



## The unified model of vegetarian identity: A conceptual framework for understanding plant-based food choices



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### ABSTRACT

By departing from social norms regarding food behaviors, vegetarians acquire membership in a distinct social group and can develop a salient vegetarian identity. However, vegetarian identities are diverse, multidimensional, and unique to each individual. Much research has identified fundamental psychological aspects of vegetarianism, and an identity framework that unifies these findings into common constructs and conceptually defines variables is needed. Integrating psychological theories of identity with research on food choices and vegetarianism, this paper proposes a conceptual model for studying vegetarianism: The Unified Model of Vegetarian Identity (UMVI). The UMVI encompasses ten dimensions—organized into three levels (contextual, internalized, and externalized)—that capture the role of vegetarianism in an individual's self-concept. Contextual dimensions situate vegetarianism within contexts; internalized dimensions outline self-evaluations; and externalized dimensions describe enactments of identity through behavior. Together, these dimensions form a coherent vegetarian identity, characterizing one's thoughts, feelings, and behaviors regarding being vegetarian. By unifying dimensions that capture psychological constructs universally, the UMVI can prevent discrepancies in operationalization, capture the inherent diversity of vegetarian identities, and enable future research to generate greater insight into how people understand themselves and their food choices.

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Imagine yourself at a steakhouse, listening to your friends debate which cut of meat is the best. One friend orders the sirloin. Another friend decides on the prime rib. After raving about its tenderness all evening, a third friend goes with the filet mignon. You, having not consumed meat in a while, order the grilled tofu. As your friends look at one another and giggle, you realize that your food choice distinguishes you categorically from them, shapes how they see you, and possibly even shapes how you see yourself, leading you to wonder: Am I a vegetarian?

A vegetarian is most commonly defined as an individual who does not eat meat (Ruby, 2012). As a conscious decision on whether or not to eat meat, vegetarianism exemplifies a pattern of food choice that challenges widely held assumptions about eating behaviors. Eating meat is typically viewed as fundamental to human nature (Joy, 2011), and being vegetarian entails violating this perceived dietary obligation. Violating such a social norm may associate an individual with other norm-violators, known

collectively as vegetarians. By these means, a vegetarian food-choice pattern can yield a distinct social category.

Self-categorization can lead a particular attribute to become a meaningful part of an individual's social identity (Hogg & Terry, 2000). After experiencing other situations similar to that in the introductory vignette, an individual can come to internalize being vegetarian as more than merely following a diet; it can become a defining characteristic of his or her social identity. First introduced by Tajfel (1972, pp. 272–302), social identity encompasses various memberships within larger social categories (Ashforth & Mael, 1989). For vegetarians, self-categorization by food choices may situate an individual within a larger group and answer part of the iconic identity question: “Who am I?” In this sense, an individual can develop a salient vegetarian identity, thus enabling the answer: I am a vegetarian.

Discrepancies between surveys suggest that eating a vegetarian diet and having a salient vegetarian identity are distinct constructs. In 2012, 5% of adults in the United States, for example, considered themselves vegetarian (Newport, 2012), yet only 3% actually ate a vegetarian diet (The Vegetarian Resource Group, 2012). This discrepancy may have been even greater in the past. A survey in

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1993 found that while 7.2% of Eastern U.S. participants indicated that they were vegetarian, only 1.5% ate a vegetarian diet (Dietz, Frisch, Kalof, Stern, & Guagnano, 1995). Indeed, the majority of self-identified vegetarians may eat meat occasionally (Ruby, 2012). Some individuals, however, may show the opposite trend: They eat vegetarian diets but do not consider themselves vegetarians. While self-categorization can induce social identity development (Ashforth & Mael, 1989), categorization may not necessitate identity development. Studying the dimensions of vegetarian identity in order to measure the ways in which vegetarians internalize their food choices can help explain these discrepancies and clarify what it means to be a vegetarian.

Despite an extensive body of literature on the psychological aspects of vegetarianism (see Ruby, 2012 for review), discrepancies remain in how a number of similar variables have been operationalized. Integrating this literature on vegetarianism with the psychological literature on identity would enable existing psychological constructs to characterize a range of common experiences for vegetarians and to conceptually define these constructs accordingly. Doing so would enable future research to utilize findings from the identity literature in order to make scientifically sound predictions in the realms of vegetarianism.

Needed for more rigorous empirical investigations of vegetarianism is a unified model of vegetarian identity that measures the ways in which vegetarians internalize their food choices into their self-concept and enact this identity through behavior. After situating vegetarianism within developmental and social psychological identity perspectives, we synthesize these bodies of literature into a conceptual model that brings together common psychological constructs in order to outline the dimensions of a vegetarian identity. These dimensions can help generate a better understanding of how social categorization, identity processes, and food choices conjointly influence how people think, feel, and behave with respect to vegetarianism. While the preponderance of integrated evidence stems from research on vegetarians in the United States, we strive to build a model that is flexible to cultural differences and useful for research universally. Ultimately, this model presents a more coherent foundation upon which research can examine the role of vegetarianism in individuals' lives.

## 1. Contextualizing vegetarianism

By definition, vegetarians exclude meat (including red meat, poultry, and fish) from their diets (Ruby, 2012) and may or may not exclude other animal foods, such as eggs and dairy. Many self-identified vegetarians even include certain meats, such as fish. Vegans—who follow the most-restrictive dietary pattern—exclude all animal foods. Although their dietary pattern warrants a distinct label, veganism is not a separate practice from vegetarianism; rather, veganism is a type of vegetarianism. Every vegan is a vegetarian, but not every vegetarian is a vegan. Thus, unless specified otherwise, the term, “vegetarians,” includes vegans as well.

Most vegetarians in Western cultures have not followed such a diet from birth; rather, they decided to eschew eating meat voluntarily at some point during their lives (Beardsworth & Keil, 1991). Furthermore, individuals who were raised as vegetarians encounter the perpetual choice of whether to maintain their diets or to depart from their dietary upbringings. Thus, vegetarianism in these societies almost exclusively exemplifies a food-choice pattern. As Spencer (1993) emphasizes, the study of vegetarianism must focus on individuals who voluntarily follow a vegetarian diet, not on those who follow such a diet involuntarily due to scarcity of animal foods or poverty, for example. Having the opportunity to eat meat—and rejecting this opportunity—is fundamental to its nature.

Vegetarianism is becoming increasingly mainstream in several nations, such as the United States and the United Kingdom. Results from national surveys between 1997 and 2016 indicate that vegetarians represent a rapidly growing demographic in the U.S. (The Vegetarian Resource Group, 1997, 2009, 2016). Furthermore, according to recent surveys in the U.K., an increasing proportion of the public reducing its meat consumption accompanies an expanding market for vegetarian food products (Vegetarian Society, 2013). As the role of animal products in the food system evolves, research on the psychological aspects of vegetarianism can provide critical insight into widespread concerns. In particular, vegetarianism can immensely benefit public health (e.g., Tantamango-Bartley, Jaceldo-Siegl, Fan, & Fraser, 2013; Tonstad et al., 2013) and the environment (e.g., Baroni, Cenci, Tettamanti, & Berati, 2007). Social identity perspectives can elucidate the experiences of individuals who follow this diet.

## 2. A social identity approach to vegetarianism

Recognizing that one consumes a vegetarian diet can make vegetarianism a social identity as much as it is a social category. This identity involves both internalizations and externalizations; it not only emerges from food choices but also enables vegetarians to manage their food choices in an omnivorous society. Principles of both developmental and social psychology can explain these processes and illuminate the various components of a vegetarian identity. As such, a social identity approach grounded in developmental perspectives provides a suitable method for understanding the relationship between plant-based food choices and identity.

The social identity approach comprises self-categorization theory and social identity theory (Hornsey, 2008). A principal feature of self-categorization involves classification of the self and others into in-group and out-group, by which individuals are depersonalized and perceived as prototypes of their respective group (Hogg, Terry, & White, 1995). The introductory vignette, for example, illustrates the contextually responsive nature of self-categorization. At a sporting event, people may categorize themselves by favorite team. At a political debate, they may categorize by political orientation. At a steakhouse, however, eating meat is more contextually relevant than either sports preference or political orientation—one individual's decision to be vegetarian can become the entire group's basis for categorization. According to social identity theory, an individual's identity has two components: personal identity and social identity (Ashforth & Mael, 1989). While personal identity involves idiosyncratic characteristics, social identity develops from an individual's membership within salient social groups. For vegetarians, eating several times each day can make food choice a recurrent basis for categorization and consequently a salient social identity.

Emphasizing the bidirectional interactions between an individual and his or her context, developmental contextualism provides a foundation for the social identity approach in two ways: it situates the approach within a sociocultural-historical context and provides a framework for conceptualizing the ways in which an individual internalizes and externalizes identity (Lerner & Kauffman, 1985). Psychological development occurs in a multi-level context, and each level influences one another. As social factors contribute considerably to identity development (Erikson, 1968), factors such as cultural norms, media, restaurants, family, and peers can shape vegetarian identity. The natures of these factors provide contextual meaning to vegetarianism, shape the ways in which food choices can serve as a basis for self-categorization, and situate an individual within the context's social category of vegetarians. For example, scarce vegetarian options at restaurants, negative media portrayals of vegetarianism, and low familial

acceptance of a plant-based diet can lead an individual to internalize his or her vegetarian food-choice pattern as a socially undesirable self-attribute. Furthermore, a scarcity of nearby vegetarians can prevent an individual from receiving social support or developing feelings of social belongingness in food-related contexts. This may in turn affect vegetarian identity, as social belongingness is a developmental task central to identity formation (Erikson, 1968). Moreover, these internalizations shape how an individual externalizes self-perceptions in his or her context, exhibiting the reciprocal nature of developmental contextualism.

Given that food choices can indicate social group membership (Mintz, & Du Bois, 2002), it is unsurprising that food choices form part of an individual's identity (Bisogni, Connors, Devine, & Sobal, 2002). Indeed, social experiences that involve food preference can become intertwined with self-definition (Back & Glasgow, 1981), and dietary changes can even redefine identity (Keane & Willetts, 1994). Rejecting mainstream dietary practices and departing from the dominant omnivorous social group, vegetarians are likely to internalize their norm-defying food choices as a significant facet of identity (Fehr & Fischbacher, 2004; Joy, 2011). Vegetarianism may also interact with identity through means beyond membership in a social group. For vegetarians, food choices may represent an individual's life philosophy (Lindeman & Sirelius, 2001) and tend to become more entangled with his or her self-concept in ways that differ from other patterns of food choice (Lindeman & Stark, 1999, 2000).

As this area of work rapidly progresses, there is a growing need to unify common psychological constructs and to quantify vegetarian identity with a conceptual model that can explain and predict behavior and related psychological outcomes. By extensively reviewing the literature on vegetarianism and identifying notable themes, Ruby (2012) provides a platform for developing a model that captures how vegetarians internalize their experiences and manage vegetarianism in their lives. A social identity approach to developmental contextualism can use this platform to elucidate convoluted phenomena that are commonplace experiences for many vegetarians. Ultimately, a unified model of vegetarian identity can enable future research to advance this field in an efficient and coherent manner.

### 3. Integrating literatures to conceptualize vegetarian identity

Identity is a domain of psychosocial development that characterizes one's sense of self: how an individual sees him or herself (Erikson, 1968). Identity comprises a number of facets, and an emerging body of literature has begun examining food-choice identity: The “self-images” through which individuals “think, feel and act with respect to food and eating” (Sobal, Bisogni, & Jastran, 2014, p. 8). Accordingly, *vegetarian identity* can be defined as an individual's thoughts, feelings, and behaviors regarding being vegetarian. Bisogni et al. (2002) explain that the relationship between identity and food choices is bidirectional. In addition, food choices not only encompass personal meanings but also yield communities of individuals who share similar food-choice patterns, linking food choices to both personal identity and social identity (Bisogni et al., 2002). A common theme in the literature is that food choices often form a relevant identity domain for vegetarians (Fox & Ward, 2008; LeRette, 2014; Sneijder & Te Molder, 2009).

Individuals with the same dietary pattern vary in how they self-identify in terms of vegetarian status (Ruby, 2012), suggesting that being vegetarian is not merely a reflection of one's food choices. Rather, understanding vegetarianism holistically requires a multidimensional model of identity.

Psychological theories, research on food choices, and research on vegetarians point to numerous constructs that collectively

comprise a vegetarian identity. Some of these constructs contextualize the identity. Lifespan developmental psychology highlights several factors that influence identity development, including historical and sociocultural contexts, the interactivity of various contextual levels, and timing (Baltes, 1987; Lerner & Kauffman, 1985). Likewise, research on food choices (e.g., Devine, Connors, Bisogni, & Sobal, 1998) recognizes the interactivity between sociocultural influences and eating behaviors, and research on vegetarians (e.g., Jabs, Sobal, & Devine, 2000) notes that contextual features—such as historical time period and geographical location—shape an individual's experiences with regard to plant-based food choices.

Other constructs define the interlaced internalizations and externalizations that result from the bidirectional relationship between food choices and identity. Research on identity (e.g., Turner, Oakes, Haslam, & McGarty, 1994) and on vegetarians (e.g., LeRette, 2014) recognizes that characteristics of the immediate social context can activate vegetarian identity in unique ways across situations. Offering a perspective on the stable relevance of vegetarian identity across all contexts, personal construct theory provides a framework for conceptualizing an individual's ascribed importance of being vegetarian in relation to his or her overall self-concept (Kelly, 1955, pp. 1–2). Just as individuals vary in the extent to which they view being vegetarian as an important attribute of self-concept (Hoffman, Stallings, Bessinger, & Brooks, 2013), there is also research to suggest that self-esteem can be attribute-specific (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995)—vegetarianism may be one such attribute on which individuals can evaluate themselves and develop a specific self-esteem. Often in accordance with social identity theory's predictions on out-group prejudice, vegetarians evaluate omnivores for their food choices as well (Ruby, 2012). Furthermore, vegetarian identity influences food choices directly, as motivations for being vegetarian shape food choices (Ruby, 2012).

Some constructs capture the ways in which an individual manages his or her vegetarian identity in relation to contextual demands. Such demands can result from anticipated social implications of food choices and from food availability. Given that social identification situates an individual within a distinct social group (Ashforth & Mael, 1989), it is unsurprising that vegetarians identify themselves in terms of their food choices in different ways across contexts (Jabs et al., 2000). In addition to affecting identification, contextual characteristics may also influence a vegetarian's food choices. Vegetarians vary in the extent to which they follow their self-imposed dietary rules, and certain contexts might influence food behaviors differently (Willetts, 1997). In particular, social occasions and situations in which plant-based food options are scarce may test an individual's commitment to diet adherence.

Integrating research from these various disciplines into one model, we identified ten distinct dimensions that conceptually define the significant constructs of a vegetarian identity. These dimensions capture the multilevel contextual influences on identity, food-choice internalizations woven into identity, and behaviors that express impactful facets of identity. Together, these ten dimensions form the unified model of vegetarian identity (UMVI).

### 4. Introducing the unified model of vegetarian identity

The UMVI conceives vegetarianism through a social identity approach to developmental contextualism. Developmental contextualism situates the individual as a distinct level within his or her multilevel context (Lerner & Kauffman, 1985). As interactions between levels influence development, the individual both influences and is influenced by his or her external world. Likewise, self-regulation theories conceive the individual as an active

contributor to his or her development (Gestsdottir & Lerner, 2008). An individual can develop a sense of self by managing internal self-evaluations with external contextual demands. Although context is a significant facet of development universally, individual differences exist in the extent to which context affects development (Lerner, 1996). Perspectives on developmental contextualism note that each individual's personal attributes evoke certain responses from his or her environment; vegetarianism constitutes one self-attribute that may be similarly variable in its relationship with social context (Lerner, 1996).

Both developmental contextualism and self-regulation theories suggest that vegetarian identity development involves enacting internal self-evaluations and motives into appropriate behavior and then internalizing behavior in context as part of one's self-concept. Moreover, contextual dimensions situate these processes within historical and sociocultural contexts and within an individual's lifespan (Baltes, 1987; Lerner & Kauffman, 1985). Just as the social implications of food choices are culturally variable (Kittler, Sucher, & Nelms, 2012), developmental contextualism suggests that the meaning of a vegetarian identity is contextually responsive and dependent.

In this section, we propose a unified model of vegetarian identity with ten measurable dimensions (historical embeddedness, timing, duration, salience, centrality, regard, motivation, dietary pattern, label, and strictness) organized into three levels (contextual, internalized, and externalized) arranged by their degree of perceived control (see Fig. 1). The contextual dimensions include historical embeddedness, timing, and duration; internalized dimensions include salience, centrality, regard, and motivation; and externalized dimensions include dietary pattern, label, and strictness. By outlining ten distinct dimensions and their conceptual definitions, we assemble unique and measurable facets of a vegetarian identity. Currently, these dimensions are evident discretely across multiple bodies of literature. Used together, however, they form the UMVI: a conceptual framework for understanding the role of vegetarianism in an individual's self-concept. By conceptually

defining vegetarian identity coherently, the UMVI can enable future research to examine how these dimensions interact to affect behavior, to predict psychological well-being and an array of other variables, and to elucidate what it means to be a vegetarian. After reviewing these dimensions, we explain perceived control in greater detail and elaborate on its relation to the UMVI's hierarchical structure.

#### 4.1. Level 1: contextual dimensions

Contextual dimensions—historical embeddedness, timing, and duration—situate vegetarianism within historical, sociocultural, and lifespan contexts. By transcending the individual in the present moment, these contexts capture the developmental factors that underlie the internalizations and externalizations of vegetarian identity.

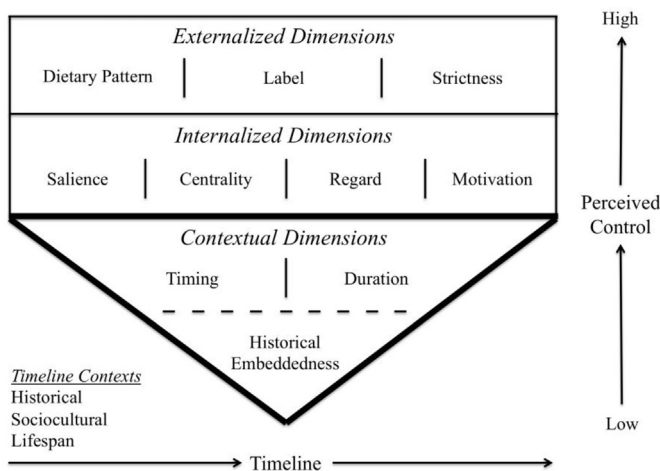
##### 4.1.1. Historical embeddedness

*Historical embeddedness* refers to the historical and sociocultural conditions under which an individual is vegetarian. A principal concept of lifespan developmental psychology, historical embeddedness posits that sociocultural conditions in a given time period substantially influence an individual's development (Baltes, 1987). Accordingly, identity interacts with both cultural and historical conditions as well as the evolution of these conditions over time.

Food behaviors and the meanings assigned to particular animal foods vary considerably across cultures (Kittler et al., 2012). Just as multiple contextual levels influence psychological development (Lerner & Kauffman, 1985), factors at both the societal and individual levels influence food choices (Nestle et al., 1998). Notable societal-level factors include cultural values, social attitudes toward foods, interpersonal interactions, media, and food availability (Nestle et al., 1998). Fox and Ward (2008) suggest that such contextualizing factors give rise to vegetarian identity.

Across the world, the prevalence of vegetarianism varies substantially. For example, while 40% of India's population is vegetarian, France's population is only 2% vegetarian (European Vegetarian and Animals News Alliance, 2013). Prevalence can even vary by geographical location within the same nation, as the Northeast has more than twice the prevalence of vegetarianism than the South in the U.S. (The Vegetarian Resource Group, 2016). Contextual characteristics, such as vegetarian demographics, may influence how a vegetarian internalizes food choices into identity. While vegetarians in one city with a high prevalence of vegetarians may enjoy a plethora of vegetarian restaurants, vegetarians in a city with few vegetarians may struggle to find sufficient plant-based meals when eating out and consequently perceive their food choices as restrictive. Such situational cues may signal social identity contingencies that can lead members of certain groups, such as vegetarians, to feel uncomfortable and threatened (Purdie-Vaughns, Steele, Davies, Dittmann, & Crosby, 2008).

Time period is also a critical component of historical embeddedness, particularly given that the prevalence of vegetarianism has varied over time (The Vegetarian Resource Group, 1997, 2009, 2016). Research on intergroup relations suggests that the prevalence of vegetarians in a society may affect an individual's experiences as a vegetarian, such that a lower prevalence may lead the individual to be stereotyped more severely, for example (Tajfel, 1982). Research on the influence of social norms on behaviors (Fehr & Fischbacher, 2004) as well as the finding that social support significantly bolsters a vegetarian's ability to maintain his or her diet (Jabs, Devine, & Sobal, 1998) suggest that the social conventionality of vegetarianism is an important factor in the development of a vegetarian identity.



**Fig. 1.** (1.5-column): **The Unified Model of Vegetarian Identity (UMVI).** The hierarchical structure of the UMVI is organized by degree of perceived control. While the horizontal dotted line indicates that timing and duration afford more perceived control than historical embeddedness within the contextual level, vertical solid lines indicate that the internalized and externalized dimensions afford the same perceived control as other dimensions within their respective level of identity. Individuals can engage directly with these internalized and externalized dimensions, whereas contextual dimensions are situating factors that offer little opportunity for direct engagement and are thus enclosed within a bolded border. This bolded, inverted triangle concurrently represents a compass that locates the individual across a timeline of historical, sociocultural, and lifespan progression.

#### 4.1.2. Timing

Timing refers to the time course of an individual's engagement with vegetarianism throughout his or her lifespan. The multidimensionality and multidirectionality of lifespan developmental psychology suggest that development often involves processes that stimulate changes in self-concept later in life (Baltes, 1987). Similarly, food-choice trajectories develop over time and respond to interactions between an individual's personal characteristics and sociocultural forces (Devine et al., 1998). A unique feature of a change pattern is timing, which includes its onset, duration, and termination (Baltes, 1987). Becoming a vegetarian illustrates such a change that can encompass these three timing components.

Developmental contextualism emphasizes the significant influence of timing on the interactions between an individual and his or her environment (Lerner & Kauffman, 1985), suggesting that age of onset—at which an individual begins to shift toward vegetarianism—can affect a myriad of outcomes. Becoming vegetarian during adolescence would pose distinct psychosocial challenges than doing so during middle adulthood, for example. This relationship may be bidirectional in that developmental tasks may also influence the meaning of vegetarianism. An adolescent, for example, might become vegetarian merely to assert his or her increasing independence in life (Keane & Willