 cultural-cognitive legitimacy. Specifically, elaborating on the relationship between emotions and
32 pillars can provide a deeper assessment of “how institutional forces and emotional dynamics
33 reciprocally influence each other, at times reinforcing each other and at times generating tensions
34 and contradictions” (Voronov and Vince 2012, 75). Valor et al. (2020) lay the foundation for this
35 link by showing how consumer-driven emotional discourse creates broad stigmatized categories
36 (e.g., villains) that delegitimize consumption practices. What remains unanswered, however, is
37 the impact of emotions on market legitimation beyond the agentic, strategic actions of
38 adversarial consumers and the mechanisms through which emotions exert a heterogeneous
39 impact on consumers and their practices.
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3 Thus, we propose that the link between emotions and legitimacy pillars needs to account
4 for how and when changes in feeling rules and emotions relate to the overall legitimation
5 process. For example, news media reports of the increasingly divided emotions around gun
6 control in the U.S. have spurred regulatory action to protect each side of the debate (e.g., ban of
7 assault rifles vs. protection of the right of citizens to bear arms) (Clayton and Beckett 2021).
8 Likewise, the consistent link of strong emotions with entities in public discourse (e.g., Apple and
9 consumer love) can enhance their taken-for-grantedness. These examples suggest that legitimacy
10 pillars can be affected by changes in feeling rules and emotions in markets in which legitimation
11 is ongoing—that is, where the institutional infrastructure (i.e., regulatory, normative, and
12 cultural-cognitive pillars) is subject to change and legitimacy outcomes are unstable (Deephouse
13 et al. 2017; Giesler 2012; Humphreys 2010a, b). These can include both nascent markets with
14 emerging legitimacy (Grodal and Granqvist 2014) and more mature markets with frequent
15 challenges, such as updates to regulations, norms, and taken-for-granted associations due to
16 changes in politics, products, technologies, and consumer culture (Deephouse and Suchman
17 2008; Patala et al. 2019). In such markets, extreme and explicit emotional displays may be linked
18 with higher levels of uncertainty and risk that threaten the legitimacy of the market and its
19 products, technologies, and users (Grodal and Granqvist 2014).
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42 Feeling rules are “essential in producing fairly uniform and shared notions of what is
43 appropriate behavior within a referent group, because they allow people to determine how they
44 and others align with the group expectations” (Voronov 2014, 174). Because “actors instantiate,
45 reproduce, and modify institutionalized practices through habit, tacit knowledge, culture,
46 routines, motivations and emotions” (Jarzabkowski, Matthiesen, and Van de Ven 2009, 289),
47 feeling rules can shape institutional arrangements and legitimacy. That is, feeling rules coalesce
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3 as organizing principles at the macro level (Barbalet 2001) while providing links to individual
4 emotions. This requires departing from, but also linking, the symbolic-interactionist framework
5 of emotions as performed and expressed with a perspective on emotions as social constructions
6 that have a structuring effect. By showing how changes in emotions, feeling rules, and
7 legitimacy pillars are associated, we can further weaken the assumption of a “dispassionate and
8 disembodied ideal of public debate” (Wahl-Jorgensen 2019, 78). By contrast, we concur that
9 “emotions are central to our social and political lives, and the ways in which we make sense of
10 ourselves and the collectivities and communities we inhabit” (Wahl-Jorgensen 2019, 1).

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12 In summary, while extant literature suggests that emotions matter in legitimation, the
13 conceptualization of emotions as a central dimension of market-level legitimation remains
14 understudied. Building on Valor et al.’s (2020) study, we propose that emotions must be
15 investigated as a central force of legitimation, both separated from more cognitive constructs
16 (e.g., institutional logics) and tied to foundational legitimacy pillars. Thus, we need to treat
17 emotions as a central and structuring force in market legitimation dynamics. We now describe
18 the context in which we conducted our study and explain why it is appropriate to answer our
19 research question of how emotions affect the legitimation of potentially controversial markets.

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47 We focus on the U.S. FT market and adopt an archival approach by collecting data from
48 1987 to 2017. FTs (also called assisted reproductive technologies [ARTs]) are “techniques where
49 egg and sperm are not brought together (or an embryo is not created) by sexual intercourse, but
50 rather through medical techniques... [and] also include research and social issues related to the
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3 application of these techniques” (Goggin et al. 2004, 3). FTs include a wide array of constantly
4 evolving services, technologies, and techniques (e.g., in-vitro fertilization [IVF], egg and embryo
5 freezing [and the derived embryonic stem cells], egg and sperm donation, preimplantation
6 genetic diagnosis [PGD], mitochondrial transfer, surrogacy, artificial insemination) (see web
7 appendix 1 for definitions). FTs have revolutionized the way reproductive problems are solved,
8 introducing fertility services that facilitate biological parenthood for various consumer segments
9 (Fischer et al. 2007; Takhar and Houston 2019). Since the first successes, FT use has steadily
10 grown and now represents a significant and mainstream phenomenon (see figure 1). The current
11 market averages 2.4 billion USD (IBISWorld 2020).
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31 Appropriateness of the Context 32 33 34

35 The FT market is an ideal context in which to investigate our research question for two
36 reasons. First, the FT market is socially constructed at the intersection of several well-established
37 feeling rules. Indeed, the FT market is positioned at the intersection of several fundamental
38 moral imperatives in U.S. society (Fischer et al. 2007; Sobande, Mimoun, and Trujillo Torres
39 2020). In particular, the need for biological parenthood, considered a cornerstone of the family
40 unit and of a “normal life” (Becker 2000), and scientific rationalism (Fischer et al. 2007)
41 supports the use of FT.
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51 Applying the concept of feeling rules (Hochschild 1983) to prior research on the FT
52 market, we identify three feeling rules that dictate how emotions are experienced and performed
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3 in relation to FT. The first pertains to the imperative of biological parenthood (hereinafter bio-
4 parenthood feeling rule). This feeling rule arises from the pronatalist expectation that women are
5 (should feel) naturally maternal and should want to have children (Becker 2000; Fischer et al.
6 2007). It requires public experience and displays of the desire to pursue biological parenthood, of
7 joy in relation to the experience of biological parenthood, of delight in relation to pregnancy and
8 childbirth (e.g., scans, changing body), of hope when pursuing biological parenthood, and of
9 grief if this desired outcome (i.e., biological baby) is unattainable (Fischer et al. 2007; Takhar
10 and Houston 2019; Tuncay Zayer et al. 2015). Next, FTs are subject to the paradoxical tension
11 between two feeling rules related to technology consumption. The technophilic feeling rule
12 dictates the experience and display of positive emotions (e.g., hope, gratitude, excitement)
13 toward new technologies as scientific advance, progress, power, knowledge, access to new
14 opportunities, and superior abilities (Kozinets 2008; Mick and Fournier 1998). By contrast, the
15 technophobic feeling rule dictates the experience and performance of negative emotions (e.g.,
16 disgust, rejection, anger, fear) in reaction to technology as dangerous, harmful, and physically
17 and morally threatening (Giesler 2012; Kozinets 2008). Feeling rules are “the side of ideology
18 that deals with emotion and feeling” (Hochschild 1979, 551); that is, feeling rules translate
19 ideologies into emotional imperatives that dictate how to feel and how to manage emotions. The
20 promotion of or resistance to an ideology can happen at the level of feeling rules as imposing
21 certain guidelines of emotion experience, and display can ensure that the associated ideology
22 dominates. While all ideologies are related to feeling rules, the same feeling rule can also be
23 associated with several ideologies. For example, the Luddite ideology (Kozinets 2008)
24 (conservatism in our context) is associated with the technophobic feeling rule, while the
25 transhumanist ideology (Bostrom 2003) (pronatalism in our context) is also associated with the
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3 technophilic feeling rule.
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6 Second, the FT market is a rich context to examine legitimation patterns because frequent
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8 controversies challenge its appropriateness and desirability (Takhar and Houston 2019). The FT
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10 market is characterized by ongoing cycles of FT innovations that are associated with recurrent
11
12 and multilayered controversies, creating high uncertainty and risks (Tuncay Zayer et al. 2015).
13
14 For example, ongoing FT innovations can generate technological and regulatory discontinuities
15
16 as well as ambiguities and contradictions within the institutional field, which trigger the
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18 questioning of established and taken-for-granted orders (Suddaby and Greenwood 2005).
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23 A Brief Historical Summary of the FT Market

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28 The legitimation of the FT market begins with the birth of Louise Brown, the world's
29
30 first successful IVF baby, in 1978 (Thompson 2016). In the U.S., the first IVF baby was born in
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32 1981, and the first birth from egg donation occurred in 1983. At this stage, FTs were highly
33
34 experimental and resulted in a limited number of births. Owing to the unavailability of all
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36 contemporary print media reports in electronic format, we do not cover this initial stage and only
37
38 collect media reports since 1987. Nonetheless, the 30-year period we cover (1987–2017)
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40 captures enough transformations of the FT market for us to theorize the role of emotions in
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42 legitimation. Given the extensive archival analysis, we divided the data set into four periods:
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44 1987–1996 (emergent institutionalization), 1997–2000 (systematization of market practices and
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46 technologies), 2001–2011 (expansion and national debate around the scientific use of stem cells),
47
48 and 2012–2017 (market maturation despite remaining challenges). Each period corresponds to
49
50 specific innovations, political events, and associated controversies, the impact of which we
51
52 explore in our findings. By 2000, the market had institutionalized under the structuring influence
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3 and federal mandate of Society for Assisted Reproductive Technology (SART) and Centers for
4 Disease Control and Prevention. By the end of the third period, the overall FT market had
5
6 attained legitimacy, as revealed by major legal advances (e.g., revision of Uniform Parentage
7
8 Act) and normative and sociocultural recognition (e.g., Nobel Prize) (Thompson 2016).
9
10 Legitimacy is confirmed in the last period with an increase in taken for grantedness and
11
12 comprehensibility of FT (i.e., cultural-cognitive legitimacy). For example, 1.9% of all U.S.
13
14 babies are born through FT (Centers for Disease Control and Prevention, American Society for
15
16 Reproductive Medicine, and Society for Assisted Reproductive Technology 2018), and one-third
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18 of U.S. adults have used or know someone who has used FT, according to a Pew Survey
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20 (Livingstone 2018), reflecting its increased cultural acceptance. Yet normative and regulatory
21
22 legitimacy are not homogeneously attained across states and sociocultural backgrounds (e.g.,
23
24 income, race). This is visible in the lack of insurance coverage of FT in most U.S. states and the
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26 remaining, if lessened, stigma associated with FT consumption for some consumer segments
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28 (Sternke and Abrahamson 2015).
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35 Most notably, examining only the overall FT market limits our understanding of
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37 legitimacy. We note that the legitimacy of the market is highly integrated with the legitimacy of
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39 FTs themselves and that, by studying the legitimation of specific technologies, we are also
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41 evaluating market legitimation. Thus, the overall market legitimacy can be threatened when the
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43 legitimacy of a specific technology is disputed. We study these legitimacy dynamics by
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45 elaborating on the relationship between the legitimacy of specific FT and the overall market.
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51 METHOD

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Data Collection

We examined the role of emotions in the legitimation of FT in the U.S. by relying primarily on archival news media data. News media have long served as a key legitimacy source, as they both mirror and shape public opinion (Humphreys 2010b). The key influence of news media in the formation of public opinion stems from the usually close alignment between the content produced and public opinion (Gamson et al. 1992). However, we acknowledge that other actors (e.g., consumers, marketers, brands, legislators) play a role in the legitimation of a market entity (Dolbec and Fischer 2015; Giesler 2012; Humphreys 2010b). We thus contextualize our news media data by accounting for the dialogical relationship between these and other sources of legitimacy. To do so, we collected background material, including social media posts, website pages, blog posts, brochures, and advertisements from fertility clinics; organizations related to the promotion, denouncement, and regulation of FT; and consumer-bloggers (see table 1 for the data set summary). Background material helped us gain a deeper understanding of the feeling rules and their management by consumers in the FT market and of the institutional environment, timeline of innovations, and sociocultural context.

The news media data include newspaper and magazine articles dealing with the FT market. We collected articles about FT published between 1987 and 2017 from three newspapers: *The New York Times (NYT)*, *The Wall Street Journal (WSJ)*, and *USA Today (UT)*. This resulted in 2,349 articles (*NYT*: 1,392; *WSJ*: 416; *UT*: 541). We chose these publications for their high readership and coverage of science-related news. For example, *NYT* is the second most circulated newspaper in the U.S. (Associated Press 2013). While these newspapers might be viewed as targeting elite public audiences, their coverage is also essential in shaping public

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3 awareness and opinion (McAdam 1982). In combination, these newspapers' target audiences
4 may reflect the general demographics of FT consumers.
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8 To counteract any ideological bias and contestation of our focus on prestige media outlets
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10 (Carter and Deephouse 1999), we also collected articles about FT published between 1987 and
11
12 2017 in nine representative U.S. magazines with a variety of ideological positioning and
13
14 intended audiences that all regularly cover FT. These included 739 articles from three women's
15
16 magazines, *Cosmopolitan* (20), *Redbook* (50), and *Good Housekeeping* (23); three popular
17
18 magazines, *People* (62), *Time* (138), and *Newsweek* (119); and three scientific news magazines,
19
20 *Scientific American* (41), *New Scientist* (228), and *Science News* (58). The starting year varies
21
22 depending on magazines' starting date and digitized articles' availability. Digital unavailability
23
24 meant that at times, we substituted original articles with abstracts for the earliest years.
25
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28 We used different databases to ensure maximum access to articles related to FT within
29
30 the selected publications. To limit search biases, we used multiple keywords (Humphreys and
31
32 Wang 2018) chosen to cover a broad array of FT without capturing general parenthood topics
33
34 (in-vitro fertilization, IVF, egg don!, don! egg, don! sperm, sperm don!, frozen embryo! don!,
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36 embryo!, artificial insemination, intrauterine insemination, egg freez!, frozen egg!, freez! egg,
37
38 oocyte cryopreservation, assisted reproductive technolog!, and embryo cryopreservation).
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45 [Insert table 1 about here]
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49 Data Analysis 50 51 52 53

54 We combined two approaches to integrate the depth and breadth of our analysis:
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3 automated content analysis (ACA) to evaluate trends and relationships between constructs
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5 (Humphreys and Wang 2018) and hermeneutic analysis to contextualize these numerical
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7 conclusions (Thompson 1997). We first approached our news media data set with a qualitative
8
9 analysis of a subsample of the data (Humphreys and Wang 2018) using an iterative, hermeneutic
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11 approach (Thompson 1997). To ensure rigor, the three authors coded the data individually before
12
13 comparing the emerging themes. We returned to this interpretive approach throughout the data
14
15 analysis to embed our emerging understanding, illustrate our findings, and confirm our
16
17 quantitative findings.
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22 The initial step of our ACA was a systematic random sampling of a subsample of the
23
24 data, following established guidelines (Humphreys and Wang 2018). With this qualitative
25
26 analysis, we combined the existing internal 2015 Linguistic Inquiry and Word Count (LIWC)
27
28 dictionary, which counts valence, verb tense, and categories developed from common emotion
29
30 rating scales, and custom dictionaries constructed using established methods (Humphreys and
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32 Wang 2018; Pennebaker, Booth, and Francis 2007) for legitimacy pillars, emotions, FT, and
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34 consumer segments (see web appendix 2 for details on the coding, dictionaries' construction,
35
36 word lists, and alphas).
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40 Next, we conducted a quantitative ACA of the whole set of articles using LIWC for
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42 trends over time (Pennebaker et al. 2007) and then SPSS for Pearson correlations and t-tests (see
43
44 web appendix 3 for word frequencies overall and by publication). We analyzed the newspapers
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46 by publication and in an aggregated manner. For the magazines, we did not reach the necessary
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48 cap of 50 articles per publication per year (Humphreys and Wang 2018), so we only analyzed at
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50 the aggregated level by period (see tables 1 and 2). The correlations reported here are based on
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52 the degree of consensus across publications (see web appendices 4.1–4.4 for results per
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3 publications). We focus primarily on variables that at least two data sources qualify as
4 statistically significant (two individual newspapers, one newspaper and aggregated data from
5 newspapers *or* magazines, or aggregated data from newspapers *and* magazines). In other words,
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8 we present our correlation data based on “agreement” across at least two data sets to reflect that a
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11 theme has a broad sociocultural presence. Thus, we stress patterns that reflect a systemic
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14 influence and overall public discourses, rather than more narrow trends matching a single outlet.
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17 When appropriate, we group different emotions by valence (positive vs. negative) to highlight
18
19 agreement and/or disagreement across publications.
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22 After conducting the ACA, we returned to our qualitative analysis, moving back and
23
24 forth between data and theory to iteratively refine emerging themes (Spiggle 1994) and construct
25
26 our understanding of the emotions-driven mechanisms that structure FT legitimation. Building
27
28 on our previous analyses, we interpreted and abstracted emerging themes to develop theoretical
29
30 inferences (Spiggle 1994; Thompson 1997). We focused on FT representations, emotions
31
32 generated from interactions with these technologies, explicit and implicit references to feeling
33
34 rules, and how these technologies were processed, accepted, challenged, or internalized.
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39 [Insert table 2 about here]
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42 43 **SOCIAL EMOTIONS-DRIVEN LEGITIMATION MECHANISM** 44 45

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48 We introduce three social emotions-driven mechanisms that contribute to the legitimation
49
50 of the FT market: polarizing, reifying, and transforming. These interrelated mechanisms affect
51
52 FT legitimacy by counterposing antagonistic feeling rules in moral batteries, revealing and
53
54 reinforcing hierarchies of feeling rules, and significantly updating the feeling rules associated
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3 with entities in this market, respectively. We focus on exemplary FT and consumer segments to
4 illustrate the mechanisms. In web appendix 5, we provide a comprehensive view of how the
5 mechanisms are interrelated and correspond to different FT across periods.
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10 11 Polarizing Emotions

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15 When polarizing emotions, news media counterpose two antagonistic feeling rules that
16 coexist as moral batteries around highly controversial entities. Through a moral battery, “[a]n
17 emotion can be strengthened when we explicitly or implicitly compare it to its opposite, just as a
18 battery works through the tension between its positive and negative” (Jasper 2011, 291).
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24 Polarizing plays a crucial role in legitimation because (1) it creates two emotional extremes and
25 (2) it energizes action in market actors to ensure their emotional extreme prevails.
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29 *Creating Emotional Extremes.* When polarizing, the juxtaposition of two equally strong
30 antagonistic feeling rules and their associated emotions toward an entity creates two emotional
31 extremes that divide public discourse. This is evidenced in the stem cells controversy 2001–
32 2011, which involved the scientific use of stem cells from discarded embryos produced, usually
33 with IVF, in fertility clinics. The centrality of this debate is clear in the rise of stem cell media
34 coverage, which became the highest among coverage of all aspects of FT, increasing from 0.09%
35 of all words in *NewsComb* in 1997–2000 to 0.42% in 2001–2011 ($t = -3.105, p < .05$) (see also
36 figure 2, panel a). This turbulent period for the FT market saw a heightened national moral
37 debate that counterposed two antagonistic feeling rules around the use of stem cells, as
38 evidenced here:
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51 To hear those on either side of the debate over stem-cell research tell it, President Bush
52 must choose between adorable infants adopted by loving parents and people tormented by
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3 debilitating diseases such as Alzheimer's and Parkinson's. The ethical dilemma Bush
4 faces is complex.... The emotional debate was presented in human terms Tuesday on
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6 Capitol Hill. Opponents of stem-cell research pointed to toddler Hannah Strege, who was
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8 born as a result of [IVF]. Rep. Chris Smith, R-N.J., said she began life in a "frozen
9
10 orphanage," or lab where her embryo was stored. Meanwhile, disease victims joined
11
12 lawmakers at a news conference endorsing stem-cell research. The president and
13
14 Congress "hold our lives in their hands," said Joan Samuelson, a California lawyer who
15
16 has Parkinson's disease. (UT 2001)

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18
19 In this excerpt, news media juxtaposes incompatible emotions (hope and fear, joy and
20
21 despair, condemnation and acclaim) in moral batteries, which frame the stem cells issue as an
22
23 "emotional debate" and "convey the emotional climate of public discourse" (Wahl-Jorgensen
24
25 2019, 2). The moral battery built around stem cells is due to the counterposing of two
26
27 antagonistic feeling rules: technophilic and technophobic. On the one hand, the technophilic
28
29 feeling rule dictates positive emotions toward new technologies, such as scientific advancement,
30
31 progress, power, knowledge, access to new opportunities, and superior abilities (Kozinets 2008).
32
33 Stem cells were regarded as beneficial to society as a potential cure for a wide number of
34
35 diseases and conditions, such as Parkinson's disease, as mentioned in the quote. According to the
36
37 technophilic feeling rule, stem cells should be welcomed by experiences and displays of positive
38
39 emotions. For example, a 2001 *NYT* article indicates such positive emotions: "Stem cells ... are
40
41 generating great excitement in science because they can, in theory, grow into any of the body's
42
43 cell types. And so scientists hope one day to use them for replacement tissue and organs for
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45 patients with a variety of diseases, including Parkinson's and diabetes." Thus, in 2001–2011 (see
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47 web appendix 4.3), stem cells are positively correlated with hope (*NYT*, *WSJ*, *NewsComb*),
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3 celebratory emotions (*NYT*, *UT*, *NewsComb*), and therapeutic emotions (*NewsComb*,
4 *MagsComb*) and negatively associated with anxiety (*NYT*, *NewsComb*, *MagsComb*).
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8 On the other hand, the technophobic feeling rule dictates the arousal and performance of
9
10 negative emotions in reaction to the perception of stem cells as a new “weapon(ized)”
11
12 technology that is dangerous, unknown, powerful, and harmful (Kozinets 2008) and a morally
13
14 threatening entity, given its association with aborting embryos for the sake of obtaining stem
15
16 cells. The references to abortion fanned the flames of this enduringly divisive social issue, which
17
18 is associated with political and ideological polarization across the U.S. (DiMaggio, Evans, and
19
20 Bryson 1996). A *WSJ* (2005) excerpt exemplifies the vilification of stem cell research from the
21
22 technophobic camp, “because of religious beliefs that harvesting stem cells destroys human
23
24 embryos and thus is the moral equivalent of murder.” As a result, we find that stem cells are also
25
26 positively correlated with controversy (*NYT*, *UT*, *WSJ*, *NewsComb*) and experimental sentiments
27
28 (*NYT*, *UT*, *NewsComb*) and negatively correlated with positive outcomes (*NYT*, *WSJ*,
29
30 *NewsComb*) (see web appendix 4.3). Web appendix 6 shows a cartoon depicting the moral
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32 battery associated with stem cell debates.
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38 As the stem cell controversy proves, news media can create moral batteries around new
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40 technologies. By juxtaposing antagonistic feeling rules, they mobilize a range of incompatible
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42 emotions. The use of moral batteries explains why previous studies show that public opinion
43
44 toward technological innovations often oscillates between fear and hope (Nabi and Prestin 2016).
45
46 Our findings contrast with the view that legitimacy struggles occur between an emotionally poor
47
48 and an emotionally rich side (Toubiana and Zietsma 2017). We do not find some emotional
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50 displays being framed as rational and others as irrational (Voronov 2014); rather, we find that
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52 legitimacy struggles can unfold by leveraging moral batteries charged with antagonistic
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3 emotions. We elaborate on prior works (Toubiana and Zietsma 2017; Voronov 2014) and show
4 that the opposition between polarized emotions can be framed in terms of norms such as moral
5 versus immoral emotional displays (rather than rational versus irrational).
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10 Moreover, polarizing allows for the simultaneous coexistence of antagonistic legitimacy
11 evaluations of an entity. There was no clear hierarchy of feeling rules and emotional strength in
12 the stem cell controversy. Indeed, the stem cell moral batteries divide public discourse,
13 consumers-citizens, politicians, and scientists between two extreme emotional poles. This
14 finding contrasts with other legitimation perspectives in which the acceptance of an entity
15 depends on the prevalence of one particular discourse. For example, Humphreys (2010b) shows
16 that legitimacy depends on the prevalence of wealth over poverty and purity over filth
17 discourses. Gopaldas (2014) also finds a consensus between brands', consumers', and activists'
18 expressions of emotions, in that they all blame villains, celebrate heroes, and express concern for
19 victims. With moral batteries, not only do we find greater heterogeneity of emotions being
20 experienced and displayed, but we also find that emotions actors mobilize can be critical to
21 legitimation by fostering more active engagement. This suggests that polarizing builds
22 sociocultural ambivalence with moral batteries that simultaneously juxtapose antagonistic
23 emotions around the same issue. In doing so, polarizing supports the simultaneous normative and
24 cultural-cognitive legitimation and delegitimation of entities, which creates coexisting but
25 incompatible normative expectations of action, as in instances of emotional performance and
26 conflict (see Hochschild 1983).
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55 *Energizing Action.* We also find that polarizing energizes market actors into action to
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3 ensure their emotional extreme prevails. In doing so, polarizing enables contestation cycles that
4 affect regulatory, normative, and cultural-cognitive legitimacy. For example, between 2001 and
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8 2016, polarizing in news media fostered two contestation cycles that influenced legitimacy
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10 perceptions of the FT market. The energizing actions are visible in a major rise in regulatory
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12 discourses from 0.97% of all words in *NewsComb* in 1997–2000 to 1.42% in 2001–2011 ($t = -$
13
14 2.185, $p < .05$). In the period 2001–2011, we also find a strong positive correlation between stem
15
16 cells and regulatory (*NYT*, *WSJ*, *NewsComb*, *MagsComb*) and moral (*NYT*, *UT*, *WSJ*,
17
18 *NewsComb*) and a negative correlation with social (*WSJ*, *NewsComb*) (see web appendix 4.3).
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21 We find that the two cycles of contestation, where the moral batteries around stem cells
22
23 are observed, involve regulatory (e.g., congressional bill), political (e.g., executive order), and
24
25 scientific (e.g., academic publications) actions (see web appendix 7 for a summary). The first
26
27 cycle of regulatory and political action (2001–2008) took place during the Bush administration,
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29 which was aligned with a conservative political and religious base favoring the technophobic
30
31 feeling rule and portraying stem cell research as threatening. These efforts resulted in a series of
32
33 regulatory actions (i.e., a 2001 executive order and 2005 and 2007 vetoes of congressional bills)
34
35 to prevent the use of federal funding for embryonic stem cell research, actions that limited
36
37 scientific work to a few existing stem cell lines derived from fertility clinics. Emphasizing his
38
39 alignment with the technophobic moral battery pole, President Bush stated:
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44 We recoil at the idea of growing human beings for spare body parts or creating life for
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46 our convenience.... I also believe human life is a sacred gift from our creator. I worry
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48 about a culture that devalues life, and believe as your president I have an important
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50 obligation to foster and encourage respect for life in America and throughout the world.
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53 Embryonic-stem-cell research offers both great promise and great peril, so I have decided
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3 we must proceed with great care. (*UT* 2001)

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5 In this quote, displays of care, concern, fear, and disgust are performed in accordance with the
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In this quote, displays of care, concern, fear, and disgust are performed in accordance with the
technophobic feeling rule, illustrating the entanglement of emotions, media, and politics (Roberts
and Wahl-Jorgensen 2021). Bush's executive actions tilted the regulatory legitimacy scale away
from stem cell research, despite intense and heated congressional hearings and the fervent
advocacy pro-stem cell research by the scientific community, individuals (e.g., celebrities
Christopher Reeve and Michael J. Fox), and disease advocacy institutions.

The second contestation cycle ensued in 2009–2016, when President Barack Obama
reversed the stem cells research bans (2009 executive order; 2016 21st Century Cures Act),
tilting the scale toward the other moral battery pole and generating a major turnaround in
regulatory legitimacy. Obama displayed hope and support in accordance with the technophilic
feeling rule by stating: “As a person of faith, I believe we are called to care for each other and
work to ease human suffering. I believe we have been given the capacity and will to pursue this
research—and the humanity and conscience to do so responsibly” (*NYT* 2009). Senator Edward
M. Kennedy of Massachusetts praised this action by stating: “With today's executive order,
President Obama has righted an immense wrong done to the hopes of millions of patients” (*NYT*
2009). Furthermore, in 2009 (*Sherley v. Sebelius*), emboldened scientists sued federal
government agencies to open federal funding for research (O'Quinn 2011), which concluded
with a series of favorable rulings from 2011 to 2013. Collectively, these actions again drew
fierce opposition from the anti-stem cell research camp. Despite these later changes and wins, the
legitimacy of human embryonic stem cell research was somewhat damaged. For example, a
study of federal funding in 2009-2017 found that funding for human embryonic stem cell
research consistently trailed behind that of non-human embryonic stem cell research, as the latter

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3 was deemed more “ethical” and as showing “more real progress” (Tarne 2018).
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6 This situation offers three key insights into the temporality of social emotions-driven
7
8 legitimization. First, emotional mechanisms remain crucial for legitimization in mature markets,
9
10 extending the perspective that emotions are necessary to stimulate legitimization processes
11
12 primarily in emerging markets (Grodal and Granqvist 2014). As the stem cell debate shows, the
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14 polarization of emotions associated with the introduction of new products can position existing
15
16 central products such as IVF, and possibly the FT market as whole, on the edge of legitimacy,
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18 despite the growing acceptance of FT in society as appropriate ways to achieve biological
19
20 parenthood (Fischer et al. 2007). That is, emotional mechanisms can act as change catalysts in
21
22 legitimization, promoting stability as well as instability despite the maturity of the market. Second,
23
24 by energizing actors to act and support one side of the moral battery, polarizing can reignite
25
26 regulatory structures (executive, congressional, and legal) that remain highly active for long
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28 periods (see figure 2, panel b). For example, the stem cell debates took place two decades after
29
30 the FT market emerged and spanned 16 years (2001–2016). This contrasts with previous works
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32 (Humphreys 2010b; Scott 1995) that show that regulatory legitimization is less present in mature
33
34 markets. Third, these findings demonstrate how legitimization occurs even if normative structures,
35
36 in particular those related to moral norms, remain highly polarized. Contrary to Humphreys’
37
38 (2010a, p. 4) findings, regulatory structures in particular are needed and can help rather than
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40 “hinder perceptions of legitimacy at advanced stages of industry development.” The debate
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42 around stem cells represented a turning point for the FT market as it also became culturally
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44 cognitively consecrated by two Nobel Prizes in 2010 (to Shinya Yamanaka and John Gurdon for
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46 stem cell research and to Robert Edwards for IVF). This is despite the presence of multiple,
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48 ongoing controversies beyond stem cells, such as those related to IVF cost, surrogacy, designer
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3 babies, cloning, increased maternal age, and prisoners' rights to use FT. Together, these
4 controversies may collectively be associated with the significant decrease in U.S. IVF live birth
5 rates between 2002 and 2008 and the recovery of these rates between 2008 and 2010 (Gleicher,
6 Kushnir, and Barad 2019).
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12 In summary, we find that news media polarize emotions when they counterpose two
13 antagonistic feeling rules that coexist as moral batteries (Jasper 2011) around highly
14 controversial entities. Polarizing with moral batteries plays a crucial role in legitimation for two
15 reasons: (1) it creates two emotional extremes with equal power, and (2) it energizes market
16 actors into action to ensure their emotional extreme prevails. This results in increased cultural
17 attention and institutional work, which can bring new or renewed attention to the legitimacy or
18 illegitimacy of a market. A key instance of polarizing in our data set occurs in the coverage of
19 the stem cell debate, when news media created a moral battery opposing the technophilic and
20 technophobic feeling rules. Polarizing emotions around stem cells demanded attention and
21 energized actors into action, as illustrated in the amount of institutional work, particularly around
22 regulatory legitimacy, unfolding at the time. In this case, over time, polarizing resulted in an
23 increase in regulatory and cultural-cognitive legitimacy of the FT market.
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42 Reifying Emotions 43 44 45

46 When reifying emotions, news media reveal and reinforce dominant feeling rules
47 associated with an entity, establishing which emotions are most relevant to assess an entity's
48 legitimacy. Unlike polarizing, reifying supports the establishment and maintenance of a
49 hierarchy among feeling rules, making emotional assessments of the entity more accessible and
50 comprehensible to a broader audience. Thus, via reifying, dominant feeling rules can support and
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3 /or undermine an entity's legitimation, by shaping normative and cultural-cognitive legitimacy.
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5 A compelling instance of reifying is evident in the coverage of the "multiples" consumer
6 segment (hereinafter multiples)—that is, parents who want to use multiple-embryo IVF, which
7 tends to lead to multiple births (i.e., twins, triplets). The persistent association between disgust
8 and multiples reveals the reifying of the technophobic feeling rule as dominating the bio-
9 parenthood feeling rule. We find a stable positive correlation of multiples and disgust across all
10 four periods and most publications (1987–1996: *NYT*, *WSJ*, *UT*, *NewsComb*, *MagsComb*; 1997–
11 2000: *WSJ*, *NewsComb*; 2001–2011: *NYT*, *UT*, *WSJ*; 2012–2017: *NYT*, *WSJ*, *UT*, *NewsComb*,
12 *MagsComb*) (see web appendices 4.1–4.4). This strong association is more consistent than other
13 negative emotions (1987–1996: *WSJ*, *NewsComb*, *MagsComb*), anxiety (1987–1996: *WSJ*,
14 *MagsComb*; 1997–2000: *UT*; 2012–2017: *WSJ*), and negative outcomes (1987–1996: *UT*,
15 *NewsComb*, *MagsComb*; 1997–2000: *WSJ*, *NewsComb*; 2001–2011: *NYT*, *UT*, *NewsComb*) and
16 positive emotions such as joy (1987–1996: *MagsComb*; 1997–2000: *MagsComb*).
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33 Reifying allows the long-standing technophobic feeling rule, which requires the
34 expression of negative emotions toward technologies, to dominate over the bio-parenthood
35 feeling rule, which requires the expression of positive emotions toward any means allowing for
36 biological births. The technophobic feeling rule and the associated emotion of disgust are
37 consistent with cultural-cognitive representations of technology as threatening and amoral
38 (Giesler 2012; Kozinets 2008) and of mad scientists and their monstrous creations (Dinello
39 2005), galvanized in Shelley's *Frankenstein* and reproduced in public discourse since the book's
40 publication in 1818. Such taken-for-granted associations make sense, given that, over time, news
41 media have tied the implantation of multiple embryos and the birth of multiple children to
42 several risks: Mothers of multiples are associated with pregnancy problems (e.g., preeclampsia),
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3 multiples have been linked to potential physical and developmental delays and effects due to
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multiples have been linked to potential physical and developmental delays and effects due to
underweight and prematurity, and the actions of prospective parents have been tied to potential
drains on society and government resources to support the financial and emotional needs of
babies who are called “monstrous creations.” For example, a 2009 *Newsweek* article states:

With the increase in fertility treatments, the U.S. birthrate of twins has more than doubled
in the past 30 years. Overlooked in the happy news, though, are the troubling surges in
neonatal deaths, developmental disabilities and other long-term problems.

In other words, the technophobic feeling rule that surrounds multiples conjures a familiar
cultural narrative of persistent mad creators (the assemblage of prospective parents, FT clinics,
and reckless doctors) and the monstrous but innocent creatures they create (the high number of
embryos used and high number of children born). This narrative, just like the scientist Victor
Frankenstein and his monster, goes against moral and biological norms and should be
condemned by the performance of negative emotions, in particular disgust.

Reifying hierarchies with dominant negative feeling rules is an important finding, given
that scholars have paid more attention to the reifying of hierarchies in which positive feeling
rules dominate, particularly as markets become legitimate. For example, we contrast our
emotions-driven legitimation perspective with that of Fischer et al. (2007) on consumers’ goal
striving in the IVF market, in which positive emotions trump negative emotions and experiences
associated with IVF. Applying our framework, we infer that IVF in Fischer et al. is legitimized
through reifying the bio-parenthood feeling rule hierarchy, which requires public displays of
delight involved in pregnancy and childbirth and of hope when pursuing parenthood.

Furthermore, as Fischer et al. (2007, 427) state, the bio-parenthood feeling rule in the
U.S. dictates “the set of cultural assumptions about why and how people should become

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3 parents.” Yet our findings around multiples suggest that other feeling rules, such as the
4
5 technophobic feeling rule, prescribe what type of biological parent one should *not* become. This
6
7 qualifies the dominance of the bio-parenthood feeling rule found in previous studies. That is,
8
9 reifying supports existing norms to pursue parenthood (normative legitimacy) but creates
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11 boundaries around them by invoking counternarratives that limit and ease the comprehension of
12
13 entities (cultural-cognitive legitimacy). As a result, reifying can both legitimize and delegitimize
14
15 FT. We show that the FT market comprises multiple technologies with different degrees of
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17 legitimation. For example, at the end of the third period (2001–2011), some technologies, such as
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19 IVF and artificial insemination, had become legitimate and mainstream paths to parenthood. By
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21 contrast, multiple-embryo IVF was becoming illegitimate, and cloning never acquired
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23 legitimacy. Our analysis is consistent with prior research that shows that a market can thrive
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25 even if some of its elements are delegitized (Giesler 2012).
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31 Reifying also creates an opposite effect to that found by Humphreys (2010b), in which
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33 negative emotions turn from hot to cold as the casino gambling market becomes legitimized. By
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35 contrast, we find that, from 1987 to 2017, the hot negative emotion of disgust remains
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37 consistently correlated with elements of the FT market, even as cold negative emotions such as
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39 anxiety increase within the market (see figure 2, panel c), as Humphreys predicted (anxiety: from
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41 0.29% in 1986–1997 to 0.38% of all words in 2012–2017; $t = -1.572, p > .05$). This qualifies the
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43 breadth and range of emotional transformation that can occur as markets become legitimate. This
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45 finding also suggests that markets can be legitimized despite the consistent presence of hot
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47 negative emotions. This is consistent with our previous observation that markets can have
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49 fragmented legitimation because they encompass different types of entities (e.g., technologies,
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51 consumers, markets categories) whose legitimacy does not always align uniformly.
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3 In summary, we find that news media reify emotions by revealing and reinforcing
4 dominant feeling rules associated with a market entity. In doing so, news media establish which
5 emotions are most relevant to assess the legitimacy of an entity. We also highlight how, through
6 reifying, a dominant feeling rule can support and/or undermine the legitimation of an entity.
7
8 Reifying makes emotional assessments of the entity more accessible and comprehensible to a
9 broader audience, thus directly shaping cultural-cognitive legitimacy. Reifying also supports or
10 undermines existing normative narratives, thus influencing normative legitimacy. For example,
11 news media reify the dominance of the technophobic feeling rule around multiple-embryo IVF,
12 leading to its persistent association with disgust and its progressive loss of legitimacy. By 2012,
13 multiple-embryo IVF had lost its legitimacy and now is rarely used except for the oldest, least-
14 responsive-to-treatment consumer segments (Society for Assisted Reproductive Technology
15 2020).

33 Transforming Emotions

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36 When transforming emotions, news media update the hierarchy of feeling rules
37 associated with a market entity, leading to increased acceptability. This is evidenced by a change
38 in the emotions associated with FT over time. A change in feeling rules results in a change in
39 institutional structures and existing understandings and meanings related to that entity. We find
40 two types of transforming: exception-triggered transforming and precarious transforming.
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45 *Exception-Triggered Transforming.* This type of transforming introduces a new feeling
46 rule to evaluate an entity's legitimacy, thereby altering an existing hierarchy of feeling rules, as a
47 new exceptional event occurs. Such events might include scandals, health crises, or political
48 changes. Exception-triggered transforming occurs in the dissemination of the story of Nadya
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3 Suleman, labeled “octomom” by news media after she became a single mother of 14 children and
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5 the second person in history to successfully deliver octuplets with the assistance of donated
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7 sperm and multiple-embryo IVF in January 2009:
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10 [S]he is the first to have emerged from childbirth ready for the world’s cameras with
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12 what looks ... like plastic surgery facial modifications, it would seem, designed to
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14 approximate the visage of that other notably avid producer and acquirer of children,
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16 Angelina Jolie.... Rumors flew that she had I.V.F. treatments in Mexico and then crawled
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18 across the border to give birth on American soil. Others said that the conception of the
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20 octuplets was nothing but a publicity stunt. As a recipient, between 2000 and 2008, of
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22 more than \$169,000 in disability payments, Suleman, who is now 34 and spent much of
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24 her adult life living with her parents, was cited as proof of everything that is wrong with
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26 American culture, single mothers, California and the welfare state. (*NYT* 2009)
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31 Exception-triggered transforming reveals a deviance feeling rule. Deviance is always
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33 constructed in opposition to conventional, expected behaviors (Goffman 1975)—here, the
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35 expectations of good and responsible biological parenthood. Deviant behaviors engender strong
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37 sanctions and rejection from mainstream society. They are associated with negative emotions,
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39 ranging from disapproval and coldness to disgust, fear, and anger (Goode 2017).
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42 The deviance feeling rule adds to the existing technophobic feeling rule to further
43
44 dominate and discourage the reliance on the bio-parenthood feeling rule. Consequently, in terms
45
46 of public opinion, the deviance feeling rule ignites a moral panic (McLuhan 1971), defined as the
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48 “intense, heightened sense of exaggerated concern about a threat or supposed threat posed by
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50 deviants or ‘folk devils,’ a category of people who, presumably, engage in evil practices and are
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52 responsible for menacing the physical safety or the culture or way of life of society or sectors of
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3 society” (Goode 2017, 1). Here, transforming highlights the intersectional nature of feeling rules.
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5 Suleman is judged in public opinion based on a deviance feeling rule, given her low
6
7 socioeconomic class, single-parent status and perception as a celebrity-wannabe. Her use of FT
8
9 ignites a moral panic expressed in a mix of indignation, fear, contempt, and disgust for her
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11 moral, economic, and biological transgressions that threaten social norms and taken-for-granted
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13 associations of a good person and a responsible parent.
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17 This instance of transforming threatens the legitimacy of an industry, given that societal
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19 transgressions are often accompanied by punishment (e.g., jail for those who break the law).
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21 Suleiman’s case created new negative discourses around consumers who aggressively seek
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23 children through FT, as she became the butt of late-night television jokes and grotesque images
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25 of excess in tabloids and mainstream news media (see figure 3). Punishment was also extended
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27 and/or threatened by regulatory bodies: her fertility doctor’s medical license was revoked by the
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29 State of California’s medical board for implanting her with 12 embryos—three times as many as
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31 the maximum recommended by the American Society for Reproductive Medicine—and
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33 legislators in Georgia, Missouri, and California considered issuing legal restrictions on the
34
35 number of implanted embryos. Regulatory intent was aimed at blocking future “she-devils” in
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37 society, as Georgia senator Hudgens states: “Nadya Suleman is going to cost the state of
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39 California millions of dollars over the years; the taxpayers are going to have to fund the 14
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41 children she has.... I don’t want that to happen in Georgia” (*WSJ* 2009).
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47 Exception-triggered transforming extends the prior views of emotions in the market by
48
49 providing a more dynamic view of collective experiences and displays of emotions. Gopaldas
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51 (2014), for example, proposes that certain market actors (villains) are blamed while others
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53 (victims) are shown compassion. With exception-triggered transforming, we show that these
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3 positions and the emotions with which they are associated are unstable. For example, through
4 neoliberal responsabilization (Giesler and Veresiu 2014), victims could turn into villains. That is,
5 after a triggering scandal, they can shift from being targets of concern to recipients of blame. We
6 show that this happens when transforming introduces a new feeling rule that destabilizes an
7 existing hierarchy of feeling rules. Applying our perspective to Toubiana and Zietsma's (2017)
8 study of the delegitimation of an NGO, we infer that this entity loses legitimacy from its lack of
9 emotional conformity with the caring feeling rule that is progressively introduced to the field.

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12 Furthermore, our example of exception-triggered transforming raised concerns about the
13 lack of regulation of the growing FT market, already tarnished with associations of other moral
14 and scientific transgressions, such as the selective reduction of embryos in utero, cloning, and the
15 use of stem cells. Indeed, a *UT* (2009) article highlighted John Robertson, a University of Texas
16 law professor, who issued a warning that octuplets "peeled back the [fertility] industry's claim
17 that everything is fine and dandy." In other words, this type of transforming acted as a regulatory
18 vector, undermining the legitimacy of the self-regulated FT market and leading to a consensus
19 across regulatory, scientific, and commercial actors to curb consumer demand and sciento-
20 commercial practice of multiple-embryo transfers during IVF (Jones and Allen 2010).

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23 In summary, the octomom scandal threatened the FT market legitimacy. The deviance
24 feeling rule encouraged condemning emotions and moral judgments that challenged the market
25 normative legitimacy and discredited multiple-embryo IVF, a commonly used and iconic FT at
26 the time. As a result, market actors engaged in institutional work by adopting policies that
27 strongly discouraged the use of multiple-embryo IVF. At the same time, these actors embraced
28 the more legitimate single-embryo IVF, stabilizing the legitimacy of the FT market by turning
29 this type of IVF into a taken-for-granted FT and the new symbol of the FT market in public
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3 opinion. These dynamics exemplify how polarizing affects the regulatory, normative, and
4 cultural-cognitive legitimacy of several interconnected technologies. While the octomom scandal
5 was a delegitimizing instance, counterintuitively, exception-triggered transforming also
6 reinforced the normative legitimacy of other FT users, such as those pursuing single-embryo
7 IVF, who became nondeviant or less extreme in their quest for biological parenthood.
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22 *Precarious Transforming.* This type of transforming updates a hierarchy of feeling rules,
23 but the updated institutional structures remain precarious and subject to controversies. Precarious
24 transforming is observed in the evolution of the lesbian, gay, bisexual, transgender, queer
25 (LGBTQ+) consumer segment across the entire span of our data set. In the octomom case, the
26 deviance feeling rule became more salient in the evaluation of the multiples consumer segment
27 decades after FT became available for its use. By contrast, the deviance feeling rule was the
28 primary lens through which society evaluated the legitimacy of FT by the LGBTQ+ segment,
29 weakening the bio-parenthood feeling rule while supporting the technophobic feeling rule. The
30 following quote describes the public moral argument raised by opponents of LGBTQ+ and the
31 quest for recognition and legal rights in the early years of the FT market:
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44 No numbers are available, but the potential pool is high among four million gays and
45 lesbians with children. While some experts and religious leaders are dismayed by the
46 practice, many communities have reacted with quiet support. But that hasn't stopped
47 some from out-spoken opposition. "It's parental malpractice," says Robert Knight of the
48 conservative Family Research Council. "This is an attempt to hijack the moral capital of
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3 the mom-and-dad family. Children need moms and dads. They don't need two moms or
4 two dads".... The reasons for becoming a legal co-parent "become clear when you look
5 at everyday life," says Greg King of the Human Rights Campaign Fund. "This is an issue
6 that affects everything from inheritance and medical benefits to things like who can sign
7 a child's report card or take them to the hospital if they break their arm during a Little
8 League game." Another reason co-parent adoptions are increasing is that gay and lesbian
9 parents have grown more visible. In the past, many hid their homosexuality, says Tim
10 Fisher of Montclair, N.J. (*UT* 1993)

11
12 This excerpt shows the rising social visibility of LGBTQ+ parents in families at a time when
13 homosexuality was considered dangerous and associated with HIV and immoral behavior, which
14 threatened the safety and way of life of U.S. society (Goode 2017). It is not surprising, then, that
15 negative emotions were directed to these individuals, the FT they used (e.g., artificial
16 insemination, surrogacy, sperm donation, IVF), and their offspring and that these emotions
17 coexisted with discourses about legal, social, and moral issues. This is evidenced in web
18 appendix 4.1 in 1987–1996, when LGBTQ+ was correlated with fear (*NYT*, *NewsComb*),
19 controversy (*MagsComb*), and legal (*MagsComb*) discourses. It was also negatively correlated
20 with bravery (*NYT*) and negative emotions (*NYT*). It was both negatively and positively
21 correlated with celebratory emotions (*NewsComb* and *MagsComb*, respectively). At the level of
22 legitimacy pillars, LGBTQ+ was positively correlated with regulation (*MagsComb*) and social
23 (*NYT*, *UT*). Collectively, these data suggest that there were more negative emotional associations
24 in news media during this period. The strong presence of fear captures the experiences of
25 LGBTQ+ families with a "crazy quilt of rights being given and taken away," as stated by a
26 lesbian mother in *UT* (1993), to assert their parenting in judiciary contexts that used heterosexual

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3 unions as the moral standard for what parents and parenthood looked like.

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5 In the next period, 1997–2000 (see web appendix 4.2), transforming slowly begins to put
6 the wheels of the deviance feeling rule in reverse, as news media increasingly emphasize the
7 more positive bio-parenthood feeling rule, in particular, the discourse that LGBTQ+ families are
8 raising well-adjusted children. Indeed, in this period, there is increased coverage by news media
9 of scientific reports countering the myth that LGBTQ+ families may turn children into
10 “deviants.” Coverage like this, along with some legal gains, is seen in the positive correlation of
11 LGBTQ+ with joy (*NewsComb*, *MagsComb*) and bravery (*MagsComb*), along with hate
12 (*MagsComb*). Hate in this period is also associated with the good job LGBTQ+ families appear
13 to be doing to protect their growing children from discrimination, stigmatization, and bullying in
14 schools and other social spaces. These stories capture changing normative and taken-for-granted
15 legitimacy, but LGBTQ+ is still “open to criticism.” These stories invite readers to learn about
16 LGBTQ+ families’ struggles, hopes, and fears and emphasize the precarious standing of this
17 consumer segment in the FT market and U.S. society in general.
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35 Lesbians who become parents through artificial insemination are raising emotionally
36 healthy and well-adjusted children, according to three new studies.... Most of the
37 children in the lesbian families were conceived at fertility clinics. Some of the children of
38 heterosexual parents were also conceived at fertility clinics, but the studies compared
39 these groups with children born from natural conception. Though the studies found no
40 differences between the groups,... “the existing body of research is relatively sparse and
41 open to criticism.” (*UT* 1997)
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51 In the last two periods, 2001–2011 and 2012–2017 (see web appendices 4.3 and 4.4),
52 precarious transforming becomes more evident in the broader and significant changes to
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3 regulatory, normative, and cultural-cognitive institutional structures for LGBTQ+ consumers.
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5 We find statistically significant changes in the percentage of words associated with LGBTQ+
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7 from 1987–1996 to 2012–2017 ($t = -2.13, p < .05$) and from 1997–2000 to 2012–2017 ($t = -$
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9 $2.07, p < .05$). For example, LGBTQ+ consumers gain more normative and cultural-cognitive
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11 legitimacy as the bio-parenthood feeling rule dominates in news media. This is evident in the
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13 abundance of feel-good stories about children of LGBTQ+ parents seeking, meeting, and
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15 establishing relationships with their sperm donor fathers and in increasing reports of surrogacy
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17 use by famous gay men (e.g., Elton John, Ricky Martin). In 2001–2011, this results in a
18
19 significant, positive correlation between LGBTQ+ and joy (*WSJ*), pride (*UT, NewsComb*), and
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21 social (*WSJ, UT, NewsComb*) and a significant, negative correlation with negative emotion (*UT,*
22
23 *NewsComb*). Paradoxically, LGBTQ+ families are also significantly correlated in 2001–2011
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25 with divorce and custody (*UT, NewsComb*) and legal (*UT, NewsComb*) discourses and in 2012–
26
27 2017 with divorce and custody (*MagsComb*) and legal (*UT, NewsComb*) discourses. This shows
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29 that LGBTQ+ consumers are subject to changes in family status and composition just like any
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31 other family, while signaling a resurgence of the deviance feeling rule that surrounds them. The
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33 coverage of transgender parents also increases from 0% in 2001–2011 to 0.01% in 2012–2017 (t
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35 $= -.204, p < .01$).

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42 The last period, 2012–2017, brings significant regulatory legitimacy gains to FT use by
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44 LGBTQ+ consumers. Yet this legitimacy remains contested and fragile, emphasizing the
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46 precarity of transforming. For example, in 2015, the legalization of LGBTQ+ marriage in the
47
48 U.S. set a major precedent for the social acceptance of LGBTQ+ FT consumers. Yet news media
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50 also show how LGTBQ+ families struggle in states with strong antigay marriage sentiments.
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54 Consequently, LGBTQ+ has a significant, positive correlation not only with controversy (*NYT,*
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3 *UT, NewsComb*) and regulation (*NewsComb*) but also with bravery (*UT, NewsComb*),
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gratefulness (*NYT, NewsComb*), and pride (*UT, NewsComb*).

Importantly, precarious transforming highlights the interrelationship of transforming with reifying and polarizing. For example, news media reveal and reinforce the deviance and biological feeling rules at different periods. News media also show that regulatory events, such as the legal sanctioning of LGBTQ+ marriage, divide a nation along moral batteries, with the anti-LGBTQ+ marriage camp remaining active and threatening to the legitimacy of FT for LGBTQ+ consumers and their families. Unlike exception-triggered transforming, this interrelationship between emotions-driven mechanisms is more complex. Indeed, the LGBTQ+ segment has a more extensive breadth of entities toward which feeling rules and their associated emotions are oriented. For example, in the LGBTQ+ segment, news media have reported stories related to individuals and couples who are lesbian, gay, or transgender and their different roles as, for example, biological parent versus adoptive parent earlier and as coparents later. Different technologies are also associated with different types of LGBTQ+ consumers (e.g., artificial insemination, sperm or egg donation, IVF). However, similar to exception-triggered transforming, regulatory events can play a central and ongoing role even as a market matures, providing more evidence of an opposite effect to that found by Humphreys (2010b) and Scott (1995). This is certainly the case at the overall market level, at which similar temporal aspects and breadth of entities are associated with several FT, including IVF, stem cells, and PGD, affecting the association of particular feeling rules and emotions in nonlinear, nonfinite legitimation. Last, precarious transforming highlights the range of emotions (positive and negative, hot and cold) that can be directed to different entities across different points in time. This includes the dominance of certain types of emotions, their coexistence and

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3 interrelationships, and the differences in the contexts in which they arise.

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5 In summary, news media transform emotions by updating the feeling rules associated
6 with a market entity. Exception-triggered transforming shows that exceptional events can foster
7 the introduction of a new feeling rule, such as the deviance rule after the octomom scandal,
8 which can destabilize legitimacy pillars. In this example, the normative and cultural-cognitive
9 legitimacy pillars changed, which resulted in a profound transformation of the market (i.e., the
10 delegitimation of the central technology multiple-embryo IVF and reconfiguration of the market
11 around single-embryo IVF). Precarious transforming stresses that transforming may not be
12 definitive and can be susceptible to continuing contestation. We also show that transforming can
13 legitimize market entities both directly (e.g., FT use by LGBTQ+) and indirectly (e.g., single-
14 embryo IVF vs. multiple-embryo IVF). Finally, we show the fragility of transforming, as our
15 longitudinal data set allows us to analyze the impact of various trigger events.
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33 **DISCUSSION**

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35 The legitimation of market entities is a crucial consumer research concern (Dolbec and
36 Fischer 2015; Humphreys 2010b; Scaraboto and Fischer 2013). We expand current literature by
37 providing a new understanding of emotions-driven legitimation. We define emotions as cultural
38 products that are aligned with norms and expectations originating in social settings (Hochschild
39 1983; Wahl-Jorgensen 2019). Doing so helps us move beyond the analysis of legitimation as a
40 cognitive and rational process by emphasizing the centrality of emotions as a structuring force
41 within their sociocultural contexts. Accounting for emotions gives a more complete picture of
42 how market legitimation takes place and answers calls for empirical research on the role of
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emotions in legitimation (Friedland 2018; Valor et al. 2020).

We demonstrate social emotions-driven legitimation by delineating three mechanisms (polarizing, reifying, and transforming) that are (1) underscored by feeling rules, (2) affected by trigger events in the broader environment that surrounds a market (e.g., product and technological innovations, historical and sociocultural developments), and (3) connected with legitimacy pillars (see figure 4). By conceptualizing this process, we show that legitimation takes place through the emergence, maintenance, and change of hierarchies of feeling rules and their associated emotions throughout the legitimation process. We also show that emotions-driven market legitimation is dynamic and changes across time and space.

Social Emotions-Driven Legitimation

Linking Feeling Rules to Legitimation. We extend the literature on market legitimation by showing that feeling rules dictate what emotions can be associated with market entities, associations that can lead to the support or erosion of legitimacy judgments around these entities. Social emotions-driven mechanisms are fundamental to legitimation, as they explain how emotions are deeply linked to existing rules, norms, and taken-for-granted associations. We build on the research that positions emotions or affect as outcomes of legitimation or in direct opposition to cognitive processes or rules (Gopaldas 2014; Humphreys 2010a; Toubiana and Zietsma 2017). The link between feeling rules and legitimation has two theoretical implications.

First, social emotions-driven mechanisms capture the crucial role of hierarchies among feeling rules. This implies that it is not just the presence of emotions in the market but also the dominance (or attempted dominance) of certain emotions, including the way they are expressed

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3 in news media and political spheres (Wahl-Jorgensen 2019), that shape legitimacy judgments
4 about an entity. For example, we find both instances in which a hierarchy is consistently reified
5 and maintained and transforming instances in which a new hierarchy is established. Even in
6 cases of equal power among feeling rules, the temporary counterposing of these rules can
7 energize actors to act to ensure their own feeling rules prevail. In other words, the creation of
8 two emotional extremes drives actors to impose a hierarchy. Our study supports calls to move
9 beyond the dichotomy between reason and emotion, which too often constrains research
10 (Friedland 2018), by showing that legitimation is not a result of the dominance of reason over
11 emotion, or vice versa (Toubiana and Zietsma 2017), but of hierarchies within emotional forces.
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24 Second, our study introduces variability across feeling rules, emotions, and legitimation
25 within a market and emphasizes the need to study legitimation at multiple levels. This view
26 allows for more heterogeneity of emotional expressions and evidences how multiple and
27 overlapping legitimation processes take place in parallel in a market. In doing so, it complements
28 perspectives in which only a single emotion is directed to an entity (e.g., fear, love) or a specific
29 type of emotion is present (e.g., positive or negative, hot or cold) (Gopaldas 2014; Grodal and
30 Granqvist 2014; Humphreys 2010b). Our study also shows that a market consists of a variety of
31 entities, including consumer segments, practices, and products, each of which may be associated
32 with different feeling rules that dictate specific emotions toward those entities. Thus, legitimacy
33 judgments about some of these entities can affect the overall market legitimation positively
34 and/or negatively. This can also occur in other industries, such as the gambling market, in which
35 the introduction and expansion of gambling practices (e.g., gaming machines) have threatened
36 the overall legitimacy of gambling in some locales (Banks 2017). Furthermore, the presence of
37 social emotions-driven mechanisms for multiple entities in a market implies that feeling rules
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3 both reflect and (re)shape distinct regulatory, normative, and cultural-cognitive structures. For
4 example, we demonstrate that different feeling rules stimulate different types of emotions (i.e.,
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6 disgust, anxiety, love) that are associated with different regulatory rules of supra organizations
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8 (e.g., executive, congressional, legal), societal norms (e.g., moral, biological), and taken-for-
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10 granted associations (e.g., science as evil, single mothers as deviants). In summary, we suggest
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12 that the establishment or maintenance of feeling rules can introduce variabilities across
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14 legitimacy pillars and legitimation outcomes. A hierarchy in feeling rules, then, explains why
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16 some emotions prevail over others in the market.
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24 [Insert figure 4 about here]

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28 *Dynamic Legitimation Pillars across Space and Time.* We contribute to the
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30 understanding of market legitimation as dynamic by showing that crucial macro- and industry-
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32 level triggers can destabilize legitimation and introduce new hierarchies of feeling rules, which
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34 can result in changes in regulatory, normative, and cultural-cognitive structures across space
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36 (i.e., different entities) and time (i.e., short- and long-term). Our study follows recent work in
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38 organizational literature that paints legitimation as dynamic (Deephouse et al. 2017). In doing so,
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40 it complements consumer research by evidencing specific dynamics of legitimation and
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42 legitimacy pillars. This provides an alternative to the more linear processual perspective, from
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44 illegitimacy to legitimacy, which is often driven by cognitive and strategic actions (Dolbec and
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46 Fischer 2015; Humphreys 2010b). We evidence that trigger events such as technological and
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48 historical innovation can influence feeling rules associated with market entities through three
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50 different mechanisms. Trigger events can encourage polarizing, which involves two feeling rules
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3 acting as moral batteries with two strong emotional extremes and energizing actors to ensure
4 their extreme prevails. Thus, trigger events can be productive and create a cascade of events,
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6 such as new innovations or new moral panics. Trigger events can also influence reifying, which
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8 reveals and reinforces dominant feeling rules and determines which emotions are most relevant
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10 to assess the legitimacy of an entity in that new environment. Finally, trigger events can
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12 influence transforming, which updates the feeling rules associated with an entity. In other words,
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14 depending on their breadth and depth, trigger events can make feeling rule mechanisms more
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16 complex and interconnected. Consequently, the legitimacy pillars and the process of legitimation
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18 itself can be more difficult to manage or predict across multiple entities and over time.
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24 Furthermore, these insights contrast with the processual stability of legitimation as
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26 markets mature, in particular around regulatory legitimacy (Humphreys 2010b; Scott 1995). Our
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28 findings qualify this perspective by evidencing that trigger events and feeling rule mechanisms
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30 can make regulatory legitimacy structures highly active, such as in instances of polarizing or
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32 transforming, by affecting norms and taken-for-granted associations. The extent of legitimacy
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34 instability can depend on the type of trigger events, the entity such events apply to, and the
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36 feeling rules associated with the entity. As we show with exception-driven transforming, a single
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38 entity in the media spotlight can foster profound and long-lasting regulatory changes around
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40 practices and technology acceptance. In precarious transforming, a series of cumulative events
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42 can affect an entire consumer segment in a profound but precarious way. Thus, emotions-driven
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44 legitimation can be fluid and nonfinite. This has implications for other industries, both
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46 controversial and not. For example, trigger events such as product scandals occur in most
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48 industries and can affect the feeling rules and legitimacy structures associated with market
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50 entities. For example, Elizabeth Holmes became a villain after it was revealed that her firm
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3 Theranos did not really have its promised blood test and instead was endangering consumer
4 health (Solon 2018). Our findings, then, qualify the notion that legitimation only deals with
5 unchallenged societal rules, norms, values, and meaning systems (Deephouse et al. 2017).
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10 Beyond FT, we observe some parallels in other markets in which innovation cycles
11 trigger recurrent controversies and renewed legitimation efforts. For example, news media
12 coverage of self-driving cars polarizes public opinion along moral batteries and reifies the
13 technophobic feeling rule. Our findings offer a new view on brand-centric processes of market
14 change associated with controversies around innovation cycles (Giesler 2012). Exploring how
15 these market-level processes destabilize (or not) brand images could shed more light on how
16 brands manage doppelgänger brand images that emerge with new innovations.
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28 Avenues for Future Research

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32 This study suggests new avenues for research on market legitimation and emotions. First,
33 the intersection between market-level feeling rules and consumers' emotional experiences needs
34 more study. Hochschild (1983) suggests that consumers struggle to internalize and comply with
35 the feeling rules pushed by the market. They become conscious of feeling rules only when they
36 interrogate their own emotional experience or when it is challenged by others. Consumers are
37 thus likely to depart from market-produced emotional scripts at times. Future research could
38 theorize the dialogical divergence between consumers and the media and complement prior
39 studies on consumers' institutional work (Dolbec and Fischer 2015) by highlighting the
40 emotional work at play. Research could also explore how marketers navigate these dynamics.
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53 Second, future research could examine the intersectional nature of feeling rules. Feeling
54 rules are differentially distributed by structural characteristics (Illouz et al. 2014). Thus,
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3 focusing, for example, on the interrelated nature of issues regarding gender, race, and social class
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5 could be useful to assess the relationship among sociodemographic characteristics, societal
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7 inequalities, and emotional institutional work.
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10 Finally, our study is set in the U.S., where emotions are expected to be publicly and
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12 emphatically expressed (Lupton 1998). Because “[e]motions are the dimension of culture which
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14 represents most clearly the cultural specific model of selfhood and sociability, ethics and morals”
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16 (Illouz et al. 2014, 229), future research could examine other contexts (e.g., countries,
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18 consumption experiences, servicescapes) where public emotion display is normatively
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20 constrained and explore whether emotions similarly affect legitimation.
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DATA COLLECTION INFORMATION

The data were collected by all three authors using ABI/ProQuest, Lexis Nexis, and Master File Premier/ProQuest for the media data and direct online search for the blogs and fertility clinic material between January 2017 and April 2019. The data were analyzed by all three authors using LIWC, NVivo, and KHCoder. The data are currently stored in a project directory on the Open Science Framework.

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APPENDIX A. A COMPARISON OF INDIVIDUAL AND SOCIAL EMOTIONS

	Individual Emotions	Social Emotions
Definition of emotions	Affective action-oriented tendencies experienced by individuals in response to a stimulus and expressed through bodily responses	Cultural products that are aligned with norms and expectations originated in social settings
Who	Individuals	Collectives/groups
Nature of emotions	May be universal or depend on the culture of the individual	Always socioculturally and historically dependent
Emerge from	Depending on the perspective: emotions are associated with patterns of bodily responses, appraisal, or cultural norms	Emotions are associated with systems of culturally specific rules
Key perspectives (exemplar authors)	<ul style="list-style-type: none"> ● Evolutionary approaches: focus on emotions as an individual's adaptive responses (e.g., James 1984) ● Cognitive approaches: focus on the factors (e.g., an individual's history or personality) that shape emotional appraisal (e.g., Arnold 1960) ● Sociological approaches: focus on how individuals' experience and expression of emotions are constrained by cultural norms (e.g., Heise 1979) 	<ul style="list-style-type: none"> ● Normative approaches: focus on the interaction between structural emotional norms and their experience and expression (e.g., Hochschild 1983) ● Performative approaches: focus on emotions as produced by symbolic public action (e.g., Reddy 1997) ● Ritual approaches: focus on emotions as produced within public and collective occurrence (e.g., Collins 2004)
Examples in consumer research	Goldberg and Gorn 1987; Pham 1998	Gopaldas 2014; Higgins and Hamilton 2018

Note.—Each key perspective on emotions has its own definition of emotions and assumptions about the nature of emotions and how to study them. This table represents a consolidated view of the extensive literature on emotions to facilitate the comparison of individual and social emotions (Turner 2014).

APPENDIX B. DIFFERENTIATING EMOTION-RELATED CONCEPTS

Emotion-Related Concept	Definition
(Individual) Affect	Refers broadly to the experience of feeling or emotion (Bagozzi, Gopinath, and Nyer 1999).
(Individual) Emotion	Intense, short-lived affective reaction related to a particular stimulus. Emotions are linked to actions (Bagozzi et al. 1999).
(Individual) Feeling	Affect mediated by cognitive processes that arises after emotions (Shiv and Fedorikhin 1999).
(Individual) Mood	Diffuse and lasting affective state (Bagozzi et al. 1999).
Social emotion	Emotions as cultural products that are aligned with norms and expectations originating in social settings (Hochschild 1983; Scheff 1994); also called collective emotions.
Group emotion	Emotions that are simultaneously experienced by a group and directed to entities that are not group members (Goodwin, Jasper, and Polletta 2000).
Marketplace sentiment	Lasting and active collective emotional dispositions directed to a market entity (e.g., product, brand) (Gopaldas 2014).

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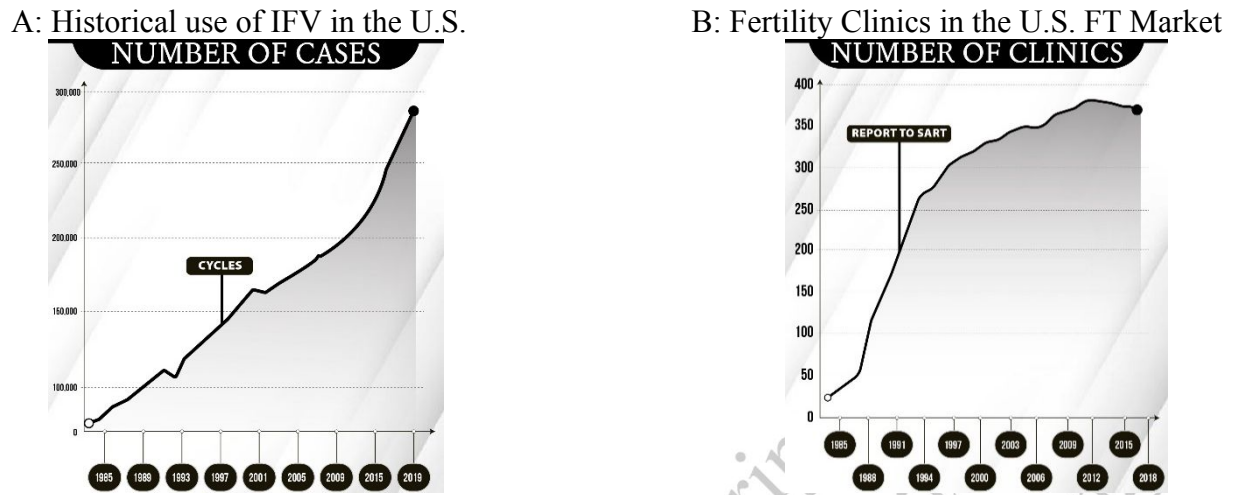
TABLE 1. DESCRIPTION OF DATA SET

Description	Purpose
<p>Media Material – Newspapers 2,349 articles; 3,096 single-spaced pages; word count: 2,042,967. <i>NYT</i> [1987–2017] (source: Lexis Nexis); <i>The WSJ</i> [1987–2017] (source: ABI/ProQuest); <i>UT</i> [1987–2017] (source: Lexis Nexis).</p>	<p>To examine how emotions structure legitimation over time and how this process is shaped and reflected in the media</p>
<p>Media Material – Magazines 739 articles; 940 single-spaced pages; word count: 629,011. <i>Cosmopolitan</i> [1990–2017]; <i>Redbook</i> [1989–2017]; <i>Good Housekeeping</i> [1992–2017]; <i>Scientific American</i> [1994–2017]; <i>New Scientist</i> [1990–2017]; <i>Science News</i> [1987–2017]; <i>Newsweek</i> [1987–2017]; <i>People</i> [1994–2017]; <i>Time Magazine</i> [1987–2017] (source: Master File Premier/ProQuest).</p>	
<p>Background Material – Consumer Blogs 9 blogs with data from 2007 to 2018. Shortest blogs include posts from [2007–2009]; longest blogs include posts from [2012–2018]. 822 double-spaced pages.</p>	<p>For triangulation and a deeper understanding of the feeling rules and their emotional management by consumers in the FT market</p>
<p>Background Material – Fertility Clinics 416 documents. Ads, brochures, websites, newsletters, and social media posts from highly rated clinics (e.g., Reproductive Associates of Delaware, New Hope Fertility Center, Baystate Reproductive Medicine, Advanced Reproductive Medicine & Gynecology of Hawaii, HRC Fertility).</p>	<p>For triangulation and to provide further information on the institutional environment, the timeline of innovations, and the sociocultural context</p>
<p>Background Material – Health Organizations 74 documents. Websites, brochures, and reports from vocal and influential organizations (e.g., Personhood, American Society for Reproductive Medicine, Resolve: The National Infertility Association, SART).</p>	

TABLE 2. NUMBER OF ARTICLES PER PUBLICATION PER PERIOD

Newspaper Articles	1987–1996	1997–2000	2001–2011	2012–2017	Total
<i>NYT</i>	350	163	513	366	1392
<i>UT</i>	230	66	204	41	541
<i>WSJ</i>	81	44	189	102	416
Total	661	273	906	509	2349
Magazine Articles	1987–1996	1997–2000	2001–2011	2012–2017	Total
<i>Good Housekeeping</i>	3	5	12	3	23
<i>Redbook</i>	12	10	21	7	50
<i>Cosmopolitan</i>	2	5	7	6	20
<i>People</i>	2	3	50	7	62
<i>Newsweek</i>	32	23	60	4	119
<i>Time</i>	20	8	22	88	138
<i>Scientific American</i>	2	5	26	8	41
<i>New Scientist</i>	28	24	129	47	228
<i>Science News</i>	27	7	13	11	58
Total	128	90	340	181	739

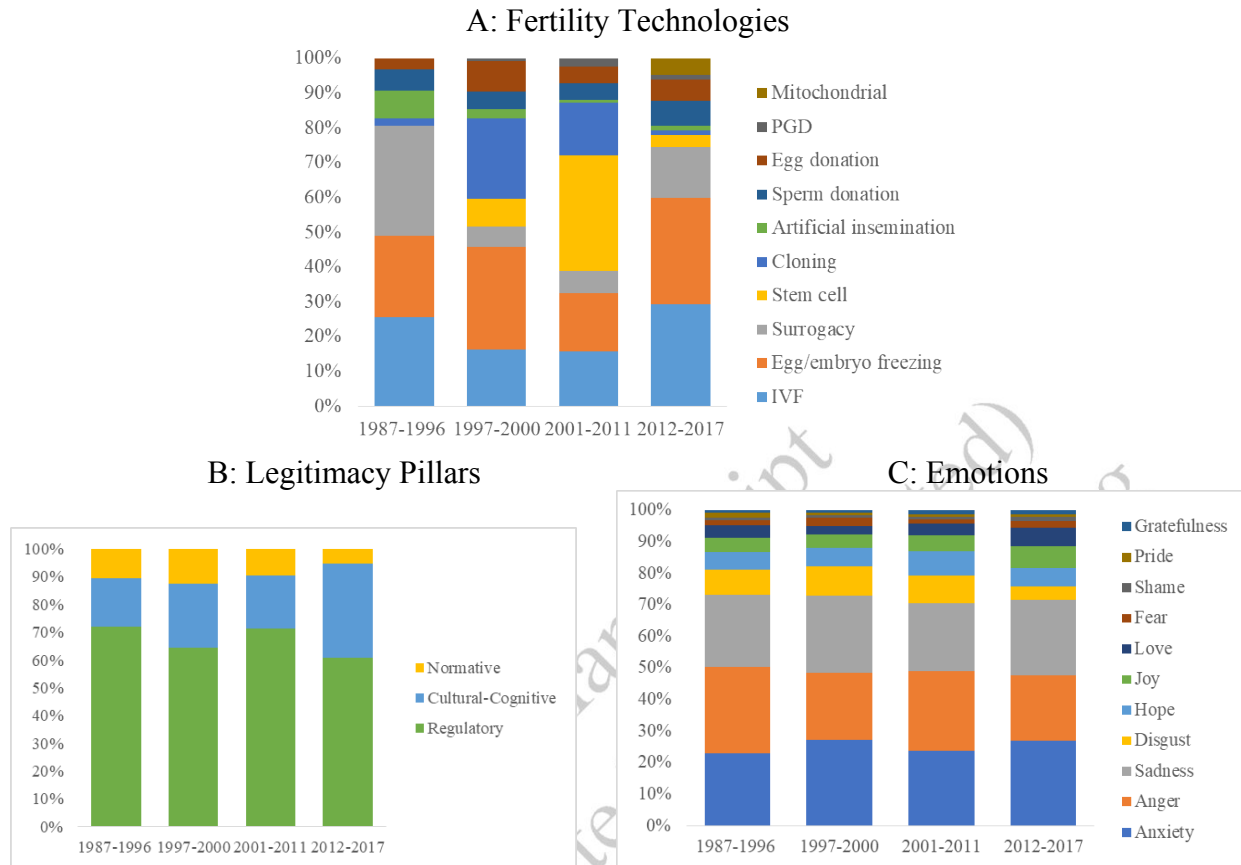
FIGURE 1. EVOLUTION OF THE U.S. FT MARKET



Source: Society for Assisted Reproductive Technology (2020)

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FIGURE 2. SHARE OF VOICE OF KEY CONSTRUCTS PER PERIOD



Downloaded from https://academic.oup.com/jcr/advance-article/doi/10.1093/jcr/ucab043/6347586 by City, University of London, laetitia.mimoun.2@city.ac.uk on 16 August 2021

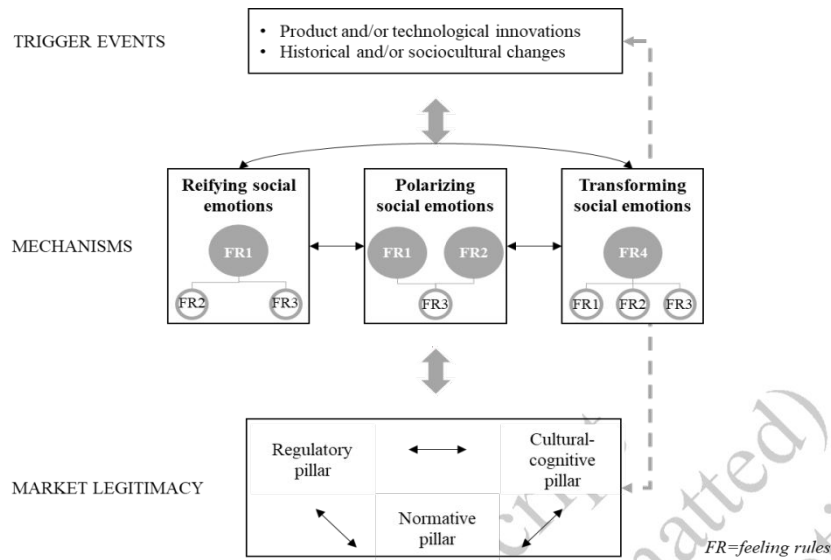
FIGURE 3. PARODIC REPRESENTATION OF NADYA SULEMAN



Creative Commons “Kinetic Sculpture 09” by mcnallyterrence

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FIGURE 4. SOCIAL EMOTIONS-DRIVEN LEGITIMATION



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HEADINGS LIST**1) THEORETICAL FRAMEWORK**

- 2) Market Legitimation
- 2) An Emotional Turn for Market Legitimation Studies
- 2) Linking Emotions and Pillars at the Market Level

1) THE FERTILITY TECHNOLOGY MARKET

- 2) Appropriateness of the Context
- 2) A Brief Historical Summary of the FT Market

1) METHOD

- 2) Data Collection
- 2) Data Analysis

1) SOCIAL EMOTIONS-DRIVEN LEGITIMATION MECHANISM

- 2) Polarizing Emotions
- 3) *Creating Emotional Extremes*
- 3) *Energizing Action*
- 2) Reifying Emotions
- 2) Transforming Emotions
- 3) *Exception-Triggered Transforming*
- 3) *Precarious Transforming*

1) DISCUSSION

- 2) Social Emotions-Driven Legitimation
- 3) *Linking Feeling Rules to Legitimation*
- 3) *Dynamic Legitimation Pillars across Space and Time*
- 2) Avenues for Future Research

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