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The Cute-Feminine Stereotype:

A Social Role Theory Explanation of Sex Differences in Cute Consumption

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Abstract

Cuteness is a popular aesthetic in product design, yet there is a lack of understanding of *who* is most likely to engage in cute consumption and, more importantly, *why*. In this dissertation, I consider the role of sex and gender identity in cute consumption, proposing a strong mental association between the constructs of *cuteness*, defined as the attributes of infants that elicit an adaptive, caregiving response in observers, and of *femininity*, defined as the traits, attitudes and behaviors ascribed to women. This association may be labelled the *cute-feminine stereotype*. I argue a salient association between cuteness and femininity exists due to the presence of multiple prominent perceptual (caregiving, warm) and visual (round shape, light colors) attributes that are strongly associated with both constructs. Based on social role theory, I propose that, as a result of this association, individuals of different sexes and gender identities – and, thus, relationships with the construct of femininity – will respond in distinct ways to cute offerings.

Across four sets of studies and two individual studies (final N = 6,827), I investigate the cute-feminine stereotype and its impact on consumer behavior. I first identify individuals that are more likely to express positive attitudes toward cuteness: in line with a social role account of preferences for cuteness, on average, women (vs. men), individuals high (vs. low) in self-reported femininity, and those low (vs. high) in self-reported masculinity, express more positive attitudes toward cuteness.

In line with the existence of a cute-feminine stereotype, both female and male participants exhibit a stronger implicit association between the concept of cuteness and that of female (vs. male). Similarly, both females and males applied the cute-feminine stereotype when predicting how consumers would evaluate real cute products, estimating greater liking and buying intentions for female (vs. male) consumers.

In order to understand the social context in which cuteness is consumed, I then test how cute consumption impacts one's *perceived gender identity* (how feminine/masculine *others* think you are), finding female consumers are perceived as more feminine and less masculine when they consume high (vs. low) cute products. Lastly, I highlight one maintenance mechanism of the cute-feminine stereotype: socialization, via the choice of toys for girls vs. boys.

Together, these studies identify important consequences of the cute-feminine stereotype for consumer attitudes and behaviors. In doing so, this work contributes to the field of consumer behavior, sex and gender identity, and product aesthetics by providing a new lens with which to understand the antecedents and consequences of cute consumption: that of gender identity, with particular consideration given to the complex social experience of this evolving construct.

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Dedicated to my family (Mom, Dad, and Ali).

I hope I made you proud.

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INTRODUCTION

Consumers desire to purchase products that reflect their numerous valued identities. As a result, many unique product aesthetics arose to meet this need: cool products (Warren and Campbell 2014), sexy products (Durante, Griskevicius, Hill, Perilloux, and Li 2011), beautiful products (Homburg, Schwemmle, and Keuhnl 2015), and cute products (Nenkov and Scott 2014), to name a few. Gender identity, defined as the perceived self-relevance of attributes typically associated with females (termed *femininity)* or with males (termed *masculinity*), is one such identity and is of particular significance today (Meier-Pesti and Penz 2008; Wood and Eagly 2015). In the present work, I explore the mental connection consumers have between gender identity and the cute aesthetic, particular in the case of cute products.

Cute consumption, defined as perceptions, attitudes, and behaviors toward cute stimuli, is relatively new to the marketing literature (see Table 1) and thus requires a detailed introduction, especially since none of the extant studies examines sex or gender identity. There has been a recent proliferation of marketing elements (e.g., products, advertisements, logos) that feature design elements inspired by the anatomy of the human infant, such as disproportionately large eyes, a large head, and a rounded body. These traits are captured in a variety of marketing offerings: from (increasingly) bug-eyed stuffed animals crowding airport giftshops, to the beloved lead characters of children's movies and television programs (e.g., Elsa, Anna, Olaf of Disney's *Frozen*), and even to Japanese mascots representing entire cities *(see* Chiitan).

These design elements together might be labelled in terms of *cuteness*, defined as certain features of infants that prompt an adaptive response in the beholder, such as the desire to approach and care for the infant (Lorenz 1943). Past psychological research has

demonstrated the unique impact of cute elements on perception, emotion, behavior. Cuter infants elicit more favorable attitudes and friendly intentions from observers than less cute infants, perhaps best characterized by the chorus of "Aww" elicited by a particularly cute subject (Alley 1981; Glocker et al. 2009b; Hildebrandt 1983; Hildebrandt and Fitzgerald 1979; Lehmann 2013; Buckley 2016).

Table 1. Summary of selected extant research on cuteness in consumer behavior.

Authors (Year)	*Type of cuteness*	*Consequence of cute stimuli*	*Predictors of preferences for cute*	*Process (moderators / mediators)*
Miesler, Leder, and Hermann (2011)	Kinderschema	Increased smiling	-	-
Nenkov and Scott (2014)	Whimsical	Increased intentions to indulge	-	-
Scott and Nenkov (2016)	Whimsical	Increased intentions to indulge		Reminders of responsibilities
Schnurr (2019)	Whimsical	Increased preference for "vice" over "virtue" products	-	Perceptions of tastiness and healthiness
Wang, Mukhopadhyay, and Patrick (2017)	Kinderschema	Increased prosocial behavior	-	Behavioral Approach System, Feelings of tenderness

Accordingly, marketers have applied this insight to the field of product design to use cute product features as a means of eliciting positive attitudes and increasing purchase intentions for their products. Hello Kitty is a global brand, that in 2016, accrued $4 billion in licensed product sales for Sanrio, a Japanese company known for its pioneering use of cuteness in product design (Marcus 2002; Woodgate 2017). However, it remains to be seen whether cute offerings resonate more with certain types of consumers over others, and if this relates to how consumers *of* cuteness are perceived by others. In the present research, I consider the role of sex and gender identity to better understand who is most likely to engage in cute consumption and why. This work is part of my larger body of research on clarifying

the construct of cuteness to understand the antecedents and consequences of cute consumption.

Researchers have argued that gender is "the basis of the fundamental lens through which one sees the social world" (Martin and Slepian 2021, pg. 1143), highlighting the primacy in social perception of the two dimensions of gender identity, femininity and masculinity. The recent controversy surrounding "bathroom bills" (e.g., Public Facilities Privacy and Security Act, H.B. 2, S.L. 2016-3, NC 2016) reflect deep divisions in American society on what gender even *means* in the twenty-first century: as parts of society advocate a non-binary concept of gender that incorporates an individual's gender identity, they face intense opposition from others who prefer gender is equated to a binary interpretation of biological sex (female vs. male). As gender becomes increasingly debated, understanding gender identity and how it impacts attitudes, choices, and behaviors has never been more important (Coleman, Fischer and Zayer 2021).

Recent work has demonstrated that consideration of consumers' gender identity can be used to better understand why particular people gravitate toward particular products. Spiellman, Dobscha, and Lowrey (2021) found that men devalue products that are paired with female (vs. male) names, which the authors argue occurs due to men's desire to maintain their masculine identity by avoiding anything associated with femininity. Similarly, Brough et al. (2016) showed that men (vs. women) consume less environmentally-friendly ("green") products because green products are perceived as more feminine than environmentally-unfriendly products. Both sets of authors' explanations– that a masculine identity may be preserved by avoiding objects, ideas, behaviors, etc. that are associated with femininity – reflect a prominent belief in research on women and men's roles in society (*gender roles*) and their impact on attitudes and behavior (Archer 1993; McCreary 1994; Vandello and Bosson

2013. For example, the precarious manhood hypothesis states that manhood (i.e., a masculine identity) is socially constructed, unstable and thus in need of constant maintenance through continuous affiliation with stereotypically masculine behaviors and attitudes (Vandello and Bosson 2013). In the current work, I build on the theory tested in these recent papers to demonstrate that cute consumption is another consumption domain where gender identity plays an understudied but significant role.

Our research was inspired by research on *kawaii* culture ('the culture of cuteness in Japan'; Marcus, Kurosu, Ma, and Hashizum 2017) and by broader work on the role of cuteness in consumer culture (Granot, Alejandro, and Russell 2014). *Kawaii* culture, the 'culture of cuteness' in Japan, reached its prominent place in Japanese society through the interest and support of young female consumers (Kinsella 1995; Marcus et al. 2017). Yuko Yamaguchi, the lead designer of Hello Kitty, said in an interview that the brand was originally targeted at elementary school children, but soon became popular with working women and housewives, such that new products were tailored to target this group (e.g., Hello Kitty houseware, kitchenware; Marcus, Kurosu, Ma and Hashizume 2017). Granot et al. (2017) propose "if cool is masculine, could cute be its feminine cultural counterpart?", suggesting that cute consumption and the culture around it is primarily driven and maintained by women. Indeed, recent empirical work conducted in Japan demonstrated sex differences in attitudes toward kawaii objects: female undergraduates liked kawaii objects more than did male undergraduates (Nittono 2016). This work provides preliminary evidence of a sex difference in the assessment of certain cute products, yet falls short of a systematic investigation of the role of sex and gender identity in attitudes toward cuteness.

In the present research, I conduct a robust investigation into the effects of sex and gender identity on evaluations of a range of cute stimuli (infants, animals, products). To

review, whereas *sex* is a *biological* variable relating to the physical differences between women and men across cultures, *gender identity* is best understood as a *social construct* representing a consumer's sense of how they relate to the content of gender stereotypes in their culture, which is usually visualized by individuals as a single-continuum with masculinity and femininity as opposing poles (Lieven et al. 2014). My results show that femininity and masculinity indeed have opposite relationships with cute consumption, such that femininity (masculinity) positively (negatively) predicts attitudes toward cuteness. I argue this is due to the existence of a cute-feminine stereotype ("Cuteness is for girls") that arose from several related factors, including the shared personality traits (emotionally expressive, nurturing) attributed to consumers of cuteness and feminine consumers, shared observable traits (small, round, pink) in cute and feminine designs, and greater cute consumption by women (vs. men). Accordingly, I test the core underlying assumption of my theory – that cuteness is strongly cognitively associated with femininity – through both implicit and explicit measures of the association.

To understand the consequence of the cute-feminine stereotype, I then test whether cute consumption can alter perceived gender identity, i.e., how feminine or masculine others think *you are*, as well as the perceived femininity of products, i.e., how feminine or masculine consumers think *a product is*. I find consuming cuteness impacts perceived gender identity of only *some* consumers, whereas the relationship between product cuteness and product femininity is more clearly positive and linear. Lastly, I consider one mechanism by which the cute-feminine stereotype persists by examining the choice of toys given to girls (vs. boys). Together, this work demonstrates the importance of considering the relation between concepts of gender and the cute aesthetic in understanding cute consumption.

In the next section, I review relevant research on the topics of cuteness and gender identity so as to ground my key predictions in these two literatures. In the empirical section, I describe the Study Sets and experiments testing my hypotheses. My empirical investigation into the relations between sex, gender identity, and cuteness can be usefully divided into three parts. Part I is composed of studies examining predictors of attitudes toward cuteness: a set of studies focusing on sex differences in attitudes toward cute stimuli (a) and a set of studies documenting the role of gender identity in predicting attitudes toward cute stimuli and choice of cute products (b). Part II tests for evidence of the mechanism behind differential attitudes toward cuteness and is composed of three experiments that use both implicit (c) and explicit (d) measures. Part III examines the consequences of consuming cuteness through a set of experiments showing that cuteness can impact the perceived gender identity of consumers and of products (e); and lastly, an experiment demonstrating one maintenance mechanism of the cute-feminine stereotype via adults' choice of products to donate to girls vs. boys (f).

THEORETICAL FRAMEWORK

Evolutionary Origins of Cuteness

Scientific interest in cuteness began when the prominent ethologist and author of *On Aggression*, Konrad Lorenz, sought to explain the relationship between infants and their caregivers. Lorenz (1943) posited that certain characteristics of infants*, kinderschema* in his native German*,* evoke an innate mechanism in humans that promotes an adaptive response to infants by increasing the likelihood that an infant is perceived as vulnerable and triggering the desire to protect the infant (Eibl-Eiselfeldt 1989). These characteristics are: 1) a large head in proportion to the body, 2) protruding forehead that is large in proportion to the size of

the rest of the face, 3) large eyes below the midline of the head, 4) short and thick extremities, 5) rounded body shape, 6) soft and elastic surfaces, and 7) round protruding cheeks (Eibl-Eiselfeldt 1989).

Considerable support for Lorenz's conjectures has been found using a range of psychological methods. Numerous studies have demonstrated that infants with more pronounced versions of these characteristics are judged to be cuter than infants with less pronounced versions of these characteristics (Alley 1981; Glocker et al. 2009a; Sternglanz, Gray, and Murakami 1977). This pattern extends to judgments of dogs, cats, and rabbits, suggesting that humans apply the same schema of cuteness to other species (Little 2012). By age five, children's judgments of cuteness converge with adults' judgments (Borgi, Cogliati-Dezza, Brelsford, Meints, and Cirulli 2014). In general, the extent to which judgments of cuteness are based on the features identified by Lorenz is remarkably consistent across individuals of different ages and cultures, supporting the argument that these features serve an adaptive function (Kringelbach, Stark, Alexander, Bornstein, and Stein 2016). Interestingly, consistent with the findings from this research, marketers and designers have used these same visual characteristics of infants to create cuter products, logos, brand characters, films, comics, paintings, and generally a lot of *kitsch*, defined as an art, object, or design characterized by excessive garishness or sentimentality (Dale, Goggin, Leyda, McIntyre, and Negra 2017; Hinde and Barden 1985).

The response to cuteness is typically characterized by two key qualities, *positive emotion* and *nurturing motivation*, that facilitate caregiving behavior. Cuter infants elicit more smiles and words from caregivers (Hildebrandt 1983), are looked at longer (Hildebrandt and Fitzgerald 1979), and elicit more caregiving responses (Alley 1983; Glocker et al. 2009b; Langlois, Ritter, Casey, and Swain 1995) than less cute infants. Cuter infants capture

attention to a greater extent than less cute infants, such that individuals resist looking away from cuter infants more than less cute infants (Brosch, Sanders, and Scherer 2007). Of interest, Sherman and Haidt (2011) proposed that cuteness may be an elicitor of a broader array of communal motivation, incorporating both the desire to care for and to play with the cute subject. However, this recent proposition has not yet been supported by a body of evidence comparable to the body of work investigating the link between cuteness and nurturing, or parental caregiving, motivation. For example, a team of neuroscientists recently proposed that cuteness facilitates caregiving behavior by igniting a rapid neurological response that prioritizes infant signals (e.g., crying, giggling) and is then followed by activity in the brain pleasure system that support deliberate and long-lasting caregiving behavior (Kringelbach et al. 2016). This is supported by neuroimaging research that shows that when women view images of cuter (vs. less cute) infants, there is greater activity in areas associated with attentional resources, anticipation of reward, and social bonding (Glocker et al. 2009a). Taken together, this body of research supports Lorenz's propositions on the adaptive function of cuteness and demonstrates the importance of understanding this construct in the marketing contexts where it frequently appears.

Sex differences in attitudes toward cuteness

Empirical evidence regarding the role of sex in responses to cuteness has not been consistent. A meta-analysis of the relations between demographic variables and responses to cuteness demonstrated that women evaluate a range of cute stimuli (i.e., cute infants and cute animals) as more pleasant than do men (Lehmann 2013). There is also evidence that women are more sensitive to variation in the degree of cuteness than are men and are able to more accurately discriminate between images of infants manipulated to be low (vs. high) in

cuteness (Lobmeier, Sprengelmeyer, Wiffin, and Perrett 2010; Sprengelmeyer et al. 2009). Steinnes (2017) found that women rate videos of cute animals as cuter and describe a greater emotional response (e.g., feeling moved or touched, goosebumps, positive tears) than do men. Lastly, early studies on cuteness showed that women express more favorable attitudes toward even simple sketches of cute infants (Goldberg, Blumberg, and Kriger 1982) and that women smile more at photographs of cute infants (Hildebrandt and Fitzgerald 1978).

However, several studies have failed to find a sex difference in responses to cuteness. For example, women and men state similar intentions to defend (Alley 1983) and care for (Glocker et al. 2009b) cute infants. Similarly, women and men show similar increases in prosocial and conservation behavior and feelings of tenderness upon viewing cute images (Wang, Mukhopadhyay and Patrick 2017). Parsons, Young, Kumari, Stein, and Kringelbach (2011) found that women rate images of cute infants as more attractive than do men, but both sexes exerted a similar amount of effort to keep viewing the same infants. Thus, it remains unclear whether there is a sex difference in how people respond to cute stimuli.

One possible reason for the inconsistency in past results is the way in which the attitudinal response to cute stimuli was measured. Many of the studies that documented a sex difference required participants to explicitly rate cute stimuli on a number of positive attributes (e.g., pleasant, relaxing) which forces the participant to have a stance on the subject. In contrast, those studies that failed to find a sex difference tended to ask participants more indirectly about how they would respond if they were to encounter cute stimuli (e.g., intentions to care for, defend), suggesting that sex differences in attitudes toward cuteness may depend somewhat on the context of assessment. In order to establish whether a sex difference is indeed robustly evident in attitudes toward cute stimuli, I conducted a series of studies with minimal context provided (i.e., no information on the cute subject or its status)

and using a standard attitudinal self-report measure (i.e., degree of liking) to measure responses toward a range of cute stimuli. Based on prior research using this attitudinal paradigm, these studies were conducted under the following guiding hypothesis:

H1: Women will express more positive attitudes toward cute stimuli than will men.

Sex and gender identity

We propose that sex differences in attitudes toward cute stimuli can be better understood by considering the role of *gender identity*. The distinction between sex and gender identity is critical to my work: following previous research, I define *sex* as the two categories (female and male) into which humans are divided on the basis of their reproductive function; in contrast, I define *gender identity* as an individual's characterization of how well the traits, attitudes, and behaviors typically associated with women (femininity) and those with men (masculinity) describe the individual (Wood and Eagly 2015). Gender identity may be understood in terms of individual differences in *femininity*, i.e., identification with traits, attitudes and behaviors associated with *females*, and in *masculinity*, i.e., identification with those associated with *males*.

There is a rich body of work describing these traits, attitudes, and behaviors as well as their relations (Bem 1978; Spence and Helmreich 1978; Taylor and Hall 1982). Traits that are highly accessible when people think about women relate to expressive and communal tendencies (e.g., "affectionate", "sympathetic", and "warm"), whereas traits which are highly accessible when people think of men relate to independence and dominance "self-reliant",

"assertive", and "forceful" (Abele 2003; Bakan 1966; Wood and Eagly 2012)[1]. Gender stereotypic traits, attitudes, and behaviors are all used as sources of information when assessing one's own gender identity. For example, a woman may view herself as feminine because she possesses feminine traits (e.g., she is compassionate) or because she engages in feminine behaviors (e.g., she wears the color pink).

What is the source of these ideas about what women and men think, believe, and do? Social role theory (Eagly 1987; Eagly and Steffen 1984) addresses this question by proposing that biological differences between women and men (e.g., reproductive system, upper body strength) led to distinct social roles (e.g., child-minder, provider) which determine the traits, attitudes, and behaviors associated with women and with men today. When referring to the specific social roles of women and of men (rather than of doctors, for example), I use the term *gender roles* for specificity.

The traits and attitudes required to perform one's gender role (e.g., child-minders must be attentive to the needs of others) inform the content of *gender stereotypes*, i.e., beliefs about the traits, attitudes, and behaviors of women and of men. For example, women (vs. men) are more likely to care for infants (gender role) due to biological differences in lactation (women need to pump breast milk, which was historically constricted to the home) which is one source of the stereotype that women are better with children than are men.

Gender stereotypes in turn inform what it means to identify as feminine or as masculine, which is of key importance to this work. Gender stereotypes about women reflect

[1] Although this collection of traits may appear traditional or outdated at first glance, gender researchers continue to observe sex differences in self-reports of these traits, such that women (men) report higher levels of feminine traits (masculine traits) (Wood and Eagly 2012; Meyers-Levy and Loken 2015). However, there is also a trend for women to report increasing agency in the last fifty years, attributed to increased female participation in the workforce (Twenge 1997; 2001).

the communal attributes (e.g., friendly, caring) and expressive attributes (e.g., affectionate, sweet) required to perform their gender role, whereas stereotypes about men reflect the agentic (e.g., independent, dominant) and instrumental (e.g., competent, effective) attributes required for their gender role (Eagly and Steffen 1984; Fiske, Cuddy, Glick, and Xu 2002; Glick and Fiske 1999; Spence and Helmreich 1980). Thus, a more (vs. less) feminine person is more likely to say they are friendly and affectionate, or that they possess other such gender stereotypical traits.

It is important to note that there is considerable variance between individuals in the exact *content* of their gender identity: two people who consider themselves feminine may relate to different aspects of femininity (caring, good with children vs. glamourous, hosts good parties) as a consequence of the breadth and richness of this construct. In other words, not all of the numerous attributes associated with women or with men may seem applicable to a given individual – yet the individual may still consider themselves feminine if they identify with some feminine attributes, like kindness and empathy (but not others, like cooking and cleaning) more than they identify with masculine attributes.

Of similar importance is the acknowledgement that, although women tend to identify as more feminine and less masculine than do men, there is substantial variation within the sexes, such that some women (men) identify more with masculine (feminine) traits and attitudes than feminine (masculine) traits and attitudes. Such individuals would thus consider themselves masculine (feminine), even if that differs from what is expected by others based on their biological sex.

For this reason, gender identity is best conceived of in terms of independent variation on these two dimensions, such that most individuals identify with some aspects of femininity and some aspects of masculinity, consistent with the growing acceptance of androgyny

(Bosson and Michniewicz 2013; Lieven et al. 2014). Yet, there still may be a clear difference in the relative centrality and thus accessibility of the two identities for some individuals (Bem 1974). As a result, many individuals still conceptualize femininity and masculinity as opposite endpoints on the same continuum, with a boundary between the behaviors that are considered feminine and those that are considered masculine, despite growing acceptance of androgyny (Bosson and Michniewicz 2013; Lieven et al. 2014). In sum, feeling that stereotypically feminine (masculine) attributes apply to you leads you to gravitate towards a feminine (masculine) gender identity (Meier-Pesti and Penz 2008), which in turn influences how you evaluate products, marketing communications, and other people, to understand the degree of fit between their identity and your own.

Consumer research on gender identity

Consumer research on gender identity has examined how it predicts attitudes and consumption behavior (Rozin, Hormes, Faith, and Wansink 2012; Sobal 2005); responses to advertisements (Martin and Gnoth 2009); and compromise behavior when making a dyadic decision (Nikolova and Lamberton 2016). For example, Winterich, Mittal and Ross Jr. (2009) examined how gender identity and moral identity interact to impact donation behavior. Specifically, they showed that a *feminine identity* increased donation behavior for outgroup members (vs. ingroup members), whereas the opposite was true for a *masculine identity*; this pattern of results was mediated by inclusion of the other in the self.

In turn, consumption behaviors have a reciprocal impact on a consumer's *perceived gender identity*, i.e., how they are viewed by others. Perceived gender identity is defined as *others'* perceptions of *your* gender identity, and is composed of two dimensions: perceived masculinity (how much do you seem to have in common with a stereotypical man) and

perceived femininity (how much do you seem to have in common with a stereotypical woman). It is preferable to be identified congruently to how you see yourself (i.e., when self-perceptions and social perceptions of femininity or masculinity align).

The visibility of some feminine or masculine behaviors, like wearing the color pink, results in their incorporation in appraisals of gender identity (Wood and Eagly 2012). Brough, Wilkie, Ma, Isaac, and Bodenhausen (2016) demonstrated that consuming environmentally-friendly products ("green consumption") is perceived as a stereotypically feminine behavior and this can reduce men's intentions to engage in such behavior; accordingly, in order to increase uptake of green products among men, the authors rebranded green consumer products to be more masculine, as well as affirmed men's gender identity. Similarly, Wilkie and Bodenhausen (2018) found that odd numbers were viewed as more masculine than even numbers, such that stimuli labeled with odd (vs. even) numbers carry associations with masculinity (vs. femininity). Their logic may be illustrated by the number one: one is a solitary, independent number, whereas the following even number (two) implies a relationship and even cooperation. In short, research on gender identity in marketing has highlighted its predictive power in explaining consumption choices, as well the reciprocal consequences of these consumption choices on perceived gender identity.

Gender identity is but one of many social identities consumers express to the world; however, it is a particularly salient identity due of the high perceived relevance of gender to the objectives of everyday life (e.g., who to ask for help, which bathroom to use) and thus deserves careful consideration in consumer research (Coleman et al. 2021; Meyers-Levy and Loken 2015). Accordingly, my work explores the role of sex and gender identity in the prevalent, yet understudied, domain of cute consumption. In the next section, I tie together

these two seemingly unrelated constructs, gender identity and cuteness, to demonstrate how gender identity can be used to better understand and predict cute consumption.

Shared associations between femininity and cuteness

We propose that both components of gender identity, femininity and masculinity, can be leveraged to explain cute consumption behavior, e.g., wearing a cute T-shirt or liking posts of cute content on social media. Similar to green consumption, I argue that cute consumption is a gendered action – specifically, that it is perceived as a *feminine* behavior – which has consequences for how individuals pursuing a feminine identity and those pursuing a masculine identity engage with cute products, advertisements, or characters.

Cuteness may be perceived as feminine for several reasons: a) the traits, attitudes and behaviors associated with the cuteness response, b) the physical attributes associated with cute stimuli and feminine stimuli (e.g., small, round, soft, etc.), and c) the relative prevalence of female (vs. male) consumers of cuteness.

To understand the first reason, consider the stereotypical response to a cute stimulus (e.g., baby panda at the zoo). Behaviors like smiling (Hildebrandt and Fitzgerald 1978; Hildebrandt 1983) and saying "Aww" (Buckley 2016; Steinnes 2017) reflect the activation of communal motivation, tenderness, and empathy (Lishner, Oceja, Stocks and Zaspel 2008; Lishner, Batson and Huss 2011; Sherman and Haidt 2011; Wang et al. 2017; Zickfeld and Kunst 2018) that cute infants adapted, and cute products were designed, to evoke. In extreme cases, a cute stimulus can trigger a cascade of positive emotions so strong as to even overwhelm the consumer of cuteness (Aragón, Clark, Dyer, and Bargh 2015; "cuteness overload"). These emotions, motivations, and behaviors comprise 'the cuteness response' (Steinnes 2017) and are salient associations with the concept of cuteness, such that cuter

infants and adults are perceived to have high levels of traits like warmth, sociability, naïveté, and easiness to care for (Berry and McArthur 1985; Karraker and Stern 1990). Similarly, smiling infants are perceived as cuter than the same infants with neutral expressions, suggesting that a sociable or communal attitude is considered an important attitudinal attribute of cuteness (Hildebrandt 1983; Karraker and Stern 1990). As noted in my section on gender identity, emotional expressivity and communion are core attributes that define femininity (Abele 2003; Gill, Stockard, Johnson, and Williams 1987; Kinsella 1995; Meyers-Levy 1988; Shields 2002; Spence 1984). Thus, I propose that the concepts of cuteness and femininity are cognitively linked due to sharing strong associations with traits, attitudes, and behaviors related to emotional expression and communion.

The link between cuteness and femininity is strengthened by the presence of ties across multiple domains, including in the second category, observable attributes (small, soft, round). A product's appearance is a major determinant of its perceived personality (Govers, Hekkert and Schoormans 2002). For example, Warren and Campbell (2014) demonstrate that more divergent product designs (e.g., a mostly triangular water bottle) increase perceived autonomy and thus coolness of products. Cuteness in this context of product design may be defined as the presence of one or more of the seven physical attributes used to determine the cuteness of infants (e.g., round shape[2]), as well as the additional proposed quality of miniature size (Cho 2012; Marcus et al. 2017). The latter attribute is added to definitions of product cuteness specifically because it approximates the relation between the size of infants and the size of adults, i.e., infants are miniature adults.

[2] The seven attributes are: large eyes below the midline of the head, protruding forehead large in proportion to the size of the rest of the face, large head in proportion to body, round protruding cheeks, soft and elastic surfaces, rounded body shape, short and thick limbs (Lorenz 1943; translated from German and re-published by Eibl-Eiselfeldt 1989).

In contrast, feminine product design leverages the unique physical features associated with women. The following attributes have been identified as sources of product femininity: roundness (vs. angles), lightness in color (vs. darkness in color), shininess (vs. dullness), lightness in weight (vs. heaviness in weight), slimness in proportion (vs. bulkiness in proportion), and the presence of curvy lines (vs. presence of straight lines; van Tilburg, Lieven, Hermann, and Townsend 2015).

It is apparent that similar design characteristics are used to make a product cute and to make a product feminine, including small size, light colors and tones, round shape, and soft texture. Similarly, the color pink is often used in cute product design (Cho 2012), yet has strong associations with femininity (van Tilburg et al. 2015). For this reason, concerns regarding the separability of the concepts of cuteness and femininity in the context of product design are warranted. To address this concern, in the next section, I conceptually distinguish the constructs of cuteness and femininity by referring to the grounding of each construct in evolutionary psychology, then provide examples of how the distinct definitions of cuteness and femininity have led to distinct operationalizations in product design.

The attributes used to create cute or feminine product designs have direct correspondence in evolutionary theories of cuteness and of femininity. In Kenrick, Griskevicius, Neuberg and Schaller's (2010) fundamental motive framework, *the parenting motive* is a set of affective and cognitive mechanisms designed to increase caregiving of vulnerable youth, and which can be triggered by evaluating images of cute infants (Li, Haws, and Griskevicius 2019) or hearing an infant cry. Accordingly, cuteness is defined as certain features of infants that prompt an adaptive response in the beholder, such as nurturing behavior from parents or other kin (Lorenz 1943). Parenting occupies a unique position "at

the top"[3] of the pyramid of fundamental human motives, which include mate retention and acquisition, status/esteem, affiliation, self-protection, alongside immediate physiological needs, in an updated version of Maslow's hierarchy of needs (Kenrick et al. 2010).

In contrast, femininity is defined in this literature as the properties that connote a female's potential mate value (e.g., age) and is thus better situated in the context of mating behavior (Buss 1994). If a woman with broad (vs. narrow) hips is more likely to be able to produce surviving offspring, she has greater mate value, and for this reason, she is likely to be perceived as more feminine. Thus, femininity is more likely to trigger *mating motives* (*mate acquisition, mate retention*), akin to smelling desirable pheromones, whereas cuteness is more likely to activate a distinct fundamental motive, the *parenting motive*.

It is possible to use these definitions to further identify design features that elevate the cuteness, but reduce the femininity, of products. Two such features are shape (roundness throughout vs. hourglass shape) and form (stocky form vs. slim form). For shape, roundness throughout is achieved by using soft, round, edges continuously throughout the design, whereas an hourglass shape involves combining two round components through a slim middle component. Examples of the latter include the original Ivory soap bottle and the nutritional supplement Benefiber (DiSalvio and Gemperle 2003). Roundness is used by designers of cute products and characters to approximate the distinctively soft and squishy shape of infants (Marcus et al. 2017). This is because infants have not gone through the process of sexual maturation and thus possess a blob-like, round form, a distinct contrast from the distinctive shape of sexually mature women (e.g., breasts, broad hips) or men (e.g., broad shoulders, narrow hips).

[3] Each level of the pyramid is visualized as a layer, such that each must be met continuously rather than discretely to "move up" the ladder of the pyramid (Kenrick et al. 2010, see pg. 36 for picture).

The feminine form is represented in product design by an hourglass shape because sexually dimorphic features (i.e., elevated breasts, a narrow waist, broad hips, smooth jawline, non-protruding brow) allow perceivers to rapidly distinguish women from men. Thus, the key differential factor in cute (vs. feminine) product shapes are the inclusion of curves in the latter that reflect the sexual maturity of women, and which would be inappropriate in cute product design because infants are sexually immature and basically beach balls. In short, product shape can be used to convey cuteness by making the product as round as possible, or to convey femininity by using an hourglass shape.

The second factor that distinguishes a cute and a feminine design is form: stocky form is characterized by thick proportions and thick lines, whereas open form is characterized by the use of slim proportions and thin, graceful, lines (Govers, Hekkert and Schoormans 2003). Stocky form may be used to convey one of the most forgotten, yet defining, features of cuteness in infants: 'stubby limbs'. The characters of Moana (Disney's *Moana*) and Russell (Pixar's *Up*) exemplify the use of stubby limbs to convey youthfulness and physical immaturity. In contrast, the concept of slim form corresponds to the attributes of 'slimness in proportion' and 'lightness of weight' from van Tilburg et al.'s (2015) list of determinants of product femininity. These attributes highlight a key aspect of femininity that is not shared by cuteness: grace, elegance, beauty, all factors related to maturity. Cuteness has been described as "commonplace and generous, content on occasion to co-segregate with homeliness" whereas the same author described beauty as "rare and brutal, despoiled regularly", a characterization that can apply to femininity when it is taken to the extreme (Angier, *The New York Times,* 2006).

In short, sexual maturity is the key differentiator between the evolutionary constructs of cuteness and femininity, as well as the design elements used to distinguish a cute aesthetic

and a feminine aesthetic (shape, form). Thus, it is possible for an object to be classified as cute, but not feminine (e.g., Mickey Mouse), and feminine but not cute (e.g., Michelle Obama). Together, these arguments demonstrate that the conceptual overlap between cuteness and femininity is accompanied by important differences (e.g., low vs. high sexual maturity) which are critical to understanding how cute products are understood and evaluated.

The third important reason that individuals may associate cuteness with femininity is the relatively greater consumption of cute products by women (vs. men) that has been noted in cross-cultural consumer research (Granot et al. 2014). The explanation for greater cute consumption by women is likely a combination of specific cultural factors (i.e., history of *kawaii* in Japan) and the reasons that cuteness is associated with femininity that I have outlined here (i.e., overlap in perceptual and visual attributes).

In sum, I propose that the two unique constructs of femininity and of cuteness are connected in consumers' minds because of the overlap in perceptual attributes (i.e., warm, gentle) and physical attributes (i.e., round, soft) associated with each construct[4], as well as the greater usage of cute products by women (vs. men), and that this results in the generation of a *cute-feminine stereotype*, which may be described as a commonly held, accessible, bias that, put simply, "cuteness is for girls (vs. boys)". This leads to my second hypothesis:

> **H2a:** Individuals implicitly associate the concepts of cuteness and femininity (e.g., female names) more so than they implicitly associate cuteness with masculinity (e.g., male names).

[4] Cuteness and femininity are two unique associations that are not shared with the other (i.e., elegant, clumsy), suggesting that, although they share the attributes described here, they cannot be compressed into one construct.

Due to associating cuteness with women (and thus femininity), I hypothesized that individuals would apply this stereotype when predicting who (women, men) will like and buy cute products. Stereotypes regarding the groups a target individual belongs to are more likely to be applied in predicting how the target would act in a given situation when people lack specific, relevant information on a target individual's attitudes that would indicate how they would behave in an ambiguous situation (i.e., participants are not given any explanation for why they are evaluating who will like cute products (is it a parent buying a gift for their child?), which could direct them toward a context-dependent answer). This leads to the second part of hypothesis 2:

> **H2b:** Individuals will predict that women are more likely to like and buy cute products than are men.

I now proceed to the consequences of this overlap in associations between cuteness and femininity for consumer's attitudes, choices, and behaviors.

Gender identity predicts liking cuteness

The presence of many shared associations between cuteness and femininity has important implications for who is more likely to consume cuteness. Consumer attitudes toward a given product or aesthetic are impacted by the social ramifications of consumption (Maeng and Agarwal 2017). For example, the social group associated with the product or aesthetic has a strong influence on its desirability, such that products consumed by members or one's ingroup or an aspirational group will be more desirable than those consumed by members of a dissociative reference group (Berger 2008; Berger and Rand 2008; Escalas and

Bettman 2003). For example, Rozin et al. (2012) demonstrated that, because meat is associated with maleness, women eat less meat than do men in order to reduce their associations with masculinity. Although it is not integral to avoid masculine behaviors to maintain a feminine identity, there is still a degree of avoidance of the opposing sex's behaviors in order to reduce the ambiguity that can occur when others try to assess one's gender identity. In other words, acting congruently to the gender identity you gravitate towards (e.g., enacting stereotypically feminine or masculine behaviors) is one way to increase the likelihood that others perceive you as you would like to be perceived.

Based on my theory, I would predict that individuals who *desire to* be perceived as feminine consume or express positive attitudes toward cuteness as a means of demonstrating their communion and emotional expressiveness (key aspects of femininity), whereas individuals who *seek to avoid* being perceived as feminine shy away from expressing a positive attitude toward cuteness in order to avoid being perceived as possessing these traits[5]. Social pressure to avoid expressing traits associated with the other gender identity is far more critical to maintaining a masculine (vs. feminine) identity (McCreary 1994; White and Dahl 2006). In other words, eschewing the opportunity to be feminine is a more integral part of the definition of a masculine identity than avoiding masculine behavior is to the definition of a feminine identity (Kimmel 1994; Pleck, Sonestein, and Ku 1993; Vandello and Bosson 2013; Spielmann, Dobscha, and Lowrey 2021). Indeed, men who are perceived as feminine often face even harsher social consequences than women who are perceived as masculine (Langlois

[5] To be clear, in using gender identity theories to explain a multiple determined behavior like meat consumption or cute consumption, I do not suggest that other explanations, including biological explanations, are relevant and possible (i.e., men eat more than women because they have more mass, women like cuteness more than men because women are the ones to bear children). However, such explanations for sex differences in attitudes toward cuteness have been discussed elsewhere (see Kringelbach et al. 2016), allowing us to introduce the role of social constructs like gender identity to explain cute consumption.

and Downs 1980; Lytton and Romney 1991). In order to prevent others from perceiving them as feminine, individuals maintaining a masculine identity will avoid behaviors which are considered feminine, such as giggling, wearing makeup or ordering fruit cocktails, and even disparage masculine individuals that engage in these behaviors (Bem and Lenney 1976; Halim et al. 2014). In general, men consider it more important to choose products congruent with their gender identity than do women, an effect that the authors argue is even more likely in consumption contexts where self-expression is focal (i.e., on a first date, at a party; Fugate and Phillips 2010).

We expect this discrepancy in attitudes toward femininity to lead individuals high (vs. low) in femininity or low (vs. high) in masculinity to express more favorable attitudes toward cuteness, which yields the third hypothesis:

> **H3:** Gender identity will be related to attitudes toward cute stimuli, such that self-reported femininity will be positively related to attitudes toward cute stimuli, whereas self-reported masculinity will be negatively related to attitudes toward cute stimuli.

Alternative explanation: product femininity

The co-occurrence of visual attributes associated with cuteness and with femininity in products allows for the possibility that feminine individuals express positive attitudes toward cute products because they perceive the products as feminine, and their favorable attitude is driven by the perceived femininity of the product rather than the perceived cuteness of the product. To address this concern, I consider it prudent to review work that has tested the assumption that femininity will influence attitudes toward products that are perceived as feminine. It is logical to predict that congruence between an individual's gender identity and

the perceived gender identity of a product would increase the favorability of product evaluations; for this reason, this prediction has been frequently tested (Gentry, Doering, and O'Brien 1978; Golden, Allison, and Clee 1979; Stern, Gould, and Tewari 1993; Vitz and Johnson 1965). In support, Vitz and Johnson (1965) demonstrated that individual differences in masculinity indeed predicted preferences for masculine-branded cigarettes. In her development of a scale measuring *brand* (not product) gender identity, Grohmann (2009) found that consumers prefer brands whose perceived gender identity matches their own. This is likely a result of brands' well-documented ability to create symbolic value for products (i.e., Levy 1959), something that is missing from the majority of generic cute and generic feminine products.

However, the other studies cited did not find support for a gender congruity effect on product evaluations. For example, Gentry, Doering, and O'Brien (1978) found that the fit between an individual's gender identity and the perceived gender identity of a series of products and leisure activities was not related to product use or participation. Instead, gender identity predicted usage of some products (e.g., bar soap) but not others, without a clear interaction pattern between participant's gender identity and product gender identity. Golden, Allison, and Clee (1979) also failed to find a systematic relationship between an individual's gender identity, the perceived gender identity of a large series of products, and product use. Thus, the assumption that the perceived femininity of cute products may drive a positive evaluation from individuals that with a highly feminine gender identity is not well-supported by prior research on the topic. In sum, we consider the *perceived cuteness of products* – rather than the perceived femininity of products – to be the more likely candidate to drive positive evaluations from feminine individuals, due to the compatibility of certain perceptual and visual associations of cuteness with those of femininity (i.e., warm, sweet, round).

Cuteness impacts perceived femininity

As a result of the strong connections between cuteness and femininity, cuter subjects – including babies, animals, and products – should be perceived as more feminine. In support of this proposed connection, Hildebrandt and Fitzgerald (1977) examined perceptions of more (vs. less) cute infants – without providing the sex of the infant – finding that college students were more likely to judge the infant to be a girl (vs. boy) when it was more (vs. less) cute. The perceived femininity of cute animals or cute products has not yet been investigated. Based on this logic, I make the following fourth hypothesis:

> **H4a:** High (vs. low) cute products will be perceived as more feminine and less masculine by observers.

It remains to be seen if merely *consuming* cute products or media, rather than being inherently cute, has the power to alter perceived gender identity. Based on the strong association between cuteness and femininity, I predict that consumers of cuteness will indeed be perceived to be more feminine and less masculine, like the drawings of infants in Hildebrandt's work. This is particularly likely when other information on the consumer is not provided – besides that they own and are carrying cute products – because a lack of relevant information to judge others encourages individuals to apply stereotypes. In such a case, we expect observers to apply the cute-feminine stereotype due to its relative accessibility: assessments of femininity are made very frequently in our encounters with other humans, media, and products, and thus the construct of femininity is relatively accessible when making judgments of perceived femininity compared to something more specific, like perceived teaching ability. Formally,

H4b: Consumers of high (vs. low) cute products will be perceived as more feminine and less masculine by observers.

It is important to note that feminine consumers may not always be perceived as cute because of the greater breadth and depth of the construct of femininity Individuals have many more associations with femininity than with cuteness simply because gender cues are extremely prevalent in everyday life. For this reason, perceiving someone as feminine could bring to mind the attributes of elegant, glamorous, sexy, rather than cute. It is more likely that a feminine individual will be perceived as cute if they display the traits, attitudes, behaviors, or visual attributes associated with cuteness (i.e., giggling, high pitched voice, wearing a t-shirt with a cartoon animal). In sum, I can describe the activation pattern of associations with cuteness and with femininity as asymmetric, in that perceiving something as cute is more likely to activate associations with femininity than perceiving someone as feminine is likely to activate associations with cuteness.

Moderating factors on the effect of cute consumption on perceived gender identity

I have argued that consuming cute products has the potential to increase perceived femininity of consumers and thus reduce perceived masculinity. However, it is unlikely that cute consumption will *always* be attributed to an individual's gender identity. According to classic attribution theories, observers attempt to understand the causality behind a given behavior by making inferences that are dispositional (to the person) or situational (to the situation) in nature (Kelley 1973). In the case of a cute consumption behavior, a dispositional inference would be that that the target consumes cute products because they *like* cute products, whereas a situational inference would be that the target consumes cute products

because of some external factor inducing them to consume cuteness, e.g., it is traditional to celebrate and consume cute products at a child's birthday party. In order to understand when cute consumption impacts a consumer's perceived gender identity, I must consider when consumption is more likely to be attributed to *dispositional* factors over situational factors.

First, the tendency to attribute behavior to dispositional rather than situational factors, a robust effect called the fundamental attribution error, may lead observers to initially attribute a cute consumption behavior to the target's positive attitude toward cute product aesthetics (Cowley 2012; Gilbert 2015; Ross 1977). Dispositional attributions for behaviors are more likely when a salient situational factor that could explain the cute consumption behavior is lacking (Kelley 1973). Consider the following case: while standing in line to checkout during a typical trip to the grocery store, you observe someone ahead of you who has several cute products (e.g., cute reusable shopping bag, sticker, keychain). Without more information on the other shopper or on the situation, the only salient information in this scenario is that the shopper uses the same grocery store as you, they shop at the same time as you, and that they have multiple cute products. It would be reasonable with the information provided to make a dispositional attribution for their cute consumption behavior and predict that they like cute things. However, if you were told that there was a fundraising booth at the store entrance that was giving away cute animal freebies to patrons who donate, it would present a viable alternative to your hypothesis. With more information about the situation, a dispositional inference that the shopper likes cuteness becomes less likely because it is no longer the only viable explanation for the behavior in question.

Second, according to the augmentation principle, when there are known constraints or costs to a given action (e.g., attending a public protest under the threat of arrest), the action is more likely to be attributed to the actor's disposition because adhering to the norms of the

situation would dictate the opposite behavior (e.g., do not attend the protest to avoid arrest; Kelley and Michela 1980). If there is indeed a heightened chance of being perceived as feminine as a result of consuming cute products, as I have proposed, then some men (i.e., those high in masculinity) would perceive cute consumption differently than women and other men (i.e., those low in masculinity). Specifically, highly masculine individuals risk being perceived as more feminine and thus less masculine by their peers, which would interfere with their ability to maintain a masculine identity. In sum, based on the augmentation principle, I predict cute consumption to be a particularly strong signal of femininity when there are known social costs to being perceived as feminine, like in a highly masculine environment (e.g., gym, board room).

H4c: Consumption context will moderate the positive effect of cute consumption on perceived femininity, such that this effect will be larger in more (vs. less) stereotypically masculine environments.

Maintenance of the cute-feminine stereotype

I have identified several reasons why the concepts of cuteness and femininity are strongly associated. First, the salient traits, attitudes, and behaviors associated with each concept reflect shared themes of emotional expression and communion. Second, a cute aesthetic shares multiple visual attributes – small, lightweight, soft, round edges, etc. – with feminine designs. Third, cute products are often targeted at female consumers, like in the case of Hello Kitty (Marcus et al. 2017), and it reasonable to assume that, among adults, women consume the majority of cute products (Granot et al. 2014).

As a result of these reasons, I have proposed there exists a stereotype that "cuteness is for girls", called the *cute-feminine stereotype*, and which is frequently applied in evaluations

of cute products. In order to understand how this gender stereotype is maintained, I next consider the processes of *gender role socialization* in more detail.

Gender role researchers describe the process by which young girls and boys learn their gender roles, i.e., how women and men act, as part of the socialization process (Fisher-Thompson and Sousa 1993; Fisher-Thompson, Sousa and Wright 1995; Wood and Eagly 2012). From a young age, girls learn to be warm, nurturing, and affectionate, and boys learn to be independent, competent, and aggressive (Halim et al. 2014). Despite changing societal roles for women, pervasive gender stereotypes that classify women as the caretakers and nurturers of the world, and men as the providers and heroes, are remarkably persistent (Diekman and Eagly 2000; Eagly and Sczesny 2019). According to this model, socialization occurs thus: children learn how to behave as expected by adults in order to pursue reward or avoid punishment, and these expectations include following current gender norms (feminine norms, masculine norms) in order to maintain social harmony and avoid conflict with others[6].

Play is an important part of socialization (Block 1983). In order to facilitate the socialization of gender roles, children's products are segregated by gender, despite increasing openness to the idea that gender is non-binary. Girls' products emphasize caretaking, socializing, and housework, like dolls or fashion accessories, whereas boys' products emphasize problem-solving, construction, and even violence, like Legos and video games. Some companies, like Lego, are taking direct action to address the gender stereotypes

[6] Although adult figures (parents, teachers, community) can vary considerably in their adherence and commitment to traditional gender norms, it is impossible to avoid exposure to more gender role-consistent than gender role-inconsistent information, simply because gender roles approximate the commonly held beliefs about women and men in a society. In other words, even if one tries to educate their child on the historical prejudice and costs of strict gender roles and instill progressive gender attitudes, the best one can hope for is that the child possesses the tools to critically evaluate the pervasive gender role-consistent cues they receive as a result of social engagement and media consumption.

perpetuated by its marketing and products, but this remains a topic of contention in the toy industry (Treisman, *NPR*, 2021).

When purchasing toys for a child, consumers tend to make gender-role consistent choices (i.e., dolls for girls, blocks for boys), especially when the toy is a gift (Fisher-Thompson and Sousa 1993). Consumers may be more likely to use gender norms in their choice of toys to donate (vs. give to their own children) because the situation is more ambiguous (i.e., they are unaware of the recipient's preferences) and social norms function to provide guidance on how to behave in particular situations (Cialdini 2012).

For this reason, I used a donation context to study the impact of the cute-feminine stereotype on choice of products to give children. If there exists a prevalent cute-feminine stereotype propagating that cute products are more compatible with a feminine (vs. masculine) identity, it would be logical to predict that cute products will be donated more often to female recipients, who are more likely to be high in feminine identity, than to male recipients, who are less likely to be high in feminine identity. Evidence for such an effect in the context of juvenile recipients, instead of adult recipients, would suggest socialization is one process by which the cute-feminine association is maintained. This logic leads to my last hypothesis:

H5: Girls will be more likely to receive high (vs. low) cute products as donations than will boys.

In summary, my empirical investigation into the relations between sex, gender identity, and cuteness can be usefully imagined as comprising three parts. Part I is composed of studies examining predictors of attitudes toward cuteness. Part II tests for evidence of the mechanism behind differential attitudes toward cuteness. Part III examines the consequences

of consuming cuteness on social perceptions and choice of product donations. Together, these three parts address the complex and important relationship between sex, gender identity, and cuteness.

EXPERIMENTS

Table 2 presents an overview of the experiments and their respective methods.

Study Set 1 (twelve studies in total) examines sex differences in attitudes toward cute animals, whereas Study Set 2 (six studies in total) examines the correlations of the two components of gender identity (femininity, masculinity) with attitudes toward a broader range of cute stimuli.

Experiment 3 tests the core underlying assumption to my theory – that cuteness is strongly cognitively associated with femininity – through the use of a custom-made Cute-Gender IAT. I continue to test for evidence of the cute-feminine stereotype in Experiment Set 4 (two studies) by *a*) asking individuals to predict how much women and how much men would like a set of cute of real products, *b*) asking individuals to predict who (women vs. men) would be more likely to buy the same set of real cute products by moving a slider closer to one endpoint of the scale (i.e., left endpoint = women, right endpoint = men), thus forcing them to choose between the two groups or to leave the slider at the midpoint to indicate that there would be no gender difference in purchasing these cute products.

Experiment Set 5 (five studies) tests the downstream consequences of the cute-feminine association: specifically, does it impact the perceived gender identity of cute products (i.e., does being cute make a product more feminine?); what about the perceived gender identity of the products' owners (i.e., does owning something cute make you seem more feminine?). In these studies, a target product or individual's *perceived femininity (masculinity)* is measured using an adapted version of the single-item measure of self-perceptions of femininity (masculinity) ("In your opinion, how feminine (masculine) is the target?") and through textual analysis (LIWC) of adjectives used by participants to describe consumers of cuteness.

Lastly, Experiment 6 highlights the role that stereotyping cute consumption as feminine plays on gender role socialization, in particular in the choice of which toys and other products to gift girls vs. boys.

For all analyses, I excluded participants who selected "non-binary" to represent their gender. This was done so I could make meaningful comparisons between gender groups, which would be impossible otherwise given the small sample of non-binary participants.

Table 2. Overview of study methods

Study	H	N	Dependent variable	Independent variable
Set 1	H1	2,160	Attitudes toward cute animals	Sex
Set 2	H3	1,862	Attitudes toward cuteness	Gender identity Sex
3	H2a	187	Cute-female association (D-score from IAT)	Cuteness of product (high, low) Sex of names (f, m)
Set 4	H2b	791	Predicted attitude toward cute products Predicted purchase intentions for cute products	Cuteness of product (high, low) Sex of prospective consumer (f, m)
Set 5	H4a H4b H4c	1,527	Perceived femininity of product Perceived femininity of typical consumer	Cuteness of product (high, low) Sex of product owner (f, m) Context of cute consumption
6	H5	300	Choice of products to donate	Cuteness of product (high, low) Sex of recipient (f, m)

	SUM	6,827		

STUDY SET 1: WOMEN EXPRESS MORE POSITIVE ATTITUDES TOWARD CUTE STIMULI THAN DO MEN

In Study Set 1, I examined whether women and men differ in their evaluation of cute stimuli and whether this depends on the level of cuteness present in the stimuli. The twelve studies in this set were conducted to test a variety of separate hypotheses that are unrelated to the present research. However, all studies contain relevant measures of participant sex and of attitudes toward a set of cute stimuli and thus can be used to estimate the effect of sex on attitudes toward cute stimuli.

In all studies, women and men indicated how much they liked pictures of cute animals (see Appendix A). Cats and dogs were chosen because prior work has demonstrated the strong effect of infantile attributes on perceptions of cuteness in these animals (see Lehmann et al. 2013 for summary). However, within animals, there are differences in *degree* of cuteness: young animals (e.g., puppies, kittens) have, on average, higher levels of infantile attributes (larger eyes, larger head in proportion to body) than do older animals, due to their relative immaturity, and are thus perceived to be cuter (Sherman et al. 2009; Sherman et al. 2013). Accordingly, to test if sex differences in evaluations of cute stimuli depend on the *degree of cuteness* in the stimuli, I varied the maturity of the animals in the pictures viewed by participants, such that half of participants evaluated infant animals (*high cute condition*) and half evaluated adult animals (*low cute condition*).

It is possible there would be an interaction between sex of participant and level of cuteness (high vs. low), such that sex differences in attitudes are larger for high cute stimuli than for low cute stimuli, because the latter is a more extreme case of the former, and thus

evokes stronger associations with femininity (i.e., if it is more cute, then it must be more feminine). In other words, participants may be sensitive to changes in degree of cuteness. If this is the case, then very cute stimuli would evoke a wider gap in evaluations between women and men as each respond to this greater degree of cuteness, and thus femininity, in opposite ways. This is an exploratory hypothesis explored alongside my main hypothesis regarding sex differences in evaluations of cute stimuli.

By combining the results across these twelve studies, I may gain a more precise estimate of the size and robustness of any sex difference in attitudes toward cute animals. In order to estimate the effect of participant's sex on attitudes toward cute animals among this large set of studies, I ran a hierarchical linear regression with study included as a random effect. Data sets were included which met the following criteria: 1) attitude toward cuteness was measured by asking participants to evaluate a set of images of cute animals, and 2) sex of participants was recorded. This resulted in the inclusion of twelve studies. Data were collected between May – December 2018.

Participants and Design. A total of 2,211 adults participated in the twelve studies included in the single-paper meta-analysis. I excluded participants who selected "non-binary" to represent their gender (N = 17) for a final sample of 2,194 participants (M_{age} = 36.7, *SD* = 12.1; 1,059 females). The design across all studies was a 2 (*sex of participant*: female, male) x 2 (*cuteness level:* high, low) between-subjects design, with attitudes toward cute stimuli as the dependent variable. The first factor is measured and the second factor is manipulated.

Procedure. Across all studies, participants were told that they would evaluate pictures of familiar stimuli (nature, animals) before moving on to the main task in which they would evaluate hypothetical scenarios. Of interest here are the responses to the first part, the image evaluation task: in this task, participants viewed images of eight cute animals in a randomized

order and rated how much they liked each image using seven-point scales (1 = not at all, 7 = extremely). The stimuli and procedure are the same as in Sherman, Haidt, and Cohen (2009). Participants were randomly assigned to view either eight images of infant animals (kittens, puppies; *high cute condition*) or adult animals (cats, dogs; *low cute condition*). I averaged participants' responses to the eight images (αs < 0.80) to create an index of attitudes toward cute stimuli, which served as the dependent variable. After evaluating the images, participants completed other scales unrelated to this research for approximately three minutes before answering standard demographic questions, including sex (select one option from the following set: male, female, non-binary).

Results.

I combined the data from the twelve studies included and ran a hierarchical linear regression on attitudes toward cute stimuli with sex of participant and cuteness level as fixed factors, and study as a random factor. The interaction between sex of participant and cuteness level was not significant ($t(2,179) = 1.50$, $p = .135$), but the main effect of sex was significant and in the expected direction ($B = .17$, *S.E.* = .02, $t(2,188) = 7.90$, $p < .001$, $\omega^2_p = .03$ [95% C.I. = 0.02-0.04]). Women expressed more positive attitudes toward both the high cute animals ($B = .20$, *S.E.* = .03, $t(1,093) = 7.14$, $p < .001$, $\omega^2_p = .04$ [95% C.I. = 0.02-0.07]) and the medium cute animals ($B = .14$, *S.E.* = .03, $t(1,084) = 4.70$, $p < .001$, $\omega^2_p = .02$ [95% C.I. = 0.01-0.04]) than did men.

To better approximate the size of this sex difference, I also conducted a single-paper meta-analysis (McShane and Bockenholt 2017) to estimate the effect of sex on attitudes toward cute stimuli in Study Set 1. Table 3 shows the average score on the index of attitudes

toward cute stimuli for women and men in each study, which was used as the input for the single-paper meta-analysis. The effect size was estimated to be 0.33 (95% C.I. 0.25-0.42), such that women, on average, liked the cute stimuli more (M = 5.86, $S.D.$ = 1.57) than men (M = 5.51, $S.D.$ = 1.55). I^2 was estimated at 58.01% (95% CI: 33%-73%), suggesting that method factors accounted for more than half of the variation in the observations beyond that attributable to sex of participant.

Table 3. Effect of sex of participant on attitudes toward cute stimuli in the twelve studies included in Study Set 1.

Study	Date	N	Women		Men		*t*	*p*	*d*
			Mean	SD	Mean	SD			
A_pad	8/4/18	200	5.71	1.14	5.48	0.97	1.50	.135	.21
B_kama	5/11/18	202	5.82	1.11	5.49	0.94	2.28	.024	.32
C_nurt	6/2/18	140	5.74	1.08	5.50	0.81	1.49	.140	.26
D_time	8/5/18	199	5.64	1.13	5.42	1.00	1.39	.166	.20
E_reg	6/9/18	201	5.90	0.94	5.60	0.96	4.65	.030	.31
F_risc	8/28/18	181	5.77	1.33	5.48	1.05	1.56	.160	.25
G_selfeff	5/16/18	197	5.83	1.03	5.37	1.01	3.11	.002	.45
H_const	8/12/18	194	5.76	1.02	5.19	1.18	3.51	< .001	.53
I_lone	6/2/18	120	6.16	0.78	5.77	0.77	2.69	.008	.50
J_main1	5/8/18	200	5.91	0.98	5.58	1.06	5.16	.022	.33
K_main2	6/27/18	198	6.14	0.89	5.66	0.91	3.77	< .001	.54
L_sing	9/8/18	161	5.89	0.97	5.58	0.96	2.04	.042	.32

TOTAL		**2193**	**5.84**	**1.05**	**5.51**	**.99**		**.33**

Discussion. The aim of this set of studies was to better understand whether there is a robust sex difference in attitudes toward cuteness. In support of **H1**, I found evidence of a sex difference in the attitudes toward cute stimuli, such that women expressed more favorable attitudes toward images of cute animals than did men. However, the sex difference is moderate, not extreme, as implied by marketers of cute products that target women exclusively, to the loss of potentially interested male customers.

I did not see evidence that the sex difference in attitudes toward cute animals was larger for cuter animals (i.e., no interaction between cuteness level and sex of participant). It is possible this occurred because the images of the low cute animals were still perceived to be quite cute – (> 5 on a 7-point scale). Thus, even though taken directly from prior literature (Sherman et al. 2009; 2013), this is one of the weaker manipulations of cuteness in my package of experiments. Accordingly, In later studies, I introduce a wider variety of cute stimuli, including less cute stimuli and the domain of cute products (see Appendices).

To my surprise, there was considerable heterogeneity across studies. I conducted these twelve studies to explore effects of priming cuteness on subsequent behavior; to do so, I kept the priming task consistent across studies while the measure of subsequent behavior changed. Thus, I expected the effect of sex, which was also measured in the same manner across studies, to have the same relationship to attitudes toward cuteness across my twelve studies. These studies were conducted on MTurk in 2018, before the option of selecting 'approved participants' and other handy screening tools were available, so it is possible that the heterogeneity observed here is partially due to the inattention of a certain amount of

participants in each study (e.g., selecting '7' for all measures of all images; see Chmielewski and Kucker 2019 for discussion of MTurk data quality over time). If this type of noise was not uniform across studies, then I would expect it to have differential influence on the results of each study.

The uniform procedures across the studies included in this meta-analysis allowed for a relatively precise estimate of the effect of sex on attitudes toward cute stimuli, but also restrict conclusions to one type of cute stimuli – cute animals. A key goal of this research is to test whether factors which predict evaluations of traditional cute stimuli also predict evaluations of cute products. Thus, in Study Set 2, I include cute products in my stimuli. In my next set of studies, I test **H3** concerning the role of gender identity in attitudes toward cuteness.

STUDY SET 2: FEMININITY AND MASCULINITY HAVE OPPOSITE RELATIONS TO ATTITUDES TOWARD CUTENESS

The aim of the second set of studies was to provide a robust assessment of the relation between gender identity and attitudes toward cuteness. Whereas *sex* is a *biological* variable relating to the physical differences between women and men across cultures, *gender identity* is best understood as a social construct representing an consumer's sense of how they relate to concepts of gender in their culture. These two constructs are fundamentally related as they represent different aspects of one's gender (physical properties, socially desirable attributes), yet distinct in that they do not always move together (i.e., many people see themselves as highly feminine men or highly masculine women). It is for the latter reason that both should be considered to obtain a fuller, richer, picture of the relation of gender to cuteness.

Consumers strive to be seen by others in the same way they see themselves, so if a consumer relates to characteristics associated with women, they would want to be recognized as feminine. If consuming cuteness is perceived as a feminine behavior, as I have proposed, then there are different consequences for how individuals who identify as feminine and those who identify as masculine will approach cute stimuli. Individuals with a high (vs. low) feminine identity would perceive liking cuteness as compatible with their gender identity, and thus be more likely to express a positive attitude toward a cute stimulus, whereas individuals with a high (vs. low) masculine identity would feel liking cuteness is incompatible with their gender identity, and express a less positive attitude (**H3**). This is the hypothesis I test in Study Set 2.

To capture individual differences in self-report gender identity, I used two measures that have been identified in prior research. The most well-established measures of gender identity ask participants to consider how well a set of stereotypically feminine traits and stereotypically masculine traits describes them (e.g., BSRI, PAQ); I will refer to this type of measure as a 'trait' measure of gender identity (Bem 1981; Donnelly and Twenge 2016; Holt and Ellis 1998). Accordingly, I used one such measure (BSRI) in four studies of Study Set 2 to assess participants' gender identity. To increase the external validity of this study set, I used a second measure of gender identity in the last two studies. This second measure asked participants directly "In your own opinion, how feminine are you?" and "In your own opinion, how masculine are you?" in order to assess much they identify with the category of women and the category of men; I will refer to this type of measure as a 'direct' measure of gender identity (Brough et al 2016; Gallagher and Bodenhausen 2020; Wilkie and Bodenhausen 2018). If, as expected, both measures capture an individual's sense of their own gender identity, then these two measures should be highly correlated.

In order to capture participants' attitudes toward cuteness, I developed a product choice task, in which participants choose between a high cute option and a low cute option of a product (e.g., keychain, mug, water bottle), as well as several iterations of an image evaluation task. In the latter, participants sequentially evaluated a series of images containing both high cute stimuli (e.g., baby animals, infants, mug with baby animal print) and low cute (control) stimuli (e.g., adult animals, nature, mug with adult animal print) in a randomized order. The dependent variable was how cute they rated the high cute stimuli.

We hypothesized that the compatibility of expressing positive attitudes toward cute stimuli with maintaining a feminine identity would lead to a positive relation between self-perceptions of femininity and attitudes toward cute stimuli (**H3**). I did not expect this effect to be moderated by gender, such that self-perceptions of femininity predict attitudes toward cute stimuli for both men and women. Nonetheless, I report both the overall effect and the effect for male and female participants separately.

Study Set 2 is composed of six studies that were conducted to test hypotheses that are not relevant to the present theoretical focus. However, all of the studies in this set featured measures of both gender identity and attitudes toward cuteness. This allowed us to conduct a meta-analysis to more precisely estimate the size of the relation between femininity and attitudes toward cuteness among this study set. Data sets were included that met the following inclusion criteria: 1) femininity of participants was measured, 2) attitudes toward cute stimuli was measured. This resulted in the inclusion of six studies. Data were collected between July 2018 – June 2019. As I will demonstrate, the size of the correlation between self-perceptions of femininity and attitudes toward cuteness varies in magnitude, but not direction, across the six studies (see Table 4).

Participants. A total of 1,865 adults (M_{age} = 36.1, 804 females) based in the U.S. participated in the four studies included in the meta–analysis. All participants were recruited from MTurk and compensated between $0.65-80 for their time. I excluded three participants who selected "non-binary" to represent their gender for a final sample of 1,862 participants.

Gender identity. Gender identity was assessed in two ways. The first used a standard self-report scale (BSRI; see Appendix D) which involves asking participants to indicate how well a set of stereotypically feminine traits and a set of stereotypically masculine traits describe them on a seven-point scale (1 = not at all, 7 = extremely). The order of all traits was randomized. The second measure of gender identity used a single-item, direct, measure of femininity and of masculinity ("In your own opinion, how [feminine/masculine] are you?" (1 = not at all, 7 = extremely). The single-item indicators of masculinity and femininity were strongly negatively correlated ($r > .70$), suggesting that participants think of gender identity as a single continuum with masculinity and femininity at opposite poles.

Attitudes toward cuteness. The dependent variable was operationalized using an image evaluation task and a product choice task. In the image evaluation task, participants were asked to indicate how much they like a series of images of cute animals, infants, or products (1 = not at all, 7 = extremely); their responses are then averaged to create a composite measure of attitudes toward cute stimuli ($\alpha s < 0.80$). Control images of less cute animals (e.g., adult animals) and products were included to mask the purpose of the study (see appendix B for cute and control stimuli); only evaluations of the cute stimuli were used to measure participants' attitudes toward cuteness. In the product choice task, participants evaluated six pairs of products (e.g., keychain, mug, laptop sticker) which contained a high cute option and a low cute option. Each pair of products was pretested to ensure they differed

in perceived cuteness but not perceived femininity (see appendix C). The number of high cute options chosen served as the dependent variable.

Procedure. The core elements to all studies were as follows: participants complete a measure of gender identity, evaluate a set of cute stimuli, and provide demographic information. In study 2a only, the order was reversed, such that participants evaluated the cute stimuli before completing the measure of gender identity. For demographic information, participants were asked to type in their age and indicate their sex by selecting one option among the following set: male, female, non-binary.

Results

I combined the data from the six studies included and standardized all variables prior to analysis. I included the following factors to describe differences in the methodology between studies: 1) which measure of gender identity was used (see Table 3, column 3), 2) which measure of attitudes toward cuteness was used (see Table 3, column 4). I examine how these factors influenced the relation between gender identity and attitudes toward cuteness at the end of the results section.

It is important to note that the correlation between two components of gender identity, femininity and masculinity, was significant and negative (B = -.36, *S.E.* = .02, t(2,159) = -16.87, $p < .001$). However, this finding masks diversity between measures of gender identity: for the direct measure, this correlation was significant and negative (B = -.77, *S.E.* = .02, t(996) = -34.13, $p < .001$), whereas for the trait measure, this correlation was significant but positive (B = .07, *S.E.* = .04, t(862) = 1.97, p = .049). It is important to note that the direct measure of gender identity thus better captures the lay view that gender identity is unidimensional, whereas the trait measure captures the academic view that gender identity is

composed of two independent, but correlated, dimensions (due to overlapping attributes around the construct of 'competence'; see study discussion) .

Femininity. Table 4 shows the correlation between femininity and attitudes toward cute stimuli (both standardized) in each study. I ran a hierarchical linear regression on attitudes toward cute stimuli with *a)* femininity and *b*) masculinity, as the fixed factor, respectively; study was included as a random factor in all models. In support of H3, femininity was a significant predictor of attitudes toward cuteness in Study Set 2 (B = .30, $S.E.$ = .02, $t(1,860) = 13.63$, $p < .001$, $\omega^2_p = .09$ [95% C.I. = 0.07-0.12]). Femininity was a significant predictor of attitudes toward cuteness when looking only at studies using the *trait* measure (B = .37, $S.E.$ = .05, $t(287) = 6.87$, $p < .001$, $\omega^2_p = .14$ [95% C.I. = 0.07-0.21]), as well as studies using the *direct* measure (B = .29, $S.E.$ = .02, $t(1,567) = 11.89$, $p < .001$, ω^2_p = .08 [95% C.I. = 0.06-0.11]).

Table 4. Pearson's correlation (*r*) between self-perceptions of femininity (IV1) and attitudes toward cuteness (DV) in six studies in Study Set 2.

Study	N	IV	DV	*r*	*p*	95% C.I.
A	92	trait	attitude toward cute animals	0.40	< .001	0.22-0.56
B	90	trait	attitude toward cute animals	0.51	< .001	0.34-0.65
C	109	trait	attitude toward cute animals	0.24	.03	0.05-0.41
D	573	trait	attitude toward cute animals, babies	0.38	<.001	0.31-0.45
E	499	direct	choice of cute products	0.22	<.001	0.13-0.30
F	499	direct	attitude toward cute animals, babies, products	0.24	<.001	0.15-0.32

Masculinity. Table 5 shows the correlation between femininity and attitudes toward cute stimuli in each study. In support of H3, masculinity was a significant predictor of attitudes toward cuteness in Study Set 2 (B = -.11, *S.E.* = .02, $t(1,860) = -4.91$, $p < .001$, ω^2_p = .01 [95% C.I. = 0.00-0.02]). Masculinity was not a significant predictor of attitudes toward cuteness when looking only at studies using the *trait* measure (B = -.01, *S.E.* = .06, $t(287) = -.22$, $p = .825$, $\omega^2_p = .00$ [95% C.I. = 0.00-0.00]), in contrast to studies using the *direct* measure (B = -.13, *S.E.* = .02, $t(1,567) = -5.25$, $p < .001$, $\omega^2_p = .02$ [95% C.I. = 0.01-0.03]). Note this relationship is smaller in magnitude and emerged less consistently than that of femininity and attitudes toward cute stimuli.

Table 5. Pearson's correlation (*r*) between self-perceptions of masculinity (IV2) and attitudes toward cuteness (DV) in six studies in Study Set 2.

Study	N	IV	DV	*r*	*p*	95% C.I.
A	92	trait	attitude toward cute animals	0.06	.561	-0.14 – 0.26
B	90	trait	attitude toward cute animals	-0.05	.611	-0.26 – 0.15
C	109	trait	attitude toward cute animals	-0.04	.665	-0.22 – 0.15
D	573	trait	attitude toward cute animals, babies	-0.03	.644	-0.1 – 0.05
E	499	direct	choice of cute products	-0.27	.001	-0.35 – -0.19
F	499	direct	attitude toward cute animals, babies, products	-0.11	.014	-0.19 – -0.02

Moderation by participant sex. I tested for moderation by sex on this correlation running two hierarchical linear regressions on attitudes toward cuteness with femininity (masculinity) and sex as fixed factors, and study as a random factor. The interaction between

femininity (masculinity) and sex on attitudes toward cuteness was not significant in either model (femininity: B = -.03, *S.E.* = .04, t(1,858) = -.69, p = .488; masculinity: B =.08, *S.E.* = .05, t(1,858) = 1.61, p = .107), suggesting that a positive relationship between femininity and attitudes toward cuteness exists for both women (B = .27, *S.E.* = .04, t(802) = 6.76, p < .001) and men (B = .27, *S.E.* = .03, t(1,056) = 8.14, p < .001) (see Table 6).

Table 6. Pearson's correlations between self-perceived femininity and attitudes toward cuteness in Study Set 2, organized by sex.

	Women				Men			
Study	**N**	***r***	***p***	**95% C.I.**	**N**	***r***	***p***	**95% C.I.**
A	48	0.24	.102	-0.05-0.50	44	0.52	<.001	0.27-0.71
B	40	0.42	.007	0.13-0.65	50	0.59	<.001	0.37-0.75
C	51	0.28	.045	0.01-0.52	58	0.18	.170	-0.08-0.42
D	243	0.35	<.001	0.23-0.45	330	0.35	<.001	0.26-0.45
E	219	0.02	.745	-0.11-0.16	280	0.13	.030	0.01-0.24
F	203	0.36	<.001	0.15-0.32	296	0.12	.036	0.01-0.23

A slightly different pattern emerged for masculinity, such that masculinity and attitudes toward cuteness showed the expected negative relationship amongst women (B = -.07, *S.E.* = .04, t(802) = -1.98, p = .048), but this relationship was non-significant for men (B = .01, *S.E.* = .04, t(1,056) = .30, p = .765). When I examined the latter relationship (masculinity and attitudes toward cuteness amongst men) amongst the studies using the trait measure of gender identity, this relationship was non-significant with a positive beta (B = .02, *S.E.* = .05, t(480) = .51, p = .601), whereas amongst the studies using the direct measure of

gender identity, this relationship was non-significant with a negative beta (B = -.03, *S.E.* = .04, $t(574) = -.74$, $p = .459$). It is possible these two small directional effects cancelled each other out when I ran the same regression amongst men in all studies included in the set. In sum, femininity had a more consistent relation with attitudes toward cuteness among women and men than did masculinity.

Sex and gender identity. Lastly, I also examined whether 1) the effect of sex on attitudes toward cuteness was significant in this dataset, and 2) this effect became non-significant when controlling for *either* component of gender identity. Given the significant negative correlation between the two aspects of gender identity, femininity and masculinity, I did not add both as predictors in the same regression to avoid issues of multicollinearity. Instead, I ran two separate hierarchical linear regressions on attitudes toward cuteness with *a*) sex and femininity as predictors, *b*) sex and masculinity as predictors.

As in Study Set 1, I ran a hierarchical linear regression with attitudes toward cuteness as the outcome variable, sex of participant as a fixed factor, and study specified as a random factor: replicating the results of Study Set 1, women expressed more positive attitudes toward cuteness than did men (B = -.40, SE = .05, $t(1,860) = -8.75$, $p < .001$, $\omega^2_p = .04$ [95% C.I. = 0.02-0.06]).

Controlling for femininity, the effect of sex was still significant (B = -.13, *S.E.* = .02, $t(1,859) = -2.64$, $p = .008$); the same was true when controlling for masculinity (B = -.37, *S.E.* = .05, $t(1,859) = -7.28$, $p < .001$), suggesting that either dimension of gender identity alone fully accounts for sex differences in attitudes toward cuteness. Of note, the effect of sex on attitudes toward cuteness was smaller when controlling for femininity (vs. masculinity): in the former case, femininity was still a significant predictor (B = .27, *S.E.* = .02, $t(1,859)$ =

10.59, $p < .001$) when sex was included in the regression – it was actually a stronger predictor than sex – whereas masculinity became non-significant ($B = -.03$, $S.E. = .02$, $t(1,859) = -1.14$, $p = .254$) when sex was included.

In sum, although neither dimension of gender identity fully replaces the effect of sex on attitudes toward cuteness, it appears that femininity plays a larger role in explaining variation in attitudes toward cuteness than does masculinity. This pattern of results supports my theory that it is the strong connection between cuteness and femininity which drives individual differences in preferences for cuteness.

Discussion. The aim of Study Set 2 was to document the relation between gender identity and attitudes toward cuteness. In support of H3, self-reports of femininity were positively related to attitudes toward cute stimuli for both male and female participants. In partial support for H3, masculinity was negatively related to attitudes toward cuteness across the whole sample, but when I examined women's and men's responses separately, only women showed the expected negative relation of masculinity to attitudes toward cuteness. This is a puzzle that awaits future research examining men's responses to a greater variety of cute stimuli, ideally in more realistic situations which capture *where* they encounter cuteness.

By showing that femininity was a significant predictor of both cute product choice and attitudes toward a range of cute stimuli (animals, babies, and products), this is the first work to demonstrate the relation between gender identity and cute product evaluation specifically. By demonstrating the positive pull that femininity exerts on preferences for cuteness, as well as the negative push that masculinity exerts, I identify two individual difference factors, which together comprise the construct of gender identity and which influence evaluations of cute products.

The convergence of multiple operationalizations of gender identity and of cute stimuli adds confidence to my understanding of how gender identity relates to attitudes toward cuteness. The effect of femininity was consistent whether I used a single-item measure of femininity (How feminine are you?) or the traditional, 10+ item, trait scale (BSRI). Although my single-item measure of masculinity (How masculine are you?) did not show similar results as the traditional trait scale – only the single-item measure predicted cute product attitudes – I consider this likely due to the well-known limitations of the trait scale of masculinity (see Blanchard-Fields, Suhrer-Roussel and Hertzog 1994; Choi and Fuqua 2003; Choi, Fuqua, and Newman 2007) and not indicative that this effect was an artifact of using a particular one-item scale.

Further, the negative correlation between self-reported femininity and masculinity on the direct measure fits with evidence that individuals still view feminine and masculine as opposing ends of a single dimension (e.g., Bosson and Michniewicz 2013; see Lieven et al. 2014 for discussion), despite the change in gender relations over the last century as more women occupy traditionally masculine roles. In the next studies, I continue to use the direct measure of gender identity rather than the trait measure (BSRI) given the former's brevity, consistent negative correlation between the aspects of femininity and masculinity (i.e., capturing participants' belief in a unidimensional notion of gender identity), and the latter's inconsistent internal structure (specifically, in the masculinity subscale).

In Part I, I documented the predictive power of gender identity in understanding attitudes toward cuteness. I argue sex differences in cute consumption may be better understood as a reaction to cute consumption being perceived as feminine, a result of the shared traits, attitudes, and behaviors among these two concepts (e.g., positive emotional expression, caregiving motivation, small, fragile, pink). Specifically, I leverage prior research

on men's gender identity maintenance to predict that male (vs. female) consumers are less likely to engage in cute consumption in order to limit their perceived femininity and protect their perceived masculinity.

Part II is composed of an individual study (Experiment 3) and set of studies (Experiment Set 4) that aim to document evidence of my proposed mechanism behind the relations observed in Study Sets 1 and 2: the cute-feminine stereotype. After reviewing the evidence for this stereotype, I then examine the consequences of product cuteness on a product's perceived femininity (*product femininity*) and the consumer/owner's perceived gender identity in Part III to further address the questions posed in this discussion.

EXPERIMENT 3: IMPLICIT ASSOCIATIONS BETWEEN CUTENESS AND GENDER

In this experiment, I begin testing my explanation that female (vs. male) consumers and consumers high in femininity (vs. low femininity) or low in masculinity (vs. high masculinity) express more positive attitudes toward cute stimuli due to a salient mental association between cuteness and femininity. Specifically, I argue there exists an accessible cute-feminine stereotype as a result of the numerous traits, attitudes, behaviors, and physical attributes associated with both of these two concepts (e.g., positive emotional expression, caregiving motivation, small, fragile, pink).

Experiment 3 attempts to document this stereotype through the use of an Implicit Association Test (IAT). In short, the IAT measures the relative strength of associations between categories (i.e., cute/non-cute and female/male). Participants categorize target stimuli (10 cute products and 10 bold products to represent the construct of *cuteness*; 7

female names and 7 male names to represent the construct of *gender*) with the applicable label (*Cute* or *Bold* for products; *Male* or *Female* for names). I originally desired to use 'non-cute' as the opposing label to 'cute'. However, this term includes a negation and is thus more difficult (and time consuming) to process. For this reason, this term would not work well as a label in an IAT, which uses differences in response latencies to compute a score indicating the strength of a mental association. Bold was considered to be the best word that captured the opposite of cute because bold highlights assertiveness and confidence, which directly contrasts to the sweet, friendly, and vulnerable nature of cute entities, and it can also be used to describe an aesthetic, like cute.

In the IAT, participants complete an equal number of '*matching'* blocks (i.e., where the labels Cute and Female are presented in the same corner of the screen and thus participants use the same keystroke to categorize target products as Cute and target names as Female) and '*mismatching'* blocks (i.e., where the labels Cute and Male are presented in the same corner of the screen and thus participants use the same keystroke to categorize target products as Cute and target names as Male) so that a difference score (*IAT D-score*) may be computed. The D-score reflects the difference in mean response latencies between these matching and mismatching blocks, divided by their pooled standard deviation.

Based on **H2a**, I predicted that participants' IAT D-scores would be positive and significantly different from 0, suggesting a stronger association between female-cute/male-bold than male-cute/female-bold. Further, I expected that this would not be moderated by participant sex (i.e., both women and men would show an implicit association between cute and female).

Participants. 201 participants were recruited from the SONA pool at the Kellogg Behavioral Lab. Participants were excluded if they 1) did not finish the survey or IAT (N = 6), 2) did not consent to participate in the survey and thus also did not complete the survey or IAT (N = 3), 3) indicated their gender as non-binary (N = 4), 4) at least 10% of responses were < 300 ms (N = 1). This last criterion is based on the recommendations by Greenwald, Nosek, and Banaji (2003) and is standard practice in recent psychological research using the IAT (Brough et al. 2016; Hahn and Gawronski 2019). This resulted in 187 valid participants (120 females, M_{age} = 22.1).

Materials. An Implicit Association Test (IAT; Greenwald et al. 2003) was used to capture implicit association between gender and cuteness of products. Participants completed seven blocks of trials, with each block consisting of 20 trials. The first two blocks were practice trials, followed by the two matching blocks, one more practice block, and lastly, the two mismatching blocks, for a total of seven blocks. The order of matching and mismatching blocks was counterbalanced across participants.

In each trial, participants saw a *target* in the center of the screen (either female/male names, to represent the construct of gender, or cute/bold products, to represent the construct of cuteness) and were instructed to categorize the target by indicating which *label* best fit the target: ‘Male’ or ‘Female’ for names, ‘Cute’ or ‘Bold’, for products (see Appendix E). Labels were in the right and upper left hand corners and participants clicked the associated key (E or I) in order to indicate which label fit the target (e.g., an accurate answer for ‘Emily’ as target would be to click the key for the label ‘Female’).

In the first two practice blocks, participants accommodate to the IAT's procedure: i.e., they practice categorizing targets with labels (names as Female/Male and products as Cute/Bold). The next two blocks were key testing blocks which test the association between gender and cuteness: for half of participants, these were the two matching blocks, whereas for the other half of participants, these were the two mismatching blocks. In the matching blocks, participants categorized target products as 'Cute' by pressing the key to indicate the upper left corner, or as 'Bold' by pressing the key to indicate the upper right corner; the same procedure occurred for target names ('Female' in the upper left corner, 'Male' in the upper right corner). These are called matching blocks because the labels cute and female are both in the upper left corner on the screen (i.e., paired). In contrast, in the two *mismatched blocks*, 'Cute' and 'Male' occupy the upper left corner and 'Bold' and 'Female' occupy the upper right corner, i.e., the opposite pairings from the matched blocks.

All participants complete a third practice block in between the first set of testing blocks (e.g., mismatching blocks) and the second set of testing blocks (e.g., matching blocks) in order to orient to the fact that the labels have switched sides (i.e., if they had just seen Female and Cute in the same corner (paired), then Male and Cute would appear in the same corner in the next blocks).

Procedure. Upon entering the lab, participants provided informed consent and provided demographic information – as well as completing the single item measure of gender identity – before being directed to the IAT. After completing the IAT, participants were paid and exited the lab.

Results. To capture the implicit association between cuteness and gender, I calculated an IAT D-score for each participant using the improved scoring algorithm introduced by Greenwald et al. (2003). The D-score is computed by taking the difference in mean latencies in response time (specifically, how long it took to enter the correct response – i.e., the 'final' response) between the matched and the mismatched blocks, then dividing this number by the pooled standard deviation. A positive score reflects a stronger association between female-cute/male-bold than male-cute/female-bold. I predicted that participants' IAT D-scores would be positive and significantly different from 0 (**H2a**), and this association would not be moderated by participant sex (i.e., both women and men would show an implicit association between female and cute).

In support of **H2a**, the mean IAT D-score was 0.57, which is significantly different from 0 ($t(186) = 24.22$, $p < .001$), indicating that participants demonstrated a stronger mental association between the concepts of female-cute and male-bold than between the concepts of male-cute and female-bold (i.e., they responded faster on the former than the latter). As expected, there was no difference in IAT D-score by participant sex ($t(185) = -1.50$, $p = .135$), suggesting that both women and men exhibit this stronger association with female-cute than male-cute.

Discussion. In support of H2a, participants exhibited a stronger mental association between the concepts of cute (bold) and female (male) than the opposite pairings. Specifically, participants were faster to accurately categorize cute (bold) products and female (male) names when the label cute was paired with (in the same upper corner as) the label female and the label bold was paired with the label male, than when cute and male occupied the same corner and bold and female occupied the opposite corner. For comparison, the IAT-

D score from Brough et al. (2016; Study 1), which approximated the mental association between femininity and "greenness" (i.e., environmentally-friendly) was .23, such that participants showed a positive association between the concepts of femininity and greenness. Similarly, the IAT-D score from Speillman et al. (2021), which examined the relation between masculine/neutral brands and positive/negative words was .19, such that participants exhibited a stronger association between masculine brands and positive words than negative words. In contrast, the IAT-D score from this study was over twice the size of these estimates.

However, due to the design of the IAT, I am not able to assert whether participants D-scores suggest a stronger association specifically between the concepts of cute-female (vs. cute-male) or between the concepts of bold-male (vs. bold-female; Nosek, Greenwald, and Banaji 2005). Upon examination of the exact products used as bold stimuli (see Appendix E for full set, or Figure 1 for sample), one will notice these are not particularly bold products – in fact, they were chosen to be low cute versions of the cute stimuli, and thus are unlikely to carry strong associations of boldness. For this reason, I consider the more probable interpretation to be that participants exhibited a positive D-score primarily because the association between 'cute' and 'female' is significantly more accessible than the association between 'cute' and 'male' – as a result of the cute-feminine stereotype – rather than because the association between 'bold' and 'male' is significantly more accessible than 'bold' and 'female', in this context.

Figure 1. Example of 'cute' and 'bold' product stimuli used in Experiment 3.

Cute	Bold
	
	
	
	

Further studies should consider the influence of altering the opposing label for cute to another adjective besides bold, which may carry some masculine connotations, in order to ensure that the control label is not perceived as masculine and thus naturally fitting with the label of male. Although a gender-neutral label would be preferable, such a term is difficult to find – our language is incredibly gendered (Bem 1983). Further studies should also consider varying the difference in level of cuteness between the cute product stimuli and the control product stimuli, in order to test if the size of this effect (i.e., the magnitude of the positive D-score) is altered. I would expect that as one departs from any resemblance of cuteness (e.g., coolness) – while maintaining comparable levels of attributes like product category, quality,

anthropomorphism, etc. – this effect would get stronger, unless the opposing category was just as strongly associated with femininity as cuteness (e.g., elegance).

Experiment 3 provides initial evidence for the cute-feminine stereotype by showing that there is an implicit association between cute stimuli and the category 'female' (i.e., femininity). However, I have yet to see if the cute-feminine stereotype has a similar influence on *explicit* predictions of *who* is more likely to appreciate and buy cute products. In other words, does this implicitly held stereotype come through in predictions regarding the sex of consumers of cuteness? Do consumers really think that "cuteness is for girls" and apply this stereotype in predicting which sex likes and buys cute products? Experiment Set 4 was designed to address these questions.

EXPERIMENT SET 4: CONSUMERS PREDICT WOMEN WILL LIKE AND BUY CUTE PRODUCTS MORE THAN WILL MEN

Experiment Set 4 aims to test whether the cute-feminine stereotype, documented implicitly in Experiment 3, impact *explicit* predictions of the likely consumers of cute products. Specifically, in the present experiment set, I use two paradigms to test for converging evidence that individuals will predict that women (vs. men) prefer and are the primary consumers of cuteness (**H2b**).

Accordingly, participants evaluated a set of three high or low cute products and indicated how much they thought women and men would like each product (Experiment 4a) or how likely they would be to buy the product (Experiment 4b). I manipulated whether the

products evaluated were high or low in cuteness in order to demonstrate that sex differences in predicted product liking emerge only *if* the products are sufficiently cute. Thus, participants were randomly assigned to view three high (low) cute products in the *high cute condition* (*low cute condition*), which were pretested to differ in perceived cuteness (see 'Manipulation').

In Experiment 4a, I collected a measure of predicted product liking for *women* and a measure of predicted liking for *men* in separate trials to avoid comparison effects (i.e., widening the gap in predicted liking for women (vs. men) to make your answers seem more different). For the same reason, participants did not first predict how much one sex (e.g., women) would like each of the three products before then evaluating the same products again and making predictions for the other sex (e.g., men). The model was 2 (sex of target: female, male) x 3 (product: bag, mug, phone) within-subject factorial; stimuli were presented in a fully randomized order.

In Experiment 4a, I chose to manipulate sex of target within-subjects, rather than between-subjects, in order to obtain a direct comparison of predicted liking of cute products for women and for men for each participant. In contrast, Experiment 4b forced subjects to choose which group, women or men, would be more likely to buy each product by indicating predicted product liking on a bipolar scale with "women" and "men" at opposite endpoints, with "both equally" at the midpoint. Two methods of eliciting predicted product liking for high (vs. low) cute products were used because if the results from the two methods converge, it suggests that, even without the prompt to directly compare preferences of women and men for cuteness, participants naturally expect there to exist a wide sex difference in cute product preferences.

I chose to use a repeated measures design in both experiments, such that participants evaluated three products rather than a single product, to reduce the influence of spurious attributes about that product influencing participants' judgments (i.e., if the product is perceived as particularly ugly, then participants might predict everyone, regardless of age or sex, would dislike it as much as possible). For this reason, product is used as a random factor in the hierarchical regressions I run to analyze the effect of product cuteness and sex of target on predicted product liking.

I predicted that, due to the cute feminine-stereotype, participants would expect women to like more, and be more likely to buy, the high cute products than would men (**H2b**). Note that, given the small sex difference observed in preferences for cute stimuli in Study Sets 1 and 2, a relatively accurate prediction from participants would be that women indeed would like and be more likely to buy cute products than would men, but this difference would be small (e.g., for independent measures of liking, an effect size of ω^2_p = .02). However, if participants apply the cute-feminine stereotype, caused partially by greater consumption of cute products by women (vs. men), but strengthened and maintained by the shared perceptual and visual associations of cuteness and of femininity, they may overestimate the size of the sex difference in predicted liking for cute products due to the strength of the association between cuteness and women compared to the association between cuteness and men/masculinity. Thus, I also report the effect sizes of any sex differences that emerge in predicted liking and consumption of cute products to better compare lay perceptions of sex differences in attitudes toward cuteness and cute consumption with those I have approximated in this work (Study Sets 1 and 2).

Participants and design. 394 U.S. adults (M_{age} = 39.9, 171 females) and 405 U.S. adults (M_{age} = 40.2, 213 females) were recruited to participate in Experiment 4a and 4b, respectively. All participants were recruited from MTurk in exchange for monetary compensation between $0.40-$0.45 and had identified themselves to MTurk as residing in the United States. I excluded participants who did not finish the survey or who selected "non-binary" to represent their gender (4a: N = 2, 4b: N = 3) for a final sample of 791 participants (M_{age} = 40.1, 384 females).

For Experiment 4a, I utilized a *product cuteness* (high, low) x *sex of target (*female, male) x *product category* (bag, mug, phone) mixed design. The first factor was between-subjects, such that participants evaluated either high cute or low cute products. The second and third factors were within-subjects, such that participants indicated how much they thought women would like three products and how much they thought men would like the same three products, in a fully randomized order.

Manipulation. In both experiments, participants were randomly assigned to see either three high cute or three low cute products. The three product categories were an animal shopping bag, an animal mug, and an anthropomorphic phone case, which were chosen because they are commonly owned, familiar and inexpensive products that are not more likely to be used by women or men (i.e., nail polish would be a poor product category choice because of the much greater usage by women than by men). The low cute and high cute versions of each product (e.g., high cute bag and low cute bag) were drawn from a larger population of cute products that I pretested to be high or low in perceived cuteness (see Appendix X. Table of All Stimuli). Specifically, the products used in Experiment Set 4 (Product code = PR3) are a sample of two product sets: PR1 (used in Study Set 1) and PR2 (used in Experiment Set 5).

Dependent variable. In Experiment 4a, the dependent variable was how much participants thought the target group would like the products. Predicted product liking was measured by asking participants to indicate "How much would [insert target group] like this product?" using a 100 point scale (0 = dislike a lot, 100 = like a lot). The target group was either women or men, and participants made separate ratings for each group. Rather than averaging predicted product liking ratings across the three different products, I included product (bag, mug, phone) as a random factor in a hierarchical linear model in order to control for differences in the average predicted liking of each individual product and more accurately estimate the size of the effect of each independent variable and their interaction on predicted product liking.

Thus far, the procedure of experiments 4a and 4b are very similar. The key difference lies in how the dependent variable was measured. In Experiment 4b, participants predicted who would be more likely to buy each product using a 20-point bipolar scale, (-10 = women, 0 = both equally, 10 = men). Thus, Experiment 4b forced participants to directly compare women's and men's attitudes toward cuteness, whereas the design of Experiment 4a allowed participants to make separate judgments of women's liking of each product and men's liking of each product (i.e., sex of target was manipulated within-subject and fully crossed with product). Thus, the dependent variable may be more accurately described as predicted product *buying* in Experiment 4b, rather than predicted product *liking* in Experiment 4a; however, I consider both these measures of the same construct, predicted product attitudes.

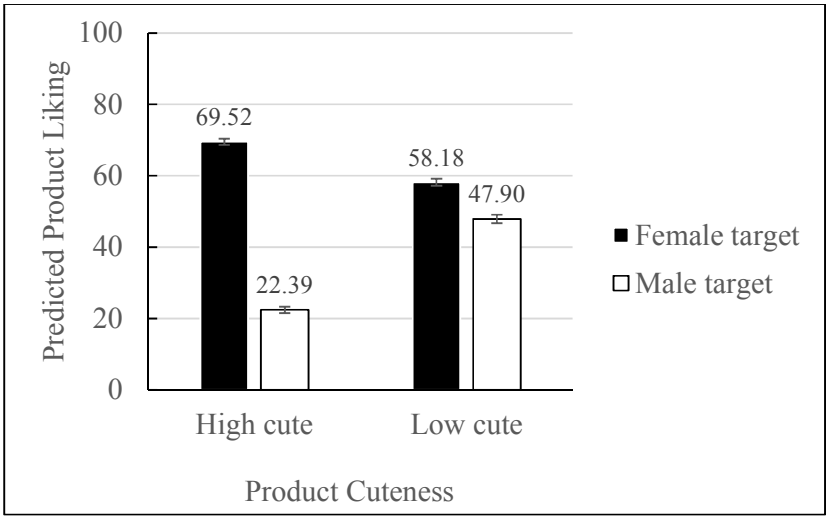
Results

For both experiments, I ran a hierarchical linear regression with predicted product liking as the outcome variable; product cuteness (-1 = low cute, +1 = high cute) as fixed

factor; and product (bag, mug, phone) as a random factor. In Experiment 4a only, sex of target (-1 = female, +1 = male) and its interaction with product cuteness were included as fixed factors.

Experiment 4a. In support of **H2b**, the predicted interaction between product cuteness and sex of target was significant (B = -36.99, *S.E.* = 1.93, t(2,342) = -19.16, p < .001; see figure 2). Although participants predicted that women would like *all* products more than would men (see below), this sex difference in predicted product liking was significantly greater for the high cute products (B = -47.26, *S.E.* = 1.24, t(1,156) = 38.20, p <.001, ω^2_p = .56 [95% C.I. = 0.45-0.59) than for the low cute products (B = -10.28, *S.E.* = 1.42, t(1,184) = 7.24, p <.001, ω^2_p = .04 [95% C.I. = 0.02-0.07). The random factor, product (bag, mug, phone), only explained 7% of remaining variance, with residual variance accounting for the other 93%.

Figure 2. Experiment 4a: Predicted product liking, organized by sex of target and product cuteness. Error bars represent ± 1 *S.E.*



Another way to express this difference is by examining the effect of product cuteness on female targets and on male targets separately. The effect of product cuteness on predicted product liking for *female targets* was positive and significant (B = 11.34, *S.E.* = 1.34, t(1,169) = 8.46, p <.001), whereas this effect for *male targets* was negative and significant (B = 25.65, *S.E.* = 1.37, t(1,171) = 18.72, p <.001). In other words, participants predicted women would like the high cute products more than they would like the low cute products, whereas the opposite was true when predicting men's product liking.

Main effects. The main effect of product cuteness (B = -7.19, *S.E.* = 1.19, t(2,344) = 6.03, p < .001) and sex of target (B = 28.56, *S.E.* = 1.05, t(2,344) = 27.25, p < .001) were both also significant. Participants predicted people would like the low cute products more (M = 53.03, *S.D.* = 15.33, N = 198) than the high cute products (M = 45.85, *S.D.* = 16.57, N = 194); the size and direct of this effect were similar for both female and male targets. Although I did not predict this main effect of product cuteness, it is logical due to the more conventional aesthetic of the low (vs. high) cute products – low cute products are closer to the typical, common, version of the product, which is most frequently bought.

Participants also predicted that women would like all the products more (M = 63.74, *S.D.* = 23.83) than would men (M = 35.19, *S.D.* = 27.85), which is compatible with predictions from social role theory (i.e., if women (vs. men) do more of the shopping for the household, they are more likely to be perceived as liking shopping in general more than do men). Table 8 contains predicted product liking organized by product, for product level results.

Table 8. Experiment 4a: Average predicted product liking, organized by sex of target, product cuteness, and product.

IV	Level	Product			
		Shopping Bag	Mug	Phone case	**Overall**
Product Cuteness	Low cute	41.54	66.27	51.31	53.04
	High cute	44.80	45.50	47.25	45.85
Sex of Target	Female	61.43	68.25	61.53	63.74
	Male	24.77	43.72	37.05	35.19
Interaction	Female, High	65.28	68.78	74.50	69.52
	Male, High	24.34	22.57	20.28	22.39
	Female, Low	57.65	67.78	49.11	58.18
	Male, Low	25.42	64.76	53.51	47.90

Notes: Last column provides overall means for each category, collapsing across the three products. Scores are from 0-100.

Moderation by participant sex. I also examined if sex of participant moderated the key interaction between product cuteness and sex of target on predicted product liking: when added to the hierarchical linear regression model described in the first line of the Results section, sex of participant was not a significant moderator (B = -3.49, *S.E.* = 3.92, t(2,335) = -.89, p = .374). Both the main effects and interaction of product cuteness and sex of target on predicted product liking emerged amongst both female and male participants. In fact, sex of participant did not significantly influence predicted product liking in general (B = .96, *S.E.* = 1.22, t(2,341) = .79, p = .431; women and men predicted the products were similarly likeable), nor did its interaction with product cuteness (B = -2.68, *S.E.* = 2.42, t(2,339) = -1.10, p = .270; women and men predicted similar levels of liking for high cute products and for low cute products).

However, there was a significant interaction between sex of participant and sex of target (B = 4.29, *S.E.* = 2.12, t(2,339) = 2.02, p = .043), such that male participants predicted

a larger sex difference in product liking (B = 30.41, *S.E.* = 1.32, t(1,351) = 23.02, $p < .001$) than did female participants (B = 26.11, *S.E.* = 1.70, t(986) = 15.36, $p < .001$), regardless of how cute the products were.

Experiment 4b. I first transformed the scores for predicted product buying to be more comparable to predicted product liking scores from experiment 4a by using the following procedure: I multiplied scores by -1 so that a positive number represented that women were more likely to purchase the products, whereas a negative number represented that men were more likely to purchase the products. A score of 0 still represented the belief that both sexes would be equally likely to buy the product. I then multiplied scores by 5 to transform the scale from 20 points (-10-10) to 100 points (-50-50), the size of the scale used in experiment 4a. Lastly, I added 50 points to each participant's score so that scores now ranged from 0-100, exactly as in Experiment 4a.

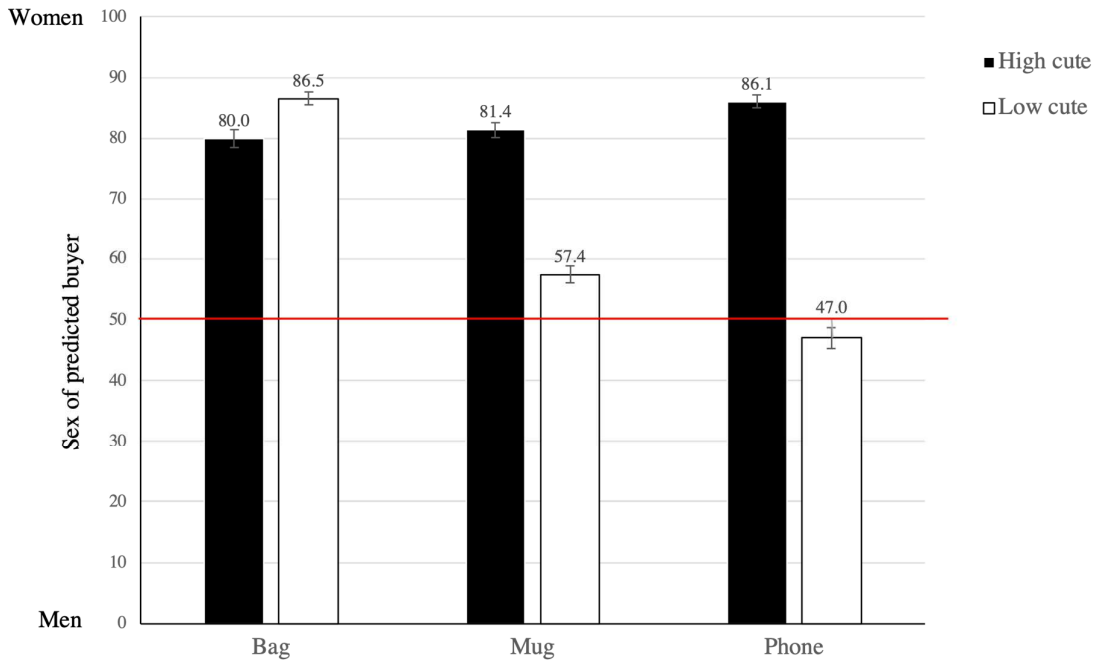
A score of 100 now indicates that women were definitely more likely to buy the products, whereas a score of 0 indicates that men were definitely more likely to buy the products, and a score of 50 indicates the belief that there is no sex difference in predicted purchasers of these products. To test whether participants predicted women would be more likely to buy the cute products than would men, I used a one-sided t-test to compare participants' scores on predicted product buying (0 = men more likely, 100 = women more likely) with scores generated by the null hypothesis (50 = women and men equally likely to buy the products). As predicted by H2b, predicted product buying was significantly greater than 50 (M = 73.09, *S.D.* = 24.24, t(1,196) = 32.95, $p < .001$), such that participants predicted women (vs. men) would be more likely to buy the products.

In other words, when asked to indicate who is most likely to buy a range of cute products (i.e., both high and low cute), participants were significantly more likely to indicate

women (vs. men) as the likely purchasers. This is particularly notable given that participants were given the opportunity to indicate that there would be no sex difference in who would buy these products – instead, they chose to indicate women were much more likely to buy cute products than were men.

Main effect of product cuteness. I then tested if this effect was greater for high (vs. low) cute products by running a hierarchical linear regression with predicted product buying as the outcome variable, product cuteness (-1 = low cute, +1 = high cute) as a fixed factor, and product (bag, mug, phone) as a random factor. In support of H2b, the main of product cuteness was significant (M_{high} = 82.47, *S.D.* = 18.24, M_{low} = 63.67, *S.D.* = 25.83; *B* = 18.80, *S.E.* = 1.22, $t(1,193) = 15.37$, $p < .001$), such that participants predicted a larger sex difference in who buys high (vs. low) cute products. Figure 3 depicts the effect of product cuteness on predicted product buying by each product category. The three product categories did not show consistent effects of product cuteness on predicted product buying: the effect only emerged in two of three categories (mugs and phone cases, but not shopping bags). The lack of an effect of product cuteness on predictions of who would buy the high (vs. low) cute shopping bags appears to be due to a ceiling effect, i.e., participants thought women were very likely to be the purchaser of tiger shopping bags.

Figure 3. Experiment 4b: Sex of predicted product buyer organized by product cuteness and product category, with a red line added at the midpoint of the Y-axis (50) to indicate the score that would represent no predicted sex difference in predicted product buying. Error bars represent ±1 *S.E.*



Notes. Scores *above* the red line indicate participants predicted that *women* more likely to buy the product, scores *below* the red line indicate participants predicted that *men* more likely to buy the product.

Participant sex. I next tested if both female and male participants predicted that women would be the more likely buyers of cute products. I ran a hierarchical linear regression with predicted product buying as the outcome variable, sex of participant (-1 = female, +1 = male) as a fixed factor, and product (bag, mug, phone) as a random factor. The effect of participant sex was not significant (B = -1.93, *S.E.* = 1.34, t(1,193) = -1.44, p = .150), suggesting that both female and male participants stereotype women as the likely purchasers of cute products.

We then tested if sex of participant moderated the effects of product cuteness on predicted product buying by running a hierarchical linear regression with predicted product buying as the outcome variable; product cuteness (-1 = low cute, +1 = high cute), sex of participant (-1 = female, +1 = male), and their interaction as fixed factors; and product (bag, mug, phone) as a random factor. The interaction was not significant (B = 3.36, *S.E.* = 2.47,

$t(1,191) = 1.36$, $p = .174$), suggesting that female and male participants both predicted that women were more likely to buy cute products than were men, and that this sex difference in predicted product buying would be larger for high (vs. low) cute products.

Discussion. In support of H2b, Experiment Set 4 demonstrates that both female and male consumers display the stereotype that women like and would buy cute products more than would men when asked to predict attitudes and purchase intentions toward these products. In other words, the implicit association demonstrated in Experiment 3 is collaborated by explicit predictions gathered in Experiment Set 4.

Although both women and men exhibit a gender bias in predicting who will appreciate cute products (i.e., women will like and buy cute products more than will men), I did see evidence that the magnitude of this predicted gap in cute consumption was greater among male participants than female participants, and this was true regardless of the level of cuteness of the product. In other words, male participants predicted that both the low and the high cute products would be evaluated much more favorably by women than by men, whereas female participants predicted the size of this difference would be smaller but still significant. This is perhaps evidence of male (vs. female) consumers' greater applicability of the cute-feminine stereotype in their evaluations of cute products. This could be due to lack of familiarity with the category of cute products, which could result in greater application of stereotypes as a heuristic to understand the unfamiliar situation of predicting consumption of cute products. Note that in Experiment 3, I did not see evidence of a stronger implicit association between 'cute' and 'female' amongst male (vs. female) participants, suggesting that both male and female participants have the proposed mental association between cuteness and femininity, but men apply it more in predicting who will like and buy cute products.

Lastly, the interaction between sex of target and product cuteness in Experiment 4a suggests that individuals expect cuter products to incur a larger sex difference in product attitudes. When comparing the effect sizes seen in Experiment 4a with that in Study Set 1, it appears possible that individuals are overestimating the incremental effect of adding *more* cuteness to a product on product evaluations: recall that, in Study Set 1, I observed a main effect of sex on attitudes toward cute animals, such that women liked images of cute animals more than did men but a non-significant interaction between sex and level of cuteness. Although attitudes toward cute animals and cute products are not exactly comparable, they are both attitudes toward instantiations of cuteness. When comparing the size of the sex difference observed in Study Set 1 (ω^2_p = .03 [95% C.I. = 0.02-0.04]), with that predicted for the high cute products (ω^2_p = .56 [95% C.I. = 0.45-0.59]) and for the low cute products (ω^2_p = .04 [95% C.I. = 0.02-0.07]) in Experiment 4a, it appears participants were more accurate in predicting the sex difference in liking of low cute products than of high cute products. This may be evidence of a tendency to overestimate the incremental effect of adding more cuteness to a product on *who* is most likely to appreciate it.

Thus far, I have found that certain consumers are more (vs. less) likely to consume or express positive attitudes toward cuteness: those that are female (vs. male), high in femininity (vs. low femininity), or low in masculinity (vs. high masculinity) express more positive attitudes toward cute stimuli (Part I). I have documented evidence of my proposed mechanism for this pattern of results: a salient cute-feminine stereotype which leads consumers to predict that women are more likely to express a positive attitude and to buy cute products than are men (Part II). In the next and final part of my dissertation, I examine the consequences of the cute-feminine stereotype. Specifically, I first test if being perceived

as cute or owning cuteness impacts *others'* perceptions of cute products and of consumers of cuteness, respectively. In other words, can cute attributes (cute consumption) have a *causal* effect on perceptions of products (consumers)? I then examine the role of the cute-feminine stereotype in choice of toys to donate to children in the last experiment, suggesting one mechanism by which the cute-feminine stereotype is reinforced and maintained.

Throughout Part III, I test H4a, that cuter products will be perceived as more feminine, among the different product sets collected to manipulate product cuteness in the six individual experiments in Part III. This allows me to test H4a in a wide range of products (20), including products explicitly targeted toward children (i.e., toys, pencils) and products that could be used by any age group (i.e., mug, keychain). In the next experiment set, I begin my investigation into the consequences of cute consumption by testing whether owning cute products impacts consumers' *perceived* gender identity (i.e., how feminine or masculine others see you) (H4b), as a possible force that encourages or discourages cute consumption depending on the individual's attitude toward femininity (i.e., negative (positive) to those trying to maintain a masculine (feminine) identity).

EXPERIMENT SET 5: CUTER PRODUCTS ARE PERCEIVED AS MORE FEMININE AND CONSUMING CUTENESS IMPACTS PERCEIVED GENDER IDENTITY OF WOMEN, BUT NOT MEN

Experiment Set 5 examines the consequences of the salient mental association between cuteness and femininity on perceptions of both products and consumers. In particular, perceptions of cute consumers are a hitherto unexplored area of research: prior

work has focused on perceptions of cute infants and adults, rather than perceptions of cute products or perceptions of individuals who merely 'affiliate' with cuteness by owning cute products and are not necessarily cute themselves. It remains to be seen whether being cute makes a product more feminine and whether consuming cuteness actually alters perceived femininity, and thus whether avoidance of cuteness is a logical behavior for those wishing to maintain a masculine identity.

Specifically, Experiment Set 5 tests: *a)* whether high (vs. low) cute products are perceived as more feminine (**H4a**), *b)* whether owning cute products increases one's perceived femininity and decreases one's perceived masculinity (**H4b)**. In other words, does cute consumption increase product femininity and signal to observers that the consumer is a feminine person?

We expected that, due to the association between femininity and cuteness, cuter products would be perceived as more feminine (**H4a**), and that consuming cute products would result in heightened perceptions of the consumer's femininity (**H4b**). I did not expect this to vary by the gender of the target, i.e., both male and female consumers of products high in cuteness would be perceived as more feminine than consumers of products low in cuteness. Further, I predicted this effect would be especially strong in masculine environments (e.g., gym) because the social norms in such places are to prefer tough, independent, rugged products over sweet, gentle, cute products. Identity maintenance is more difficult in such contexts because the social norms are stricter (i.e., to be more masculine, less feminine) than in neutral environments, like the grocery store. For this reason, consuming cuteness should present a greater risk to perceived masculinity in masculine (vs. neutral) environments, and will be liked less (**H4c**).

To test H4a, I compiled all stimuli used in this study set and collected measures of femininity for the same products from a separate group of participants. To test H4b, I used two variations of a basic paradigm in this experiment set (see table 9): in all experiments, participants read a description of a consumer who owned either high or low cute products and provided their evaluation of the consumer. In four experiments, participants gave their evaluations by indicating how well a set of traits, including the key dependent variables of femininity and masculinity, applied to the target (Brough et al. 2016). Although this method facilitates the comparison of responses across participants, it also circumscribes what words participants can use to describe the target consumer.

In order to assess how consumers of cuteness are perceived more broadly, I also collected open-responses to typical consumers of a set of high (vs. low) cute products in one experiment and then used LIWC2015 (Pennebaker et al. 2015) software to code the femininity and masculinity of the language used to describe the targets (Gaucher et al. 2011). Lastly, to test H4c, I varied the context of cute product consumption to be or relatively neutral or masculine. In sum, Experiment Set 5 tests the effect of *a)* product cuteness on product femininity, and *b*) consuming cuteness on perceived gender identity, and whether the latter effect varies by sex of consumer or context of consumption.

Table 9. Descriptive statistics of the five studies included in Experiment Set 5 to test H4a-4c.

Study	N	IV	DV	N_{female}	M_{age}

A	311	Cuteness of product Sex of target	Perception of target's gender identity	109	37.2
B	294	Cuteness of product Sex of target	Perception of target's gender identity	145	37.8
C	196	Cuteness of product	Perception of target's gender identity	86	36.6
D	527	Cuteness of product Sex of target Consumption context	Perception of target's gender identity	225	39.4
E	198	Cuteness of product	Femininity (masculinity) of language used to describe the target	81	36.7
Sum	**1526**			**647**	**38.0**

Participants. Across the five experiments, the final sample consisted of 1,526 U.S. adults (647 females, M_{age} = 38.0). Participants were excluded if: *1)* they did not finish the survey (5a: N = 14, 5b: N = 0, 5c: N = 0, 5d: N = 0; 5e: N = 7), *2)* failed an attention check (5a: N = 14, 5b: N = 8, 5c: N = 10, 5d: N = 6, 5e: N = 0), *3)* selected "non-binary" for their gender (5a: N = 0, 5b: N = 2, 5c: N = 1, 5d: N = 4, 5e: N = 1). Specific to Experiment 5e, participants were also excluded from analysis if they *4)* wrote nonsense (e.g., wrote "I don't know", "good" or "nice" repeatedly) (N = 11), *5)* did not provide at least two unique answers

per product (e.g., listed "creative" three times; N = 2), or *6)* described what the product is (e.g., "turtle", "apple computer") or their evaluation of the product (e.g., "I like the mug") rather than the typical consumer of that product (N = 30).

Design. In all experiments, I varied the cuteness of a target consumer's products (high vs. low) and measured the target's perceived gender identity as the dependent variable.

Experiments 5c and 5e featured the atomic design, a 2 level (product cuteness: *high* vs. *low*) between-subjects design, where participants were randomly assigned to indicate the perceived gender identity of a hypothetical consumer who owned either *high* or *low* cute products. The target consumer's sex was left *unspecified* (experiment 5e) or specified as *male* (experiment 5c); thus sex of target was not manipulated in these two studies.

However, sex of target was varied as an independent factor in a fully-crossed 2 (product cuteness: *high* vs. *low*) x 2 (target sex: *female* vs. *male*) between-subjects design in experiments 5a, 5b, and 5d. I varied the level of information about the sex of the target consumer to in the pursuit of three aims: to understand 1) how cute consumption impacts perceived gender identity with no information on target sex (experiment 5e), 2) how cute consumption impacts *males'* perceived gender identity specifically (experiment 5c), 3) how cute consumption interacts with target sex to impact perceived gender identity (experiments 5a, 5b, 5d).

Lastly, to test for moderation by consumption context (**H4c**), I also varied the location where the target was spotted to be neutral (same grocery store scenario) or masculine (gym) in experiment 5d. Thus, this experiment featured a 2 (product cuteness: *high* vs. *low*) x 2 (target sex: *female* vs. *male*) x 2 (consumption context: *neutral* vs. *masculine*) between-subjects design.

Manipulation of cuteness of products. In order to create pairs of products that varied in perceived cuteness, I ran a pretest where 200 U.S. adults from Amazon Cloud Research rated the cuteness and familiarity of similar versions of the same product (e.g., mugs with dogs on them; see appendix F). The products were chosen to all have anthropomorphic designs to allow us to vary cuteness without varying product anthropomorphism or femininity (e.g., more curved lines, bright colors). I then selected two options within a product category that differed significantly in perceived cuteness: the cuter options were used in the high cute condition, whereas the less cute options were used in the low cute condition. The final product categories were all durable consumer goods (shopping bags, mugs, and laptop stickers) which may be used at home (in private) and at the workplace (in public). I had a separate group of participants rate the high cute products and the low cute products on perceived femininity (in a fully randomized order) to test H4a (i.e., cuter products will also be perceived as more feminine). I report the relation between these measures first in the Results section.

Exactly *which* products participants saw from the full set of high cute and low cute products varied between studies. In experiment 5a-5c, participants read about a target carrying either the high or low cute *shopping bag*, whereas in experiment 5d, I amped up the cuteness manipulation by having the target carry three high cute or low cute products: *shopping bag, wallet, coin purse*. In experiment 5e, participants described the hypothetical owner of three high or low cute products: *mugs, laptop stickers*, *shopping bags*. The less specific context of the evaluations made in experiment 5e (vs. experiments 5a-5d) allowed me to use a broader range of product categories as stimuli.

Perceived femininity. Perceived femininity was measured in two ways: first, by asking participants to indicate how well the trait "feminine" applied to the target using a 5-point Likert scale (5a-5d); second, by coding the femininity of words used to describe the target (5e). In the second method, I elicited three attributes to describe the typical consumer of each of three products; I then created a vector containing all nine responses from each participant. I submitted these vectors to the text analysis software LIWC2015 (Pennebaker, Booth, Boyd, and Francis 2015). This software is used to assess the emotional, cognitive, and structural components of a sample of text. LIWC2015 operates by comparing the words of the text to a dictionary of words that tap a particular domain (e.g., negative emotion words) and computing the frequency at which those words appear in the text. For example, a score of 2 on the dimension of negative affect meant that 2% of the words in that text were classified as negative emotion words. For my analyses, I imported a dictionary of feminine and masculine words developed by Gaucher, Friesen and Kay (2011) to examine the gendered wording used in job advertisements. The full dictionary of feminine (masculine) words may be found in Appendix G. Each participant received a score on feminine wording (M = 2.63, $S.D.$ = 5.70) and masculine wording (M = 1.19, $S.D.$ = 1.19). Note that the median score on each dimension was 0 – most of the words that were used to describe typical consumers were neither feminine nor masculine.

Procedure. In experiments 5a-5c, participants were told they would be imagining how they would react to different shopping experiences. In the scenario, participants imagined seeing another shopper carrying either a high cute shopping bag or a low cute shopping bag, depending on condition. Participants then rated how well a series of attributes – including the key dependent variable (feminine) and a set of filler items (e.g., curious, athletic, attractive) –

described the other shopper using 5-point scales (1 = not at all, 5 = perfectly; Brough et al., 2016). The filler items were included to disguise the purpose of the study and will not be discussed further. Lastly, participants provided their sex, age, and answered an attention check before exiting the study.

The procedures of experiments 5c and 5d included small variations on this original paradigm: in experiment 5c only, the target consumer carried two additional products (wallet, coin purse) which were manipulated similarly to the shopping bag; in experiment 5d only, the location of the scenario was also varied, such that half of participants imagined the target in the grocery store (neutral context) and half of participants imagined the target in the gym (masculine context).

Lastly, in experiment 5e, participants were told that they would view a set of products and be asked to provide their spontaneous associations. Participants then viewed either three high cute or three low cute products (shopping bag, laptop sticker, mug) in a randomized order, listing three attributes to describe the typical consumer of that product before moving on to the next trial. Participants then reported their sex (male, female, non-binary), self-report femininity and masculinity (direct measure), and age, before answering an attention check and then exiting the study. For the attention check, participants indicated which animal they had seen on the shopping bag (tiger, dog, cat, elephant).

Results

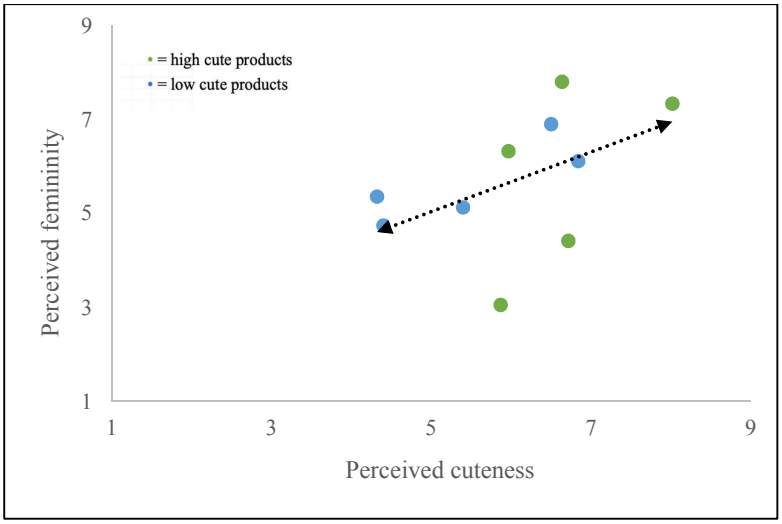
Perceived femininity of cute products. To test **H4a**, I examined whether the high cute products were perceived as more feminine than the low cute products. I predicted that the high cute products would be perceived as more feminine than less cute products (H4a).

Unfortunately, I was unable to correlate cuteness ratings and femininity ratings for this set of products because they came from different groups of participants with different sample sizes; however, I was able to extract the mean perceived cuteness and mean perceived femininity scores for each product (see Table 10) and plot these in a scatter plot to show the direction of the relationship between these two variables (see figure 4). Note that, in support of **H4a**, the high cute version of a product is always perceived as both cuter and more feminine than the low cute version of the same product, despite their similarity in feminine attributes (e.g., curved, small). A similar procedure and analysis using the product stimuli from Study Set 2 revealed a similar pattern (see Appendix X for all products' rating on perceived cuteness and perceived femininity, the latter when available).

Table 10. Descriptive statistics on perceived cuteness and perceived femininity for cute product pairs used in experiment set 5.

Product	Cute level	*M* cute	t(df)	*p*	*M* fem	*t*(df)	*p*
Panda keychain	High Low	8.02 6.84	t(182) = 4.05	<.001	7.33 6.11	*t*(192) = 3.56	< .001
Avocado coin bag	High Low	6.64 6.50	t(196) = .39	0.698	7.80 6.90	*t*(186) = 2.58	0.011
Tiger bag	High Low	5.97 4.40	t(193) = 3.81	< .001	6.32 4.74	*t*(195) = 4.17	< .001
Animal mug	High Low	5.87 4.32	t(199) = 3.92	< .001	3.05 5.36	*t*(194) = -6.65	< .001
Turtle sticker	High Low	6.72 5.40	t(200) = 2.24	0.026	4.41 5.13	*t*(195) = -2.02	0.044

Figure 4. Scatterplot of perceived cuteness (x-axis) and perceived femininity (y-axis) scores for ten products used in experiment set 5, with trendline added for visualization.



Perceived femininity of consumers of cute products. I predicted that targets with high cute products would be perceived as more feminine than targets with low cute products, i.e., to see a main effect of product cuteness on perceived gender identity (**H4b**). To test the effect of consuming cuteness on perceived femininity, I first collated data from experiments 5a-5d which measured perceived femininity in an identical method (i.e., how well does the adjective 'feminine' apply to the target; scale: 1 = not at all, 5 = perfectly).

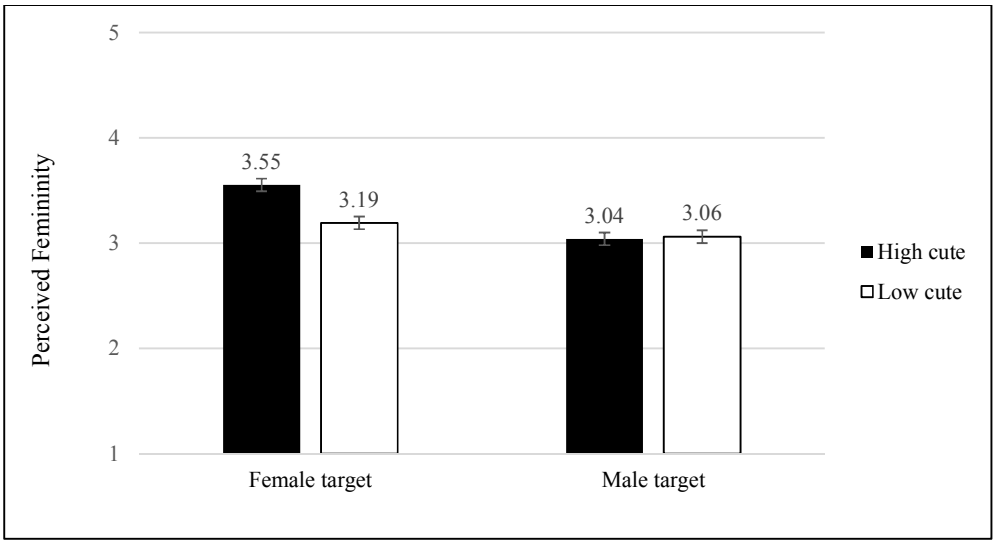
We conducted a hierarchical linear regression with product cuteness, sex of target, and context as fixed factors, with study as a random factor. The three-way interaction with product cuteness, target sex, and context was not significant (B = -.10, $S.E.$ = .15, $t(1,319)$ = -.65, p = .517)[7]. Study accounted for about 9.09% of residual variance accounted for by

[7] I considered the same three-way interaction using only the data from experiment 5d because this was the only study to vary the factor of consumption context (neutral vs. masculine). An ANOVA revealed that the interaction was still non-significant ($F(1, 519) = 0.10$, p = .756) in this analysis.

random effects. As hypothesized in H4b, the main effect of product cuteness was indeed significant (B = -.15, *S.E.* = .06, t(1,325) = -2.47, p = .014), such that consumers of high cute products were perceived as more feminine than consumers of low cute products. Similarly, the main effect of target sex was significant (B = -.20, *S.E.* = .03, t(1,283) = -6.20, p < .001), such that female consumers of were perceived as more feminine than male consumer, which is to be expected.

However, both main effects were qualified by an important two-way interaction with target sex (B = .23, *S.E.* = .06, t(1,323) = 3.72, p < .001). Figure 5 plots the perceived femininity of targets by product cuteness and target sex; see table 2 in the supplemental materials for a summary of results by study. Female targets were perceived as more feminine when they carried a cuter product (M_{high} = 3.48, *S.D.* = 1.95; M_{low} = 3.08, *S.D.* = .95, t(561) = 5.06, p < .001), whereas male targets were perceived as equally feminine regardless of how cute their products were (M_{high} = 2.97, *S.D.* = 1.16; M_{low} = 3.00, *S.D.* = 1.26, t(761) = .42, p = .671). I then tested if this effect varied by *sex of participant*: the three-way interaction between product cuteness, target gender, and participant's gender was non-significant (B = .00, *S.E.* = .06, t(1,321) = .06, p = . 953). In other words, both male and female participants thought a female target was more feminine when she owned a high cute (vs. low cute) product. In contrast, both male and female participants thought a male target was equally feminine if he owned high cute or low cute products. This was true regardless of consumption context, although there was a main effect of context on perceived femininity, such that targets were perceived as more feminine when they carried either the high or low cute shopping bag in the gym.

Figure 5. Experiment Set 5a-d: Interaction of product cuteness and sex of target on perceived femininity; error bars represent ± 1 *S.E.*



I also examined the effect of varying product cuteness on feminine wording, my second measure of perceived femininity, in experiment 5e. I conducted an independent samples t-test with cuteness of products as the independent variable and feminine wording as the dependent variable. As expected, participants in the high cute condition described typical consumers in more feminine wording ($M = 4.09$, $S.D. = 10.10$, $N = 101$) than participants in the low cute condition ($M = 1.53$, $S.D. = 8.32$, $N = 98$; $t(196) = 1.89$, $p = .060$).

Perceived masculinity of consumers of cute products. Due to the negative relationship between perceived femininity and masculinity, I expected that consuming cuteness would have opposing effects on perceived femininity (+) and masculinity (-) for female consumers. Indeed, when I collapsed the two datasets with a direct measure of perceived masculinity (5a and 5d), I observed the same two-way interaction on perceived masculinity ($B = -.27$, $S.E. =$

.08, $t(833) = -3.41$, $p < .001$) as on perceived femininity, such that consuming cuteness altered female consumers' perceived masculinity ($M_{high} = 2.10$, *S.D.* = 1.15; $M_{low} = 2.52$, *S.D.* = 1.20; $t(412) = 3.82$, $p < .001$), but not males' ($M_{high} = 2.73$, *S.D.* = 1.12; $M_{low} = 2.62$, *S.D.* = 1.18, $t(420) = -.98$, $p = .327$). This did not depend on consumption context ($B = .20$, *S.E.* = .17, $t(829) = 1.15$, $p = .250$) or sex of the participant ($B = -.03$, *S.E.* = .08, $t(829) = -.38$, $p < .707$).

We also examined if there was a difference in the masculinity of the language used to describe consumers of high (vs. low) cute products in experiment 5e, expecting to see that consumers of high cute products are described as less masculine. In contrast, participants used a similar frequency of masculine words to describe the typical consumers of high cute products ($M = 1.01$, *S.D.* = 5.50) and low cute products ($M = 1.37$, *S.D.* = 5.08; $t(196) = -.48$, $p = .639$). This is possibly due to the lack of information regarding target sex in this study: without knowing the sex of the target in a scenario, it is likely that participants defaulted to 'male' as male is the traditional default gender assignment in the absence of more information (e.g., Gallagher and Bodenhausen 2021).

Discussion. In Experiment Set 5, I found mixed evidence for **H4a**, that cuter products would be perceived as more feminine. Three of the five product categories rated on perceived cuteness and perceived femininity showed the expected direction of the effect (high > low cute), but two product categories showed the opposite effect (high < low cute). This suggests that, although there some evidence for a relationship between increasing cuteness and increasing product femininity, it is also possible to have high cute products that are not perceived as more feminine than low cute versions of the same products. This is important

evidence in my argument that cuteness and femininity are strongly associated, but distinct, constructs.

As predicted by **H4b**, I found that cute consumption indeed impacts perceived gender identity, but with a major caveat: it depends on the sex of the consumer. For female targets, consuming cuter products heightened perceived femininity and lowered perceived masculinity. In contrast, male consumers were not perceived differently based on their cute consumption. Lastly, in contrast to my expectations, consumption context did not interact with cute consumption or target sex to influence perceived gender identity. Thus, **H4c** was not supported. In sum, participants had different interpretations of cute consumption by women (i.e., made them seem more feminine) and cute consumption by men (i.e., no effect on how feminine or masculine they seem), and this differential interpretation of cute consumption was consistent across a neutral consumption context (i.e., grocery store) and a relatively masculine consumption context (i.e., gym).

Our results suggest that men can consume cuteness without concern for being perceived as more feminine or as less masculine. This is significant in considering how to attract new consumers to a cute offering. If men are not consuming cuteness because they perceive it as feminine and they do not want to be perceived as feminine, then evidence showing that owning cute products does not seem to alter males' perceived gender identity has the potential to be consequential in changing male consumers' attitudes and behaviors toward cuteness.

There are several reasons why I may have observed this interaction between cute consumption and target sex. Perhaps when men own cute products, it is perceived as an

aberration, something unindicative of their true nature. Yet, when a male target was portrayed as owning multiple cute products (bag, wallet, coin purse) in experiment 5c, his perceived femininity still did not waiver, suggesting that male consumers of cuteness are allowed multiple aberrations before their perceived gender identity is impacted, if at all. In contrast, my results suggest that, when women consume cuteness, it is attributed to their gender identity, at least under the conditions present in my experiments. The belief that cuteness is feminine (i.e., "Cuteness is for girls") may have lead participants to assume that women who own more cute products do so because they are inherently more feminine than women who own less cute products. Alternatively, participants may believe women own cute products in order to signal that they are feminine to observers; if this signal is judged to be a reliable cue of a female target's true femininity, then owning high (vs. low) cute products would lead to greater perceived femininity. A more systematic investigation is needed to understand 1) how the magnitude or frequency of cute consumption moderates its effect on men' perceived gender identity, such that extreme (e.g., cute car) or frequent (e.g., daily posts of cute animals) cute consumption increases men's perceived femininity and lowers their perceived masculinity, and 2) the conditions under which cute consumption is *not attributed* to a woman's gender identity, like when an environmental factor (e.g., a donation booth giving out cute animal swag) or an alternate dispositional factor (e.g., loneliness) which could explain the cute consumption behavior is introduced.

Lastly, when the sex of the target was not provided, I observed partial support for **H4b**: consumers of high (vs. low) cute products were described using more feminine language, but there was no effect on masculine language. One limitation of this study is that I asked participants to imagine a typical consumer of a high (vs. low) cute product and

describe the consumer in their own words, rather than assessing their perceptions on standard measures; this resulted in a great variety of descriptors, which could have been narrowed down by providing more detailed instructions. However, this experiment nonetheless provides the first evidence of how consumers of cuteness are described using free association, allowing for a richer set of impressions than provided by the standard Likert-scales used in the other three experiments in this set.

Thus far, I have shown that women, more feminine individuals, and less masculine individuals are most likely to express a positive attitude toward cuteness, and that consuming cuteness boosts women's perceived femininity. In my next study, I explore one mechanism by which the cute-feminine stereotype may be sustained: choice of toys for girls versus boys. From a young age, girls are socialized to be warm, nurturing, and affectionate, whereas boys are socialized to be independent, competent, and aggressive (Halim et al. 2014). In order to facilitate the socialization of gender roles, children's products (especially toys) are segregated by gender, despite increasing openness to the idea that gender is non-binary. Girls' products emphasize caretaking, socializing, and housework, like dolls or fashion accessories, whereas boys' products emphasize problem-solving, construction, and even violence, like Legos and video games. For this reason, in Experiment 6, I examine whether individuals choose to donate cuter products to girls (vs. boys) because cuter products are perceived as more suitable due to the (assumed) more feminine nature of girls than boys.

EXPERIMENT 6. GIRLS ARE GIFTED CUTER TOYS THAN ARE BOYS

We have argued there exists a cute-feminine stereotype suggesting that cuteness is feminine (and thus, un-masculine), and thus better suited for women than for men. This is one reason that helps to explain why women like cute products more than do men. In the

current study, I examine if this stereotype is applied when choosing products for children, due to the tendency for adults to buy gender role-consistent toys for children (i.e., dolls for girls, action figures for boys), especially as gifts (Fisher-Thompson and Sousa 1993). The choice of gender role-consistent toys may be explained in that play is an important part of socialization and facilitates learning of gender roles (i.e., girls play with dolls and learn caretaking behavior, boys play with action figures and learn how to dominate their environment). For this reason, I leveraged the context of donating children's toys to test for evidence of the cute-feminine stereotype in choice of toys to give to girls versus boys.

Specifically, I had participants choose among pairs of actual high cute and low cute products which to donate to an after-school program for children between 5-12 years. I manipulated whether the after-school program was described as specifically for girls (i.e., "That Girl") or for boys ("That Boy") in order to vary the perceived suitability of cute products to the recipients. I predicted that, due to cute-feminine stereotype, participants would send cuter products to the girls program than the boys program (**H5**).

Participants. 300 participants were recruited from Prolific in exchange for monetary compensation of $0.75. These participants had identified themselves to Prolific as 1) residing in the United States, and 2) fluent English speakers. Three participants were excluded for indicating their gender as non-binary, for a remaining total of 297 participants (M_{age} = 33.2, 146 females).

Cover story. Participants were told that the researchers needed help deciding what to do with a large number of products that they had ordered for use in in-person studies before the COVID-19 virus resulted in the halting of all in-person lab studies at their university. Participants were told that an after-school program had agreed to take *some* of the

researchers' excess products, and that the participants' task was to help the researchers choose which products to donate to the after-school program.

Design. The design was *gender of after-school program (*female, male) x *cuteness of product* (high cute, low cute) x *product category* (pen, pencil, stress ball, sticker, toy) mixed design. The first factor was between-subjects, whereas the second and third factors were within-subjects. In other words, participants chose which option in a pair of products (one high cute option, one low cute option) they would recommend donating to an after-school program that was described as either focused on girls' advancement (female condition) or boys' advancement (male condition), depending on condition. I chose to use a repeated measures design, such that participants made choices for five pairs of products rather than a single pair, to reduce the influence of spurious differences within a given pair of products (e.g., one sticker could be perceived as much more attractive than the other sticker).

Manipulation. Participants were randomly assigned to read about an after-school program targeted at either girls or boys (5-12 years). Accordingly, the organization was titled "That Girl [Boy]" depending on condition and was accompanied by a photo of several girls [boys] of the stated age range looking at several computer monitors (see Appendix I for stimuli). All other information about the program was identical across conditions.

Dependent variable. The dependent variable was whether or not participants chose the high cute option in a pair to donate to the after-school program (see appendix H for stimuli). To ensure the high cute options were indeed cuter than the low cute options, I conducted a pretest (N = 130) in which participants sequentially rated all high cute and low cute options for all product categories in a completely randomized order. I manipulated cuteness within each pair of products by choosing extremely similar versions of a real product (e.g., flamingo pens from Amazon) that only differed in their level of infantile

attributes (e.g., a baby flamingo pen vs. a mature flamingo pen). The results of the pretest confirmed that the high cute options were perceived as significantly cuter than the low cute options (see appendix H).

Due to my repeated measures design, I looked at the dependent variable in two different ways: first, I summed the total number of high cute products chosen (out of 5) for each participant to create a continuous measure of cute product choice; second, I treated choice as a binomial variable (0, 1) and modelled the likelihood that participants choose the high cute option in a given pair of products. Details of each analysis are provided in the Results section.

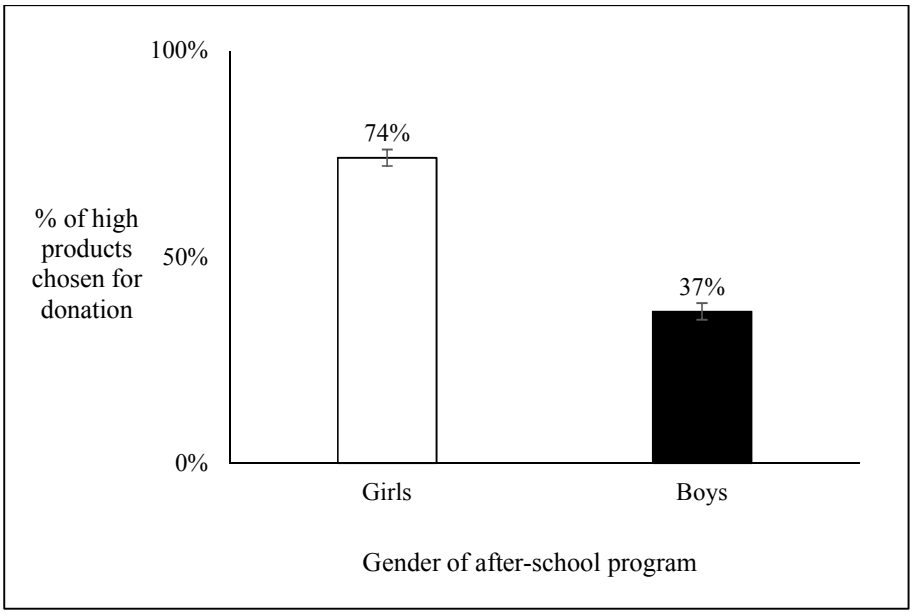
Results

Do girls receive cuter products than boys? To test H5, that girls will be the recipients of cuter product donations than will boys, I calculated the total number of high cute products chosen by the participant as my dependent variable and modelled the effect of gender of after-school program (-1 = boys, 1 = girls) on number of high cute products chosen (out of 5). This effect was significant ($B = .94$, $S.E. = .07$, $t(295) = 13.02$, $p < .001$, $\omega^2_p = .36$ [95% C.I. = 0.28-0.44]), such that participants chose to donate more high cute products to the after-school program for girls ($M = 3.70$, $S.D. = 1.09$) than the program for boys ($M = 1.84$, $S.D. = 1.34$).

To account for variation across the five product categories featured, I also performed a hierarchical binomial logit model with choice (0 = low cute product, 1 = high cute product) as the outcome variable, gender of after school program (-1 = boys, 1 = girls) as a fixed factor, and product category (toy, pen, pencil, stress ball, sticker) and participant as random factors. The results of this analysis were consistent with the simple linear regression ($B =$

1.97, *S.E.* = .17, $z = 11.68$, $p < .001$), such that participants were more likely to choose the high cute product when the after-school program was for girls ($M = .74$) than for boys ($M = .37$). Another way to describe this effect is that participants chose the high cute product 74% of time when they were choosing which products to donate to a girls after-school program, but only 37% of the time when they were choosing products for boys. This difference is expressed in figure 6.

Figure 6. Experiment 6: Percent of HIGH cute products donated, organized by gender of after-school program.



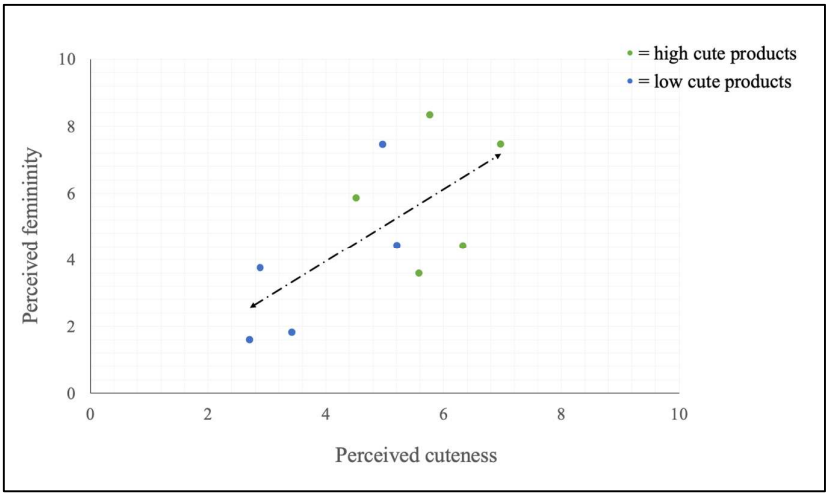
We also examined the effect of gender of after-school program on choice for each individual product pair. The results of the individual logit (binomial) models are presented in Table 8. Across all product pairs, participants were more likely to choose the high cute product to donate when the after-school program was for girls than for boys.

Table 11. Experiment 6: Odds ratio of choosing cute product, organized by gender of school and product category.

Product	M_{girls}	M_{boys}
Pen	2.12	0.32
Pencil	2.38	0.58
Sticker	6.81	1.82
Stress Ball	3.46	0.58
Toy	2.29	0.27
Overall	**0.74**	**0.37**

Are cuter children's products *also perceived as more feminine?* To further test H4a, i.e., that cuter products would be perceived as more feminine, I tested whether the five high cute options in the pair of products were also perceived as more feminine than the low cute options. Accordingly, I had a separate group of participants rate the five high cute products and the five low cute products on perceived femininity in a fully randomized order. Unfortunately, I was unable to correlate cuteness and femininity ratings because they came from different groups of participants with different sample sizes; however, I was able to extract the mean perceived cuteness and mean perceived femininity scores for each product (see Appendix X) and plot these in a scatter plot to show the direction of the relationship between these two variables (see figure 7). In support of H4a, the high cute version of a product was always perceived as both cuter and more feminine than the low cute version of the same product, despite their similarity in feminine attributes (e.g., curved, small).

Figure 7. Scatterplot of perceived cuteness (x-axis) and perceived femininity (y-axis) scores for cute product pairs used in experiment 6 with trendline added for visualization.



Discussion. This study demonstrates one downstream consequence of the cute-feminine stereotype: individuals chose to donate cuter products to an after-school program for girls (vs. boys). Although I did not measure the perceived suitability of the products to the children in the after-school program, I argue this effect occurs because the high cute products are perceived as more suitable for girls than for boys, as a result of the association between femininity and cuteness.

One implication of this study is that girls may grow up with cuter products around them than boys. Although this seems intuitive, there is no experimental evidence to this effect, to my knowledge. If this is the case, it is likely both a source and a consequence of the cute-feminine stereotype due to the reinforcing nature of stereotypes (Eagly 1987): put simply, observing girls consuming cute products more than boys leads to the stereotype that girls like cute things more than boys, which then leads individuals to choose cuter products to

give to girls than to boys, in a never-ending cycle of stereotype maintenance. This leads to the question: how do I break the cute-feminine stereotype?

It is possible that describing the after-school program for girls in more agentic, masculine, language might decrease the perceived suitability of the high cute products to the after-school program, and thus weaken my effect. Of note, the actual language used to describe the after-school program was held constant across conditions and was already relatively agentic ("leadership", "confidence skills", "long term success"). It seems that participants still applied the cute-feminine stereotype to a group of girls involved in a relatively agentic after-school program.

GENERAL DISCUSSION

Despite the growing popularity of cute offerings, there is limited research on who most likes cute products and on how such individuals are perceived by others. I utilize a wide body of psychological and consumer research on gender to theorize that cute consumption may best be understood by considering the roles that sex and gender identity play in forming attitudes toward cuteness. Whereas *sex* is a biological variable relating to the physical differences between women and men across cultures, *gender identity* is best understood as a social construct representing an consumer's sense of how they relate to concepts of gender in their culture; this can mean thinking of yourself as masculine because you play baseball, which is strongly associated with men, or thinking of yourself as feminine because you like the color pink, which is strongly associated with women.

In Study Sets 1 and 2, I find that both sex and gender identity predict attitudes toward a range of cute stimuli, such that women (vs. men), individuals high (vs. low) in femininity, and individuals low (vs. high) in masculinity express more positive attitudes toward cute

products, animals, and infants. I argue this pattern of results occurs because cuteness is strongly associated with facets of femininity, and there exist individual differences in attitudes toward femininity, such that individuals who strive for a highly masculine (vs. feminine) identity view feminine traits, attitudes, and behaviors as able to detract from their masculine identity, and thus engage in less cute consumption. I test the core underlying assumption that cuteness is cognitively associated with femininity in experiments 3 and 4, which show that people are faster at categorizing cute products as cute (vs. bold) when paired with female (vs. male) names using a custom Gender-Cuteness IAT, and that they explicitly predict women (vs. men) will like and buy cute products more.

After identifying and documenting a stereotype that can explain who is more likely to engage in cute consumption, I explore further the *social experience* of cute consumption to provide the first evidence of how such actions are viewed *by others*, identifying which consumers of cuteness are perceived differently based on their ownership of cute products. I find that cuter products are indeed perceived as more feminine, but that consuming them does not actually impact how feminine or how masculine a male target is judged – only how female targets are judged (Experiment Set 5) – suggesting that the belief that cute consumption detracts from perceived masculinity may be unfounded. Lastly, by finding that cuter products are more likely to be chosen for donations to a girls (vs. boys) after-school program, I highlight one reinforcing mechanism of the cute-feminine stereotype: socialization.

Together, these studies characterize the gendered nature of cute consumption. In the next sections, I will highlight the theoretical contributions and practical implications of the present work, as well as limitations and future directions, before offering some concluding observations.

Theoretical contributions. My work makes important theoretical contributions to the cuteness and gender identity literatures. Cute consumption comprises a set of attitudes, choices, and behaviors that are gaining increasing attention in consumer research (Table 1). Whereas past work on cuteness highlights its vulnerable, babylike, qualities (Keating et al. 2001; Wang et al. 2019) or its inviting moral character (Sherman and Haidt 2011), I contribute to the literature on cuteness by highlighting the perceived feminine quality of cuteness. I do so by drilling down to the attribute level of cute and of feminine stimuli, identifying the specific perceptual (e.g., warm, affectionate) and visual (e.g., round, small) attributes shared in characterizations of cuteness and of femininity.

By beginning my investigation from the perspective of a consumer researcher, trying to understand consumption of cute products, I was able to identify and shine the spotlight on how the presence of attributes typically associated with women in cute products results in fundamentally different reactions by female and male consumers. Specifically, I leverage social role theory and its extensions (male gender role rigidity, avoidance of femininity, precarious manhood) to explain why men (vs. women) and individuals who identify as more masculine (vs. feminine) would express less positive attitudes toward cute stimuli: the perceived feminine quality of cuteness.

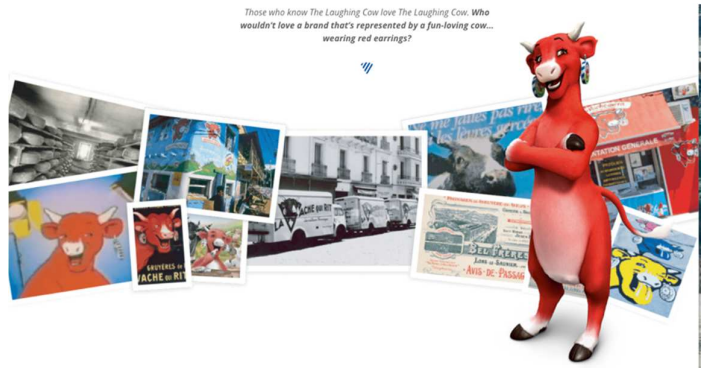
Identifying the cute-feminine stereotype has the potential to enrich the conceptualization of cuteness: if cute entities are perceived as feminine, or even identified as female (e.g., cuter infants are less likely to be categorized as boys; Hildebrandt and Fitzgerald 1977), it is possible other attitudes and traits associated with women are applied to cute entities. For example, caring, good with children, tidy, are all traits associated with women (Bem 1981), but not with cuteness – infants are hardly effective at caring for others or their environment. As a consequence, leveraging the cute-feminine stereotype to increase the

accessibility of those feminine, but not cute, attributes could improve evaluations of cute products or characters operating in a mature feminine domain, like caregiving or housekeeping (e.g., cute robots in hospitals, cute brand characters for cleaning products, see figure 8). In sum, my work contributes to understanding of cuteness by introducing the cute-feminine stereotype and demonstrating its explicative power in consumer behavior, e.g., in understanding previous observations of sex differences in attitudes toward cuteness and cute consumption.

Figure 8. Examples of *a*) cute design in robot receptionist in <u>Belgian hospital</u> (*The Guardian*, 2016), *b*) cute brand character in traditionally feminine domain, food preparation (<u>Laughing Cow</u>).

a)

b)



The second area where my dissertation makes important contributions is that of gender identity, particularly within the field of consumer behavior. First, I add to the literature examining how one's products can impact one's *perceived* gender identity (Brough et al. 2016; Rozin et al. 2012) by showing that female consumers experience a boost in perceived femininity and a dip in perceived masculinity upon owning cuter products. Second, my dissertation contributes to the growing movement[8] to consider gender identity to be a sufficiently rich and explanatory construct that it should be captured alongside any binary measure of sex in order to best understand how consumers experience gender today. Gender identity reflects the rich body of attitudes and beliefs, norms and expectations, that comprise the constructs of femininity and the dimension of masculinity, which themselves are notably reflective of other core two dimensional models of social perception (i.e., communion/agency, warmth/competence). As such, variation in attitudes and behavior both *between* and *within* the categories of male and of female can be further explained with reference to the multidimensional construct of gender identity.

In the last decade in particular, we have seen evidence that the dimensions of femininity or masculinity vary among individuals in meaningful ways for consumer behavior researchers: gender identity has been used to predict important outcomes such as donation behavior, attitudes toward advertisements, and cooperation, but its relation to cute consumption is unique to the present research. The current research thus contributes to the

[8] Converging interest in expanding understanding of gender from different fields: *a*) "U.S. issues first passport with a nonbinary option", Joe Hernandez, *NPR*, 2021 (Oct); *b*) *JACR* special issue on "Gender, Markets, and Consumers", Coleman et al., 2021, full citation in references; *c*) Blondeel, de Vasconcelos, García-Moreno, Stephenson, Temmerman, and Toskin (2018), "Violence motivated by perception of sexual orientation and gender identity: a systematic review", *Bulletin of the World Health Organization, 96*(1), 29-41L).

growing array of studies that demonstrate the impact of gender identity on consumer behavior (Gal and Wilkie 2010; Winterich et al 2010).

Practical implications. The finding that individuals who identify as high (vs. low) in femininity are more likely to like cute products, regardless of their biological sex, has important implications for marketers. A measure of femininity added to surveys could provide significant insight into who is most likely to react positively to a cute offering and can be used in segmentation. The finding that masculinity is negatively related to attitudes toward cuteness seems to suggest that men and individuals with a masculine identity should not be targeted with cute offerings.

However, if men were informed of the distinct *lack* of consequences of consuming cuteness on perceived femininity and on masculinity, they may be more likely to consume cuteness. In other words, if some men are not consuming cuteness to avoid being seen as feminine, an intervention informing them that men who consumed cuteness were not perceived as more feminine or less masculine should positively influence their attitudes toward cuteness, because the "risk" that consuming cuteness presents to their gender identity has been removed. This is most likely to be true among men who are ambiguous or cautious about cuteness – i.e., they do not love, but do not hate, cuteness – because weaker (vs. stronger) attitudes are easier to change (Howe and Krosnick 2017). One such method to implement this idea would be to leverage research on debiasing and should be considered in future work.

One method for recruiting men *and* masculine individuals to cute offerings is to reduce the accessibility of the cute-feminine stereotype so the cute offering is not immediately categorized as feminine, and thus as a potential risk to these consumers' gender identity. This may be achieved by increasing the relative accessibility of alternative

associations with cuteness: *nostalgia* is a promising alternative association that could be leveraged to rebrand cute offerings. The youthfulness, simplicity, and positivity of cute offerings means that they are highly nostalgic (Granot et al 2014). Both adult men and women remember being surrounded by cute things as a child, and whether they liked them or not, there is a feeling of familiarity, of childhood security, that can be conjured by perceiving cute products as nostalgic. Indeed, the most acceptable place, outside of parenting, for adult men to consume cuteness is in the context of appreciating products or media from their childhood. Comic books, classic video games, collectable action figures, and the full suite of Disney revival films, bring cuteness to men of all ages by fitting under the protective umbrella of nostalgia. The nostalgic quality of cuteness (*cottage cute* for short) is a deeply understudied aspect of cuteness that I believe could be leveraged to recruit an entirely new segment of consumers to cute offerings.

Limitations. The data presented here do not address causality in the link between gender identity and attitudes toward cuteness. It remains unclear if liking cute things informs an individual's self-perception of femininity (I like cute things, so I must be feminine) or if the individual likes cute things because she considers herself a feminine person (I am feminine, so I like cute things). I attempted to manipulate gender identity using manipulations used in prior research (see appendix J for full details): in one experiment (N = 182 Prolific users), participants wrote a paragraph about how a set of feminine "virtues" (considering others' feelings, selflessness, nurturance, etc.) or masculine virtues (standing by your convictions, assertiveness, self-sufficiency) applied to them (Winterich et al. 2009). They then indicated how well two communal and two agentic traits described them.

I failed to replicate Winterich et al.'s results: participants indicated similar levels of communion (5.9-6.0) and agency (5.1-5.3) in the feminine and masculine conditions. In

another experiment (N = 140), participants unscrambled six sentences that were designed to prime communion or agency (Kurt, Inman, and Argo 2011) before indicating how feminine and how masculine they were using single-item measures. I failed to replicate Kurt et al.'s results: participants indicated similar levels of communion (3.3-3.6) and agency (4.1-4.2) in the feminine and masculine conditions. However, my experiences are also consistent with other work suggesting gender identity is a relatively stable individual difference that is difficult to manipulate (Eagly 1987; Gallagher and Bodenhausen 2021).

In the current research, I focus on infantile or 'kinderschema' cuteness to build on prior research regarding the role of sex in perceptions and evaluations of this type of cuteness. A second type of cuteness, whimsical cuteness, defined as a capricious and humorous disposition, may be less associated with femininity than infantile cuteness is. I would still expect gender identity to predict attitudes toward whimsically cute products because of the considerable overlap in whimsical and infantile cute design elements (e.g., anthropomorphic, colorful, bright, cartoon-ish), but the additional component of a salient playful or mischievous nature in whimsically cute products may weaken the association between cuteness and femininity by strengthening the alternate association between cuteness and youthfulness or immaturity. When the association between cuteness and femininity is relatively less salient, I would expect the impact of gender identity on attitudes toward cute stimuli to weaken. Future work could identify predictors of attitudes toward whimsically cute products.

Future directions. Future work could examine conditions under which male consumers of cuteness are perceived as more feminine/less masculine. In Japan, it is significantly more accepted for men of all ages to consume cuteness than it is in the U.S. (Dale 2017; Granot et al 2014). This could be a result of the longer and richer of cute

consumption in Japan (vs. U.S.): extremely popular cute products like Hello Kitty were exported from Japan since the 1970s, sparking a global trend of heightened cute consumption that has not abated. This longer history, as well as the greater popularity of cute consumption culture, has likely encouraged Japanese men to develop their *own* role in relation to cuteness that is not simply reactionary to its association with women and femininity. Cross-cultural research comparing social perceptions of consumers varying by culture (U.S. vs. Japan), sex (female vs. male), and level of cute consumption (high vs. low), as well as research comparing the predictive ability of gender identity to explain cute consumption in these two cultures, could shed light on why consumers of cuteness in Japan are more gender-balanced than in the U.S.

Although I found that possessing up to three cute products in public was not sufficient to alter perceptions of a male target's gender identity, varying the information provided regarding a target's preference for cuteness could allow one to identify conditions where the effect observed for female targets is replicated for male targets. According to the foundations of attribution theory, the greater the covariation between a target and a behavior – the more frequently one observes a target consuming cuteness – the more likely one will be to attribute this behavior to the target's preferences and personality (Kelley 1973; Wilkie and Bodenhausen 2018).

It is possible that describing a single interaction with a consumer of cute products limited my ability to detect effects of cute consumption on perceived gender identity – a single episode of consumption may be insufficient to indicate affiliation for cute products among men, whom, unlike women, are not already expected to like cute products. In future work, multiple interactions or episodes should be detailed to test whether greater covariation increases the likelihood that cute consumption behaviors are attributed to a target's

disposition. In sum, there are still many open questions regarding the consequences of cute consumption behavior on perceptions of identity, as well as broader questions on the impact of gender identity on other relevant consumption outcomes.

Closing statement. By showing the explanatory power of gender identity in this domain, I demonstrate one example of *how* we may progress alongside society to 1) broaden our theorizing to reflect a more inclusive framework of sex, gender, and gender identity which allows for variation in level of identification with the binary categories of female and male, and 2) implement an inclusive theoretical framework within our research to identify individuals who may have been neglected by marketers of our focal offering (e.g., cute offerings) using traditional segmentation and targeting methods.

Understanding why and how individuals gravitate toward the concepts of femininity and of masculinity in order to understand themselves, how they relate to others, and to communicate how they would like to be seen and perceived by others, is critical not only to the study of consumer behavior, but of social science itself. We do not need to disregard consumer's sex as a variable in our research, nor in our consultations with and recommendations to companies. We merely need to evolve our understanding of *how* and *why* sex as a variable acts as it does, which can be accomplished by considering the deeper, theoretical, construct of gender identity.

To my knowledge, the same argument is not being made to such a lively extent regarding race and nationality as categorical variables, but the logic outlined above applies to these individual differences between consumers as well: constructs like racial identity (Helms 1990) and national identity (Meeus, Duriez, Vanbeselaere, and Boen 2010) have been able to capture rich information on how the *exact* relation between an individual and a category impacts the individual's perceptions, attitudes, and behaviors across a range of situations. In

sum, we limit our ability as researchers to understand the processes that guide individual's actions when we assume all individuals identify similarly with a category they occupy. Further work on how each dimension of the rich construct of gender identity, femininity and masculinity, can predict unique outcomes in consumer behavior is thus warranted (e.g., support for androgynous or gender-fluid products and services).

People are not equal representations of a category – they are not all the prototype. The assumption of equal affiliation with the category of female or male that is assumed by a binary categorization of the world's population is crude and limiting. The more we consider the granularity, the dimensionality, the "greyness" of consumer identity, the better able we are to not be left behind by the growing currents in society that advocate for the values of flexibility and of openness to new categories, and even desire categorizations to be disregarded entirely in favor of continuous, greyscale, interpretations of human identity, attitudes, and behavior. Categorization is a fundamental human process (e.g., Rosch 1977) and the latter, more radical, movement may face an uphill battle. Nevertheless, I hope that, by demonstrating one way we can use the richness of research on consumer identities to predict consumption behaviors, I may encourage other consumer behavior researchers to take advantage of the multiple ways we have to capture and understand the influence of gender identity, as well as other salient identities – like racial or national identity – on important consumption behaviors. By doing so, we may better understand the complex, modern, deeply personal, construct of gender that impacts one's identity, self-construct, and goals, as much today as it did when psychological research into sex differences began half a century ago.

References

Abele, Andrea E. (2003), "The Dynamics of Masculine-Agentic and Feminine-Communal Traits: Findings from a Prospective Study," *Journal of Personality and Social Psychology*, *85*(4), 768–76.

Ajzen, Icek (2008), "Consumer Attitudes and Behavior," in *Handbook of Consumer Psychology,* ed. C.P. Haugtvedt, P.M. Herr, and F.R. Cardes, 1st edition, New York: Lawrence Erlbaum Associates, 525-548.

Alley, Thomas R. (1981), "Head Shape and the Perception of Cuteness," *Developmental Psychology, 17*(5), 650–654.

Alley, Thomas R. (1983), "Infantile head shape as an elicitor of adult protection," *Merrill-Palmer Quarterly, 29*(4), 411-427.

Angier, Natalie (2006), "The Cute Factor," *The New York Times*, January 3. https://www.nytimes.com/2006/01/03/science/the-cute-factor.html

Aragón, Oriana R., Margaret S. Clark, Rebecca L. Dyer, and John A. Bargh (2015), "Dimorphous Expressions of Positive Emotion: Displays of Both Care and Aggression in Response to Cute Stimuli," *Psychological Science*, *26*(3), 259–73.

Bakan, David (1966), *The Duality of Human Existence: An Essay on Psychology and Religion*, Chicago: Rand McNally.

Bem, Sandra L., and Ellen Lenney (1976), "Sex Typing and the Avoidance of Cross-Sex Behavior," *Journal of Personality and Social Psychology, 33*(1), 48-54.

Bem Sandra L. (1981) "Gender Schema Theory: A Cognitive Account of Sex Typing," *Psychological Review*, *88*(4), 354-364.

Berridge, Kent C. and Terry E. Robinson (2003), "Parsing Reward," *Trends in Neurosciences*, *26*(9), 507-513.

Berman, Phyllis W. (1980), "Are Women More Responsive than Men to the Young? A Review of Developmental and Situational Variables," *Psychological Bulletin, 88*(3), 668-696.

Berry, Diane S. and Leslie Z. McArthur (1985), "Some Components and Consequences of a Babyface," *Journal of Personality and Social Psychology, 48*(2), 312-323.

Berry, Diane S. and Leslie Z. McArthur (1986), "Perceiving Character in Faces: The Impact of Age-Related Craniofacial Changes on Social Perception," *Psychological Bulletin*, *100*(1), 3-11.

Blanchard-Fields, Fredda, Lynda Suhrer-Roussel, and Christopher Hertzog (1994), "A Confirmatory Factor Analysis of the Bem Sex Role Inventory: Old Questions, New Answers*," Sex Roles*, *30*(5/6), 423-457.

Block, Jeanne H. (1983), "Differential Premises Arising from Differential Socialization of the Sexes: Some Conjectures," *Child Development*, *54*(6), 1335–1354.

Borgi, Marta, Irene Cogliati-Dezza, Victoria Brelsford, Kerstin Meints, and Francesca Cirulli (2014), "Baby Schema in Human and Animal Faces Induces Cuteness Perception and Gaze Allocation in Children," *Frontiers in Psychology*, *5*, 1-13.

Bosson, Jennifer K., and Kenneth S. Michniewicz (2013), "Gender Dichotomization at the Level of Ingroup Identity: What It Is, and Why Men Use It More Than Women," *Journal of Personality and Social Psychology, 105*(3), 425-442.

Brosch, Tobias, David Sander, and Klaus R. Scherer (2007), "That Baby Caught My Eye... Attention Capture By Infant Faces," *Emotion, 7*(3), 685-689.

Brough, Aaron, James E.B. Wilkie, JingJing Ma, Matthew Isaac, and David Gal (2016), "Is Eco-Friendly Unmanly? The Green-Feminine Stereotype and Its Effect on Sustainable Consumption," *Journal of Consumer Research, 43*(3), 567-582.

Buckley, Ralf C. (2016), "Aww: The Emotion of Perceiving Cuteness," *Frontiers in Psychology*, *7*(Article 1740), 1-3.

Buss, David M. (1994), *The Evolution of Desire*, New York: Basic Books.

Calder, Bobby J., and Robert E. Burnkrant (1979), "Interpersonal Influence on Consumer Behavior: An Attribution Theory Approach," *Journal of Consumer Research, 4*(1), 29-38.

Chmielewski, Michael, and Sarah C. Kucker (2020), "An Mturk Crisis? Shifts in Data Quality and the Impact on Study Results," *Social Psychological and Personality Science*, *11*(4), 464-473.

Cho, Sookyung (2012), "Aesthetic and Value Judgment of Neotenous Objects: Cuteness as a Design Factor and Its Effects on Product Evaluation," *Doctoral thesis* (University of Michigan).

Choi, Namok and Dale. R. Fuqua (2003), "The Structure of the Bem Sex Role Inventory: A Summary Report of 23 Validation Studies," *Educational and Psychological Measurement*, *63*(5), 872–887.

Choi, Namok, Dale R. Fuqua, and Jody L. Newman (2007), "Hierarchical Confirmatory Factor Analysis of the Bem Sex Role Inventory," *Educational and Psychological Measurement*, *67*(5), 818–832.

Cialdini, Robert B. (2012), "The Focus Theory of Normative Conduct," in *Handbook of Theories of Social Psychology*, ed. Paul A.M. van Lange, Arie W. Kruglanski and E. Tory Higgins, Vol. 2, London: SAGE Publications, 295–312.

Coleman, Catherine, Eileen Fischer, and Linda Tuncay Zayer, "A Research Agenda for (Gender) Troubled Times: Striving for a Better Tomorrow," *Journal of Association of Consumer Research, 6*(2), 205-210.

Cowley, Elizabeth (2005), "Views from Consumers next in Line: The Fundamental Attribution Error in a Service Setting," *Journal of the Academy of Marketing Science*, *33*(2), 139–52.

Dale, Joshua P., Joyce Goggin, Julia Leyda, Anthony McIntyre, and Diane Negra (2017), *The Aesthetics and Affects of Cuteness*, Routledge: New York.

Diekman, Amanda B. and Alice H. Eagly (2006), "Stereotypes as Dynamic Constructs: Women and Men of the Past, Present, Future," *Personality and Social Psychology Bulletin, 26*(10), 1171-1188.

Diekman, Amanda B. and Wind Goodfriend (2006), "Rolling with the Changes: A Role Congruity Perspective on Gender Norms," *Psychology of Women Quarterly, 30*(4), 369-383.

DiSalvo, Carl, and Francine Gemperle (2003), "From Seduction to Fulfillment: the Use of Anthropomorphic Form in Design," in *Proceedings of the 2003 International Conference on Designing Pleasurable Products and Interfaces*, Pittsburgh, PA: ACM Press, 67-72.

Donnelly, Kristin and Jean M. Twenge (2016), "Masculine and Feminine Traits on the Bem Sex Role Inventory, 1993-2012: A Cross-Temporal Meta-Analysis," *Sex Roles*, *76*(9), 556-565.

Eagly, Alice H. (1987), *Sex Differences in Social Behavior: A Social-Role Interpretation*, Hillsdale, NJ: Erlbaum.

Eagly, Alice H. and Steven J. Karau (2002), "Role Congruity Theory of Prejudice Toward Female Leaders," *Psychological Review*, *109*(3), 573-598.

Eagly, Alice H., Wendy Wood, and Amanda B. Diekman (2000), "Social Role Theory of Sex Differences and Similarities: A Current Appraisal," in *The Developmental Social*

Psychology of Gender, ed. Thomas Eckes and Henry M. Trautner, Mahwah, NJ: Erlbaum, 123-174.

Eibl-Eibesfeldt, Irenaus (1989), *Human Ethology*, De Gruyter; New York.

Escalas, Jennifer Edson and James R Bettman (2003), "You Are What They Eat: The Influence of Reference Groups on Consumers' Connections to Brands," *Journal of Consumer Research, 13(*3), 339-348.

Fazio, Russell H. and Michael A. Olson (2014), "The MODE Model: Attitude-Behavior Processes as a Function of Motivation and Opportunity," in *Dual Process Theories of the Social Mind*, ed. Jeffrey W. Sherman, Bertram Gawronski and Yaacov Trope, New York: Guilford Press, 155-172.

Feldman, S. Shirley, and Sharon Churnin Nash (1978), "Interest in Babies During Young Adulthood," *Child Development*, *49*(3), 617-622.

Fiske, Susan T. (1998), "Stereotyping, Prejudice, and Discrimination," in *The Handbook of Social Psychology*, ed. Daniel T. Gilbert, Susan T. Fiske, and Gardner Lindzey, 4th edition, Boston: McGraw-Hill, 357-411.

Fiske, Susan T., Amy J. C. Cuddy, Peter Glick, and Jun Xu (2002), "A Model of (Often Mixed) Stereotype Content: Competence and Warmth Respectively Follow from Perceived Status and Competition," *Journal of Personality and Social Psychology, 82*(6), 878-902.

Fugate, Douglas L., and Joanna Phillips (2010), "Product Gender Perceptions and Antecedents of Product Gender Congruence," *Journal of Consumer Marketing*, *27*(3), 251-261.

Gal, David and James Wilkie (2010), "Real Men Don't Eat Quiche: Regulation of Gender-Expressive Choices by Men," *Social Psychological and Personality Science*, *1*(4) 291-301.

Gallagher, Natalie M. and Galen V. Bodenhausen (2021), "Gender Essentialism and Mental Representation of Transgender Women and Men: A Multimethod Investigation of Stereotype Content," *Cognition, 217*(12), Article 104887.

Gaucher, Danielle, Justin Friesen, and Aaron C. Kay (2011), "Evidence That Gendered Wording in Job Advertisements Exists and Sustains Gender Inequality," *Journal of Personality and Social Psychology*, *101*(1), 109–28.

Gentry, James W., Mildred Doering, and Terrence V. O'Brien (1978), "Masculinity and Femininity Factors in Product Perception and Self Image," in *NA – Advances in Consumer Research*, ed. Kent Hunt, Vol. 5, Ann Arbor, MI: Association for Consumer Research, 326-332.

Gill, Sandra, Jean Stockard, Miriam Johnson and Suzanne Williams (1987), "Measuring Gender Differences: The Expressive Dimension and Critique of Androgyny Scales," *Sex Roles*, *17*(7), 375-400.

Gilbert, Daniel T. and Patrick S. Malone (1995), "The Correspondence Bias", *Psychological Bulleti*n, *117*(1), 21-38.

Glick, Peter, and Susan T. Fiske (1999), "Gender, Power Dynamics, and Social Interaction," in *Revisioning Gender*, ed. Myra M. Ferree, Judith Lorber, and Beth B. Hess, Thousand Oaks, CA: Sage, 365-398.

Glocker, Melanie L., et al. (2009a), "Baby Schema in Infant Faces Induces Cuteness Perception and Motivation for Caretaking in Adults", *Ethology*, *115* (3), 257-263.

Glocker, Melanie L. et al. (2009b), "Baby Schema Modulates the Brain Reward System in Nulliparous Women," *Proceedings of the National Academy of Sciences, 106*(2), 9115-9119.

Goldberg, Susan, Susan L. Blumberg, and Alberto Kriger (1982), "Menarche and Interest in Infants: Biological and Social Influences," *Child Development, 53*(6), 1544-1550.

Golden, Linda L., Neil Allison, and Mona Clee (1979), "The Role of Sex Role Self-Concept in Masculine and Feminine Product Perceptions", in *NA – Advances in Consumer Research*, ed. William L. Wilkie, Vol. 6, Ann Abor, MI: Association for Consumer Research, 599-605.

Golle, Jessika, Fabian Probst, Fred W. Mast, Janek S. Lobmaier (2015), "Preference for Cute Infants Does Not Depend on Their Ethnicity or Species: Evidence from Hypothetical Adoption and Donation Paradigms," *PLoS ONE*, *10*(4), 1-19.

Govers, Pascalle, Paul Hekkert, and Jan P.L. Schoormans (2003), "Happy, Cute and Tough: Can Designers Create a Product Personality that Consumers Understand," in *Design and Emotion: The Design of Everyday Things*, ed. Deana McDonagh, Paul Hekkert, Jeroen van Erp and Diane Gyi, London: Taylor Francis, 345-349.

Granot, Elad, Thomas Brashear Alejandro and La Toya M. Russell (2014), "A Socio-Marketing Analysis of the Concept of *Cute* and Its Consumer Culture Implications," *Journal of Consumer Culture, 14*(1), 66-87.

Greenwald, Anthony G., Brian A. Nosek, and Mahzarin R. Banaji (2003), "Understanding and Using the Implicit Association Test: An Improved Scoring Algorithm", *Journal of Personality and Social Psychology*, *85*(2), 197-216.

Grohmann, Bianca (2009), "Gender Dimensions of Brand Personality," *Journal of Marketing Research, 46*(1), 105-119.

Hahn, Adam and Bertram Gawronski (2019), "Facing One's Implicit Biases: From Awareness to Acknowledgement," *Journal of Personality and Social Psychology*, *116*(5), 769-794.

Hahn, Amanda C., Dengke Xiao, Reiner Sprengelmeyer, and David I. Perrett (2013), "Gender Differences in The Incentive Salience of Adult and Infant Faces," *Quarterly Journal of Experimental Psychology*, *66*(1), 200-208.

Hahn, Amanda C., Lisa M. DeBruine, Claire I. Fisher, and Benedict C. Jones (2015), "The Reward Value of Infant Facial Cuteness Tracks Within-Subject Changes in Women's Salivary Testosterone," *Hormones and Behavior, 67*(1), 54-59.

Halim, May Ling, Diane N. Ruble, Catherine S. Tamis-LeMonda, Kristina M. Zosuls, Leah E. Lurye, and Faith K. Greulich (2014), "Pink Frilly Dresses and the Avoidance of All Things "Girly": Children's Appearance Rigidity and Cognitive Theories of Gender Development," *Developmental Psychology, 50*(4), 1091-1101.

Halim, May Ling, Diane N. Ruble, and David M. Amodio (2011), "From Pink Frilly Dresses to 'One of The Boys': A Social-Cognitive Analysis of Gender Identity Development and Gender Bias," *Social and Personality Psychology Compass, 5*(11), 933-949.

Helms, Janet E. (1990), *Black and White Racial Identity: Theory, Research, and Practice*, Preager: Westport, CT.

Hildebrandt, Katherine A. (1983), "Effect of Facial Expression Variations on Ratings of Infants' Physical Attractiveness," *Developmental Psychology, 15*(3), 414-417.

Hildebrandt, Katherine A. and Hiram E. Fitzgerald (1977), "Gender Bias in Observers' Perceptions of Infants' Sex: It's a Boy Most of the Time," *Perceptual and Motor Skills, 45*(2)*,* 472-474.

Hildebrandt, Katherine A. and Hiram E. Fitzgerald (1978), "Adults' Response to Infants' Varying in Perceived Cuteness," *Behavioral Processes, 3*(2)*,* 159-172.

Hildebrandt, Katherine A. and Hiram E. Fitzgerald (1979), "Adults' Perception of Infant Sex and Cuteness," *Sex Roles, 5*(4)*,* 471-481.

Hinde, Robert A. and L.A. Barden (1985), "The Evolution of the Teddy Bear," *Animal Behaviour*, *33*(4), 1371–73.

Holt, Cheryl L. and Jon B. Ellis (1998), "Assessing the Current Validity of the Bem Sex-Role Inventory," *Sex Roles, 39*(11), 929-941.

Howe, Lauren C. and Jon A. Krosnick (2017), "Attitude Strength", *Annual Review of Psychology*, *68*, 327-251.

Hyde, Janet S. (2014), "Gender Similarities and Differences," *Annual Review of Psychology, 65*, 373-398.

Karraker, Katherine Hildebrandt and Marilyn Stern (1990), "Infant Physical Attractiveness and Facial Expression: Effects on Adult Perceptions," *Basic and Applied Social Psychology*, *11*(4), 371–85.

Keating, Caroline F., David W. Randall, Timothy Kendrick, and Katharine A. Gutshall (2003), "Do Babyfaced Adults Receive More Help? The (Cross-Cultural) Case of the Lost Resume," *Journal of Nonverbal Behavior, 27*(2), 89-109.

Kelley, Harold H. and John L. Michela (1980), "Attribution Theory and Research", *Annual Review of Psychology*, *31*(1), 457–501.

Kim, Sara, and Ann L. McGill (2011), "Gaming With Mr. Slot or Gaming The Slot Machine? Power, Anthropomorphism, and Risk Perception," *Journal of Consumer Research*, *38*(1), 94-107.

Kimmel, Michael S. (1994), "Masculinity as Homophobia: Fear, Shame, and Silence in the Construction of Gender Identity," in *Theorizing Masculinities*, ed. Harry Brod and Michael Kaufman, Thousand Oaks, CA: Sage, 119–41.

Kinsella, Sharon (1995), ''Cuties in Japan,'' in *Women, Media and Consumption in Japan*, ed. Lise Skov and Brian Moeran, Honolulu, Hawaii: University of Hawaii Press, 220-255.

Kringelbach, Morten L., Eloise A. Stark, Catherine Alexander, Marc H. Bornstein, and Alan Stein (2016), "On Cuteness: Unlocking the Parental Brain and Beyond," *Trends in Cognitive Sciences, 20*(7), 545-558.

Kuraguchi, Kana, Kosuke Taniguchi, and Hiroshi Ashida (2015), "The Impact of Baby Schema on Perceived Attractiveness, Beauty, and Cuteness in Female Adults," *SpringerPlus*, *4*(1), 164-171.

Kurt, Didem, Jeffrey Inman, and Jennifer J. Argo (2011), "The Influence of Friends on Consumer Spending: The Role of Agency-Communion Orientation and Self-Monitoring," *Journal of Marketing Research*, *48*(4), 741–754.

Langlois Judith H. and A. Chris Downs (1980), "Mothers, Fathers and Peers as Socialization Agents of Sex-Typed Play Behaviors in Young Children," *Child Development, 51*(4), 1237-1247.

Langlois Judith H., Jean M. Ritter, Rita J. Casey and Douglas B. Swain (1995), "Infant Attractiveness Predicts Maternal Behaviors and Attitudes," *Developmental Psychology, 31*(3), 464-472.

Leaper, Campbell (2013), "Gender Development During Childhood," in *The Oxford Handbook of Developmental Psychology, Vol. 2: Self and Other*, ed. Philip D. Zelazo, Oxford: Oxford University Press.

Lehmann, Vicky, Elisabeth M.J. Huis, and A.J.J.M. Vingerhoets (2013), "The Human and Animal Baby Schema Effect: Correlates of Individual Differences," *Behavioural Processes, 94*(1), 99-108.

Lerner, Jennifer S. and Dacher Keltner (2001), "Fear, Anger, and Risk," *Journal of Personality and Social Psychology, 81*(1), 146-159.

Levy, Sidney (1959), "Symbols for Sale", *Harvard Business Review, 37*(4), 117-124.

Levy, Boaz, Dan Ariely, Nina Mazar, Won Chi, Scott Lukas, and Igor Elman (2008), "Gender Differences in the Motivational Processing of Facial Beauty," *Learning and Motivation, 39*(2), 136-145.

Lieven, Theo, Bianca Grohmann, Andreas Herrmann, Jan R. Landwehr, and Miriam Van Tilburg (2014), "The Effect of Brand Gender on Brand Equity," *Psychology & Marketing, 31*(5), 371-385.

Lieven, Theo, Bianca Grohmann, Andreas Herrmann, Jan R. Landwehr, and Miriam Van Tilburg (2015), "The Effect of Brand Design on Brand Gender Perceptions and Brand Preference," *European Journal of Marketing, 49*(1), 146-169.

Lishner, David A., C. Daniel Batson, and Elizabeth Huss (2011), "Tenderness and Sympathy: Distinct Empathic Emotions Elicited by Different Forms of Need," *Personality and Social Psychology Bulletin*, *37*(5), 614–625.

Lishner, David A., Luis v. Oceja, E. L. Stocks, and Kirstin Zaspel (2008), "The Effect of Infant-like Characteristics on Empathic Concern for Adults in Need," *Motivation and Emotion*, *32*(4), 270–277.

Little, Anthony C. (2012), "Manipulation of Infant-Like Traits Affects Perceived Cuteness of Infant, Adult and Cat Faces," *Ethology*, *118*(8), 775-782.

Lobmaier, Janek S., Reiner Sprengelmeyer, Ben Wiffen, and David I. Perrett (2010), "Female and Male Responses to Cuteness, Age and Emotion in Infant Faces," *Evolution and Human Behavior, 31*(1), 16-21.

Loewenstein, George F., Elke U. Weber, Christopher K. Hsee, and Eamon Welch (2001), "Risk as Feelings," *Psychological Bulletin*, *127*(2), 267–286.

London, Bonita, Geraldine Downey, Rainer Romero-Canyas, Aneeta Rattan, and Diana Tyson, (2012), "Gender-Based Rejection Sensitivity and Academic Self-Silencing in Women," *Journal of Personality and Social Psychology*, *102*(5), 961–979.

Lorenz, Konrad (1943), "Innate Forms of Potential Experience", *Ethology*, 5, 235–409 (in German).

Lorenz, Konrad (1971), *Studies in Animal and Human Behavior* (Harvard University Press, Cambridge, MA), pp. 154-160.

Luo, Li Zhu, Hong Li, and Kang Lee (2011), "Are Children's Faces Really More Appealing Than Those of Adults? Testing the Baby Schema Hypothesis Beyond Infancy," *Journal of Experimental Child Psychology*, *110*(1), 115–124.

Lytton, Hugh, and David M. Romney (1991), "Parents' Differential Socialization of Boys and Girls: A Meta-Analysis," *Psychological Bulletin, 109*(2), 267-296.

Maeng, Ahreum and Pankaj Aggarwal (2018), "Facing Dominance: Anthropomorphism and the Effect of Product Face Ratio on Consumer Preference," *Journal of Consumer*

Research, *44*(5), 1104–1122.

Marcus, Aaron (2002), "The Cult of Cute: The Challenge of User Experience Design," *Interactions*, *9*(6), 29-34.

Marcus, Aaron, Masaaki Kurosu, Xiaojuan Ma, and Ayako Hashizume (2017), *Cuteness Engineering*, Springer, Cham.

Marcus, Aaron, and Xiaojuan Ma (2016), "Cuteness Design in the UX: An Initial Analysis," in *Design, User Experience, and Usability: 5th International Conference, DUXU 2016, Toronto, Canada*, *Part II*, Vol. 9747, ed. A. Marcus, Switzerland: Springer, 46-56.

Martin, Brett A.S. and Juergen Gnoth (2009), "Is the Marlboro Man the Only Alternative? The Role of Gender Identity and Self-Construal Salience in Evaluations of Male Models," *Marketing Letters*, *20*(4), 353–367.

McArthur, Leslie Z. and Karen Apatow (1983), "Impressions of Baby-Faced Adults," *Social Cognition*, *2*(4), 315-342.

McCabe, Viki (1988), "Facial Proportions, Perceived Age, and Caregiving," in *Resources For Ecological Psychology: Social And Applied Aspects of Perceiving Faces*, ed. Thomas R. Alley, Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc., 89-95.

McCreary, Donald R. (1994), "The Male Role and Avoiding Femininity," *Sex Roles*, *31*(9), 517-529.

McShane, Blakeley B., and Ulf Böckenholt (2017), "Single-Paper Meta-Analysis: Benefits

for Study Summary, Theory Testing, and Replicability," *Journal of Consumer Research, 43*(6), 1048-1063.

Meeus, Joke, Bart Duriez, Norbert Vanbeselaere, and Filip Boen (2010), "The Role of National Identity Representation in the Relation Between In-Group Identification and Out-Group Derogation: Ethnic Versus Civic Representation," *British Journal of Social Psychology*, *49*(2), 305-320.

Meyers-Levy, Joan (1988), "The Influence of Sex Roles on Judgment," *Journal of Consumer Research, 14*(3), 522-530.

Meyers-Levy, Joan and Barbara Loken (2015), "Revisiting Gender Differences: What I Know and What Lies Ahead," *Journal of Consumer Psychology, 25*(1), 129-149.

Nash, Sharon Churnin, and S. Shirley Feldman (1980), "Responsiveness to Babies: Life-Situation Specific Sex Differences in Adulthood," *Sex Roles, 6*(5), 751-758.

Nenkov, Gergana Y. and Maura L. Scott (2014), "'So Cute I Could Eat It Up': Priming Effects of Cute Products on Indulgent Consumption," *Journal of Consumer Research, 41*(8), 326-341.

Nikolova, Hristina and Cait Lamberton (2016), "Men and the Middle: Gender Differences in Dyadic Compromise Effects," *Journal of Consumer Research*, *43*(3), 355–71.

Nittono, Hiroshi and Tanaka, Kumiko (2010), "Psychophysiological Responses to Kawaii (Cute) Visual Images," *International Journal of Psychophysiology*, *77*(3), 268–69.

Nittono, Hiroshi, Fukushima, Michiko, Yano, Akihiro and Moriya, Hiroki (2012), "The Power of Kawaii: Viewing Cute Images Promotes Careful Behavior and Narrows Attentional Focus', *PLoS ONE*, *7*(9), e46362.

Nittono, Hiroshi (2016), "The Two-Layer Model of 'Kawaii': A Behavioral Science Framework for Understanding Kawaii and Cuteness," *East Asian Journal of Popular Culture, 2*(1), 79-95.

Nosek, Brian A., Anthony G. Greenwald, Mahzarin R. Banaji (2005, "Understanding and Using the Implicit Association Test: Method Variables and Construct Validity," *Personality and Social Psychology Bulletin, 31*(2), 166-180.

Oxford English Dictionary Online (2019), Oxford University Press, https://en.oxforddictionaries.com/definition/cute (accessed April 04, 2019).

Parsons, Christine E., Katherine S. Young, Nina Kumari, Alan Stein, and Morten L. Kringelbach (2011), "The Motivational Salience of Infant Faces is Similar for Men and Women," *PloS one*, *6*(5), e20632.

Pennebaker, James W., Ryan L. Boyd, Kayla Jordan, and Kate Blackburn (2015), *The Development and Psychometric Properties of LIWC2015*, University of Texas at Austin: Austin, TX.

Pleck, Joseph H., Freya L. Sonenstein, and Leighton C. Ku (1993), "Masculinity Ideology: Its Impact on Adolescent Males' Heterosexual Relationships," *Journal of Social Issues*, *49*(3), 11-29.

Ridgeway, Cecilia L. (2013), "Framed Before I Know it: Gender Shapes Social Relations," *Gender and Society, 23*(2), 145-160.

Ridgeway, Cecilia L. and Shelley J. Correll (2004), "Unpacking the Gender System: A Theoretical Perspective On Cultural Beliefs in Social Relations," *Gender & Society, 18*(4), 510-531.

Ritter, Jean M., Rita J. Casey, and Judith H. Langlois (1991), "Adults' Responses to Infants Varying in Appearance of Age and Attractiveness," *Child Development, 62*(1), 68-82.

Rose, Amanda J., and Karen D. Rudolph (2006), "A Review of Sex Differences in Peer Relationship Processes: Potential Trade-Offs for the Emotional and Behavioral Development of Girls and Boys," *Psychological Bulletin, 132*(1), 98-131.

Ross, Lee (1977), "The Intuitive Psychologist and His Shortcomings: Distortions in the Attribution Process," in *Advances in Experimental Social Psychology*, ed. Leonard Berkowitz, Vol. 10, New York: Academic Press, 173–220.

Rozin, Paul, Julia M. Hormes, Myles S. Faith, and Brian Wansink (2012), "Is Meat Male? A Quantitative Multimethod Framework to Establish Metaphoric Relationships," *Journal of Consumer Research*, *39*(3), 629–643.

Scott, Maura L. and Gergana Y. Nenkov (2016), "Using Consumer Responsibility Reminders to Reduce Cuteness-Induced Indulgent Consumption," *Marketing Letters*, *27*(1), 323-336.

Schmidt, Frank (1996), "Statistical Significance Testing and Cumulative Knowledge in Psychology: Implications for Training of Researchers," *Psychological Methods, 1*(2), 115-129.

Sherman, Gary D., Jonathan Haidt, and James A. Coan (2009), "Viewing Cute Images Increases Behavioral Carefulness," *Emotion, 9* (2), 282-286.

Sherman, Gary D., and Jonathan Haidt (2011), "Cuteness and Disgust: The Humanizing and Dehumanizing Effects of Emotion," *Emotion Review*, *3*(3), 245-251.

Sherman, Gary D., Jonathan Haidt, Ravi Iyer, and James A. Coan, (2013), "Individual Differences in The Physical Embodiment of Care: Prosocially Oriented Women Respond to Cuteness by Becoming More Physically Careful", *Emotion*, *13*(1), 151-158.

Shields, Stephanie A. (2002), *Speaking from the Heart: Gender and the Social Meaning of Emotion,* University Press: Cambridge.

Sobal, Jeffery (2005), "Men, Meat, and Marriage: Models of Masculinity," *Food and Foodways*, *13*(1), 135–58.

Snell, William E. Jr. and Sheryn S. Belk, Amy Flowers, and James Warren (1988), "Women's and Men's Willingness to Self-Disclose to Therapists and Friends: The Moderating Influence of Instrumental, Expressive, Masculine, and Feminine Topics," *Sex Roles, 18*(11), 769-776.

Spence, Janet T. (1984), "Masculinity, Femininity, and Gender-Related Traits: A Conceptual Analysis and Critique of Current Research," *Progress in Experimental Personality Research, 13*(1), 1-97.

Spence, Janet T., and Robert L. Helmreich (1979), *Masculinity and Femininity: Their Psychological Dimensions, Correlates, and Antecedents*. University of Texas Press.

Spence, Janet T., and Robert L. Helmreich (1980), "Masculine Instrumentality and Feminine Expressiveness: Their Relationships with Sex Role Attitudes and Behaviors," *Psychology of Women Quarterly*, *5*(2), 147-163.

Spence, Janet T., and Camille E. Buckner (2000), "Instrumental and Expressive Traits, Trait Stereotypes, and Sexist Attitudes What Do They Signify?" *Psychology of Women Quarterly, 24*(1), 44-62.

Spielmann, Nathalie, Susan Dobscha, and Tina M. Lowrey (2021), "Real Men Don't Buy "Mrs. Clean": Gender Bias in Gendered Brands," *Journal of the Association for Consumer Research, 6*(2), 211-222.

Sprengelmeyer, Reiner, David I. Perrett, Elena C. Fagan, R.E. Cornwell, J. S. Lobmaier, A. Sprengelmeyer, H.B.M. Aasheim, et al. (2009), "The Cutest Little Baby Face," *Psychological Science, 20*(2), 149-155.

Sprengelmeyer, Reiner, Jennifer Lewis, Amanda Hahn, and David I. Perrett (2013), "Aesthetic and Incentive Salience of Cute Infant Faces: Studies of Observer Sex, Oral Contraception and Menstrual Cycle", *PLoS ONE*, *8*(5), e65844.

Steines, Kamilla K. (2017), "Too Cute for Words: Cuteness Evokes the Kama Muta Emotion and Motivates Communal Sharing," *Masters thesis* (University of Oslo).

Stern, Barbara B., Sonia Tewari, and Stephen J. Gould (1993), "Sex-typed Service Images: An Empirical Investigation of Self-Service Variables," *Service Industries Journal, 13*(3), 74-96.

Sternglanz, Sarah Hall, James L. Gray, and Melvin Murakami (1977), "Adult Preferences for Infantile Facial Features: An Ethological Approach," *Animal Behavior*, *25*(1), 108-115.

Taylor, Marylee C., and Judith A. Hall (1982), "Psychological Androgyny: Theories, Methods, and Conclusions," *Psychological Bulletin, 92*(2), 347-366.

Tenenbaum, Harriet R., and Campbell Leaper, (2002) "Are Parents' Gender Schemas Related to Their Children's Gender-Related Cognitions? A Meta-Analysis," *Developmental Psychology, 38*(4), 615-630.

Treisman, Rachel (2021), "Lego Says It Will Work to Rid Its Toys of Harmful Gender Bias," *National Public Radio,* October 12,

https://www.npr.org/2021/10/12/1045244110/lego-toys-survey-gender-bias-stereotypes

Twenge, Jennifer M. (1997), "Changes in Masculine and Feminine Traits over Time: a Meta-analysis," *Sex Roles*, *36*(5), 305-325.

Twenge, Jennifer M. (2001), "Changes in Women's Assertiveness in Response to Status and Roles: A Cross-temporal Meta-analysis, 1931–1993," *Journal of Personality and Social Psychology*, *81*(1), 133–145.

Ulrich, Isabelle (2013), "The Effect of Consumer Multifactorial Gender and Biological Sex on Evaluation of Cross-Gender Brand Extensions," *Psychology and Marketing, 30*(9), 794-810.

Vandello, Joseph A. and Jennifer K. Bosson (2013), "Hard Won and Easily Lost: A Review and Synthesis of Theory and Research on Precarious Manhood," *Psychology of Men & Masculinity, 14*(2), 101-113.

Van Tilburg, Miriam, Theo Lieven, Andreas Herrmann, and Claudia Townsend (2015), "Beyond "Pink It and Shrink It" Perceived Product Gender, Aesthetics, and Product Evaluation," *Psychology & Marketing, 32*(4), 422-437.

Vitz, Paul C. and Donald Johnston (1965), "Masculinity of Smokers and the Masculinity of Cigarette Images," *Journal of Applied Psychology, 49*(3), 155-159.

Wang, Tingting (2014), "Motivational Antecedents and Behavioral Consequences of Cuteness in Marketing", *Doctoral thesis* (University of Hong Kong).

Wang, Tingting, and Mukhopadhyay Anirban (2015), "How Consumers Respond to Cute Products," in *The Psychology of Design: Creating Consumer Appeal*, ed. Rajeev Batra, Colleen Seifert, Diann Brei, New York: Routledge, 149-168.

Wang, Tingting, Anirban Mukhopadhyay, and Vanessa M. Patrick (2017), "Getting Consumers to Recycle NOW! When and Why Cuteness Appeals Influence Prosocial and Sustainable Behavior," *Journal of Public Policy & Marketing*, *36*(2), 269-283.

White, Katherine and Darren Dahl (2006), "To Be or Not Be? The Influence of Dissociative Reference Groups on Consumer Preferences," *Journal of Consumer Research*, *16*(4), 404–414.

Wilkie, James E.B. and Galen V. Bodenhausen (2012), "Are Numbers Gendered?" *Journal of Experimental Psychology: General*, *141*(2), 206-210.

Windolf, Jim (2009), "Addicted to Cute," *Vanity Fair,* December, https://www.vanityfair.com/news/2009/12/cuteness-200912.

Winterich, Karen Page, Vikas Mittal, and William T. Ross (2009), "Donation Behavior toward In-Groups and out-Groups: The Role of Gender and Moral Identity," *Journal of Consumer Research*, *36*(2), 199–214.

Wood, Wendy and Alice H. Eagly (2009), "Gender Identity," *Handbook of Individual Differences in Social Behavior*, (ed.) Mark R. Leary and Rick H. Hoyle, 1st edition, New York: Guilford Press, 109-125.

Wood, Wendy and Alice H. Eagly (2012), "Biosocial Construction of Sex Differences and Similarities," in *Advances in Experimental Social Psychology*, ed. James M. Olson and Mark P. Zanna, Vol. 46, Oxford: Elsevier Academic Press, 55-123.

Woodgate, Danielle (2017), "Hello Kitty's Multibillion-Dollar Success Story," *Financial Review* (December 17), (accessed April 30 2019), [available at

https://www.afr.com/lifestyle/hello-kittys-multibilliondollar-success-story-20171203-gzxp84].

Young, Katherine S., Christine E. Parsons, Else-Marie Jegindoe Elmholdt, Mark W. Woolrich, Tom J. van Hartevelt, Angus B.A. Stevner, Alan Stein and Morten L. Kringelbach (2016), "Evidence for a Caregiving Instinct: Rapid Differentiation of Infant from Adult Vocalizations Using Magnetoencephalography," *Cerebral Cortex*, *26*(3), 1309-1321.

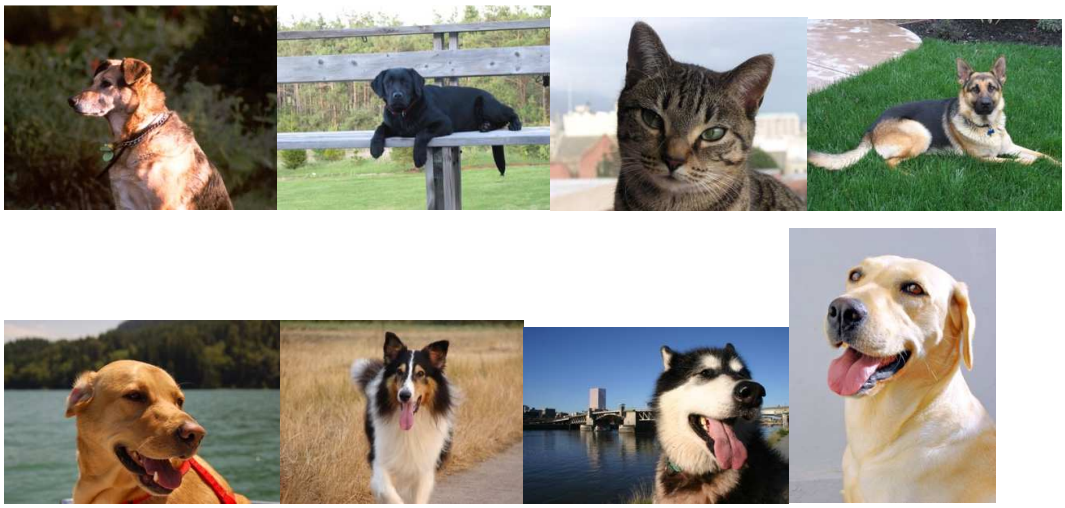
Zickfeld, Janis H, Jonas R Kunst, and Sigrid M Hohle (2018), "Too Sweet to Eat: Exploring the Effects of Cuteness on Meat Consumption," *Appetite*, *120*(1), 181–195.

Appendices

Appendix A. Stimuli Set: AN (Sherman, Haidt, and Coan 2009); liking of stimuli set used as dependent variable in Study sets 1 & 2 (except 2e)

High cute images:

Low cute images:



The order of all images was randomized.

Appendix B. Stimuli set BA (cute) and set of control stimuli; liking of stimuli set used as dependent variable in studies 2d, and in 2f, but combined with stimuli set PR1 in Appendix C.

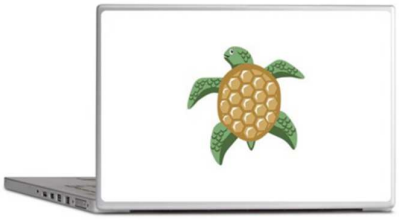
Cute images:

Control/filler images:

The order of all images was randomized.

Appendix C. Stimuli set: PR1; liking of stimuli set used as dependent variable in Study 2e (product choice task) and Study 2f (image evaluation task)

High cute option	Low cute option
	
	
	
	

A set of pretests were conducted to confirm that the above product pairs differed in perceived cuteness, but not perceived femininity. In each pretest, participants viewed a set of products sequentially and rated each product on perceived cuteness, familiarity, and either expensiveness or femininity. That is, participants saw one product per trial and rated it on all three measures. Our aim was to identify product pairs that differed in perceived cuteness, but not in perceived femininity. For this reason, only the responses to the perceived cuteness and perceived femininity items are reported below.

<u>Cuteness</u>

Keychains: N = 75[a], $M_{\text{low cute}}$ = 4.85, $M_{\text{high cute}}$ = **6.24**, $t(147) = 3.00$, $p = .003$

Water bottles: N = 63, $M_{\text{low cute}}$ = 2.68, $M_{\text{high cute}}$ = **4.42**, $t(98) = 2.98$, $p = .004$

Greeting cards: N = 75[a], $M_{\text{low cute}}$ = 3.63, $M_{\text{high cute}}$ = **5.71**, $t(147) = 4.73$, $p < .001$

Mugs: N = 76, $M_{\text{low cute}}$ = 5.49, $M_{\text{high cute}}$ = **6.57**, $t(150) = 4.75$, $p < .001$

Laptop stickers: N = 50[b], $M_{\text{low cute}}$ = 5.12, $M_{\text{high cute}}$ = **6.46**, $t(96) = 2.34$, $p = .021$

Phone cases: N = 57, $M_{\text{low cute}}$ = 2.05, $M_{\text{high cute}}$ = **7.39**, $t(112) = 11.08$, $p < .001$

<u>Femininity</u>

Keychains: N = 75[a], $M_{\text{low cute}}$ = 7.28, $M_{\text{high cute}}$ = 7.17, $t(147) = -.26$, $p = .793$

Water bottles: N = 63, $M_{\text{low cute}}$ = 2.68, $M_{\text{high cute}}$ = 4.42, ***t*(98) = 2.98, *p* < .001***

Greeting cards: N = 75[a], $M_{\text{low cute}}$ = 8.56, $M_{\text{high cute}}$ = 8.31, $t(148) = -.83$, $p = .407$
Mugs: N = 76, $M_{\text{low cute}}$ = 5.39, $M_{\text{high cute}}$ = 5.53, $t(150) = .28$, $p = .776$
Laptop stickers: N = 50[b], $M_{\text{low cute}}$ = 4.88, $M_{\text{high cute}}$ = 5.36, $t(95) = .88$, $p = .380$
Phone cases: N = 57, $M_{\text{low cute}}$ = 2.67, $M_{\text{high cute}}$ = 3.16, $t(112) = .86$, $p = .393$

[a] = same pretest

*For Study 2e, I conducted the same analysis of the relation between femininity and number of high cute products chosen excluding responses to the water bottle stimuli, given the significant difference in perceived femininity between these two options. The key relation remained unchanged: $B = .09$, $S.E. = .03$, $t(497) = 3.39$, $p < .001$, $\omega^2_p = .02$ [95% C.I. = 0.00-0.05]. For Study 2f, I conducted the same analysis of the relation between femininity and liking of cute stimuli chosen excluding responses to the water bottle stimuli, given the significant difference in perceived femininity between these two options. The key relation remained unchanged: $B = .20$, $S.E. = .04$, $t(497) = 5.52$, $p < .001$, $\omega^2_p = .06$ [95% C.I. = 0.02-0.10].

Appendix D. Gender identity measure used as independent variable in Study Set 2 (a-d): Bem Sex Roles Inventory (Bem 1981)

Instructions: Please rate how well each trait describes you using the scale provided (1 = *never true*, 7 = *always true*).

Feminine traits:

Understanding

Sympathetic

Eager to soothe hurt feelings

Sensitive to the needs of others

Compassionate

Loves children

Affectionate

Gentle

Warm

Tender

Masculine traits:

Assertive

Leadership ability

Dominant

Strong personality

Forceful

Willing to take a stand

Independent

Defends own beliefs

Willing to take risks

Notes: Order of all items were randomized; feminine and masculine items were intermixed.

Appendix E. IAT Stimuli (Experiment 3)

Cute	Bold
	
	
	
	

 PARTY LIKE A PARTY LIKE A PARTY LIKE A	
	
	
	
 TISSUE BOX	

Female names	Male names
Katherine	John
Linda	Robert
Mary	David
Lisa	Jack
Sophia	James
Jessica	Michael
Ashley	Jacob
Emily	Ethan

Appendix F. Stimuli Set PR2: high vs. low cute manipulated between-subjects in Experiment Set 5

High cute	Low cute
 *abcde*	 *abcde*
 *c*	 *c*
 *c*	 *c*
 *e*	 *e*

 *e*	 *e*

Legend: *a* = used in experiment 5a; *b* = used in experiment 5b; *c* = used in experiment 5c; *d* = used in experiment 5d, *e* = used in experiment 5e (only study with no context for cute consumption, allowing a broader variety of products to be used to represent cuteness)

The panda keychains were kindly developed and shared by Huachao Gao (Victoria University) as a manipulation of product cuteness.

Pretest: A single pretest (N = 200 Cloud Research participants) was conducted to confirm the above product pairs that differed significantly in perceived cuteness.

Method. Participants were randomly assigned to view three pairs of products from the figure above in a randomized order. Participants saw one product per trial and rated it on perceived cuteness and familiarity. Only the responses to the perceived cuteness item are pertinent to our investigation; the other measures were collected for purposes related to another research project.

Results.

Shopping bag: N = 99, $M_{\text{low cute}} = 4.40$, $M_{\text{high cute}} = 5.97$, $t(193) = 3.81$, $p < .001$

Mug: N = 101, $M_{\text{low cute}} = 4.32$, $M_{\text{high cute}} = 5.87$, $t(199) = 3.92$, $p < .001$

Laptop sticker: N = 101, $M_{\text{low cute}} = 5.40$, $M_{\text{high cute}} = 6.23$, $t(200) = 2.24$, $p = .026$

Coin purse: N = 99, $M_{\text{low cute}} = 6.50$, $M_{\text{high cute}} = 6.64$, $t(196) = .39$, $p = .698$*

Keychain: N = 99, $M_{\text{low cute}} = 6.84$, $M_{\text{high cute}} = 8.02$, $t(182) = 4.05$, $p < .001$

*The coin purse was only used in Experiment 5c, when the target carried three high or low cute products instead of the usual single high or low cute product. For this reason, I consider the influence of the lack of significant difference in cuteness of the coin bags carried by the

target to be partially mitigated by the presence of two other cute products that were significantly different in perceived cuteness (the shopping bag and keychain).

Appendix G. List of feminine and masculine words coded in Experiment 5e to measure feminine/masculine language (Gaucher, Friesan, and Kay 2011)

Feminine words	**Masculine words**
Affectionate	Adventurous
Child*	Aggress*
Cheer*	Ambitio*
Commit*	Analy*
Communal	Assert*
Compassion*	Athlet*
Connect*	Autonom*
Considerate	Boast*
Cooperat*	Challeng*
Depend*	Compet*
Emotiona*	Confident
Empath*	Courag*
Feminine	Decide
Flatterable	Decisive
Gentle	Decision*
Honest	Determin*
Interpersonal	Dominant
Interdependen*	Domina*
Interpersona*	Force*
Kind	Greedy
Kinship	Headstrong
Loyal*	Hierarch*
Modesty	Hostil*
Nag	Implusive
Nurtur*	Independen*
Pleasant*	Individual*
Polite	Intellect*
Quiet*	Lead*
Respon*	Logic
Sensitiv*	Masculine
Submissive	Objective
Support*	Opinion
Sympath*	Outspoken
Tender*	Persist
Together*	Principle*
Trust*	Reckless
Understand*	Stubborn
Warm*	Superior
Whin*	Self-confiden*
Yield*	Self-sufficien*
Active	Self-relian*

Note. The asterisk denotes the acceptance of all letters, hyphens, or numbers following its appearance.

Appendix H. Stimuli set PR_real: choice of high (vs. low) cute option to donate, used as dependent variable in Experiment 6

Product	High cute option	Low cute option
Pen		
Pencil		
Stress ball		
Sticker		

Toy		

Pretest: A set of pretests were conducted to find the above product pairs that differed in perceived cuteness.

Method. In each pretest, participants viewed a set of products sequentially and rated each product on perceived cuteness, expensiveness, and familiarity. Participants saw one product per trial and rated it on all three measures. Only the responses to the perceived cuteness item are pertinent to our investigation; the other measures were collected for purposes related to another research project.

Results.

Pens: N = 100, $M_{\text{low cute}} = 6.83$, $M_{\text{high cute}} = 6.31$, $t(200) = 1.35$, $p = .179$*

Pencils: N = 66[a], $M_{\text{low cute}} = 2.89$, $M_{\text{high cute}} = 4.51$, $t(126) = 3.36$, $p = .001$

Stress balls: N = 66[a], $M_{\text{low cute}} = 5.21$, $M_{\text{high cute}} = 6.98$, $t(130) = 3.55$, $p < .001$

Stickers: N = 66[a], $M_{\text{low cute}} = 2.71$, $M_{\text{high cute}} = 5.59$, $t(130) = 5.59$, $p < .001$

Toys: N = 66[a], $M_{\text{low cute}} = 3.43$, $M_{\text{high cute}} = 6.34$, $t(129) = 7.00$, $p < .001$

[a] = same pretest

* I conducted the same analysis of the relation between gender of after school program on number of high cute products chosen excluding responses to the pen stimuli, given the non-significant difference in perceived cuteness between these two options. The key relation remained unchanged: $B = .72$, *S.E.* = .06, $t(295) = 11.72$, $p < .001$, $\omega^2_p = .31$ [95% C.I. = 0.23-0.39].

Appendix I. Manipulation of gender of recipients in after-school program in Experiment 6

Female condition:

With over 10 years of experience, **That Girl's** after-school classes empowers girls 5-12 years with leadership and confidence skills essential for their long-term success.

While seeking inspiration from successful women role models, girls create their own narratives as inventors, film makers and trailblazers through experiential projects that promote critical thinking, problem solving, team building and positive self-affirmation.

Male condition:

With over 10 years of experience, **That Boy's** after-school classes empowers boys 5-12 years with leadership and confidence skills essential for their long-term success.

While seeking inspiration from successful male role models, boys create their own narratives as inventors, film makers and trailblazers through experiential projects that promote critical thinking, problem solving, team building and positive self-affirmation.

Appendix J. Attempted manipulations of gender identity

I attempted to manipulate gender identity twice using manipulations used in prior research (Winterich, Mittal and Ross Jr. 2009; Kurt, Inman, and Argo 2011).

Winterich, Mittal, and Ross Jr. (2009)

In the first experiment, participants (N = 222 Prolific users) completed a prime highlighting their communal or agentic goals, designed by Winterich and colleagues to temporarily heighten self-perceptions of femininity or masculinity, respectively. Specifically, participants either wrote a paragraph about how a set of feminine "virtues" (considering others' feelings, selflessness, nurturance; *feminine condition*) or masculine virtues (standing by your convictions, assertiveness, self-sufficiency; *masculine condition*) applied to them (Winterich et al. 2009). This manipulation was developed based on the procedures of Meyers-Levy (1988), and complemented by insights from Eagly (1987).

As in the original experiment by Winterich and colleagues, I used participants' agreement with a sample of statements used to measure trait communion ("I try to consider others' feelings when making decisions" and "Concern for the welfare of others is important to me") to measure *state femininity*; similarly, two statements used to measure trait agency ("I am concerned with my independence from others" and "I try to stand by my own convictions when making decisions"; 1 = strongly disagree, 7 = strongly agree) were used to measure *state masculinity*. Note these measures are reported as the manipulation check in their experiment (Experiment 2), as they also consider the downstream consequences of this prime on donation behavior.

Participants were excluded from analyses if they 1) indicated their gender as non-binary, or 2) did not answer the prompt and talked about another topic entirely, copied the prompt or another piece of text, wrote gibberish, or used a single word (e.g., "good", "nice") in response to the gender identity prime. The final sample was 182 participants (106 females, M_{age} = 31.3). Note that the exclusion criteria used in Winterich et al. (2009) were not reported; thus, I developed rules for exclusion based on those from another project[9] used when examining responses to the self-complexity measure, which also uses open text boxes

[9] Maferima Toure-Tillery, Lili Wang and Carolyn Wells Keller, "Because I'm Worth It: The Effect of Self-Multiplicity on Compliance with Health Recommendations," *Reject and resubmit at JMR, 3rd round*

(i.e., use judgment to determine if the participant tried to answer the question or to just fill the text box to continue with the survey).

I ran two linear regressions with gender identity prime (-1 = masculine, +1 = feminine) as the independent variable and self-reported femininity and self-reported masculinity as the dependent variables, respectively. I failed to replicate Winterich et al.'s results: the effect of the gender identity prime on perceived femininity (B = -.07, $S.E.$ = .15, $t(179)$ = -.50, p = .621) was not significant; the same pattern emerged with perceived masculinity (B = -.19, $S.E.$ = .16, $t(179)$ = -1.16, p = .249) and the effect of the gender identity prime was non-significant. When participant sex was added to each regression, the interaction between this variable and the gender identity prime was not significant in either case (p > .37). Although the authors themselves find significant results on both dependent measures, they admit "it represents a weak manipulation", pondering that "gender identity may be difficult to manipulate due to the internalization of gender identity due to socialization at an early age" (Winterich et al. 2009, p. 209).

Kurt et al. (2011)

In a second experiment, 154 participants recruited from MTurk completed a different communion or agency prime to manipulate state femininity or masculinity, respectively. Specifically, participants unscrambled six sentences that were designed to prime communion or agency (using words and phrases from Eagly (1987), Meyers-Levy (1988), and Winterich et al. 2009). An example sentence from the communal condition is "Usually I on others focus" and an example sentence from the agentic condition is "Convictions I my stand by own". Participants were excluded if 1) they reported their gender as non-binary, or 2) they failed to unscramble 2 or more sentences. This resulted in a total of 135 participants (51 females, M_{age} = 33.2).

To capture state femininity and state masculinity, participants indicated how feminine and how masculine they considered themselves using the same single-item measures used in Study Set 2 (1 = not at all, 7 = extremely).

I ran two linear regressions with the gender identity prime (-1 = masculine, +1 = feminine) as the independent variable and self-reported femininity and self-reported masculinity as the dependent variables, respectively. I failed to replicate Kurt et al.'s results: the effect of the gender identity prime on perceived femininity (B = .16, $S.E.$ = .17, $t(132)$ = .98, p = .329) was not significant; the same pattern emerged on perceived masculinity (B = -.07, $S.E.$ = .16, $t(132)$ = -.46, p = .647) the effect of the gender identity prime was non-

significant. When participant sex was added to each regression, the interaction between this variable and the gender identity prime was not significant in either case ($p > .10$).

Overall, my experiences are consistent with other work suggesting gender identity is a relatively stable individual difference that is difficult to manipulate due to early socialization of gender roles (Eagly 1987; Gallagher and Bodenhausen 2021). Most individuals identify to some extent with each aspect of gender identity, so I believe it is possible to temporarily increase the accessibility of each aspect of an individual's gender identity; however, it is not apparent to me that it is possible to increase the accessibility of the less applicable dimension of gender identity to the point that it is more accessible than the dimension that the individual consistently identifies with (i.e., can I manipulate and raise a masculine individual's state femininity so much that they temporarily identify more with femininity than masculinity?).

It may be time to consider new methodological approaches to increasing the accessibility of one aspect of gender identity. The same sources were used to craft the manipulations of gender identity in both Winterich et al. (2009) and Kurt et al. (2011). Both primes attempt to increase state femininity/masculinity via highlighting the accessibility of communal/agentic attributes. Given the failures with both manipulations, new approaches may be warranted.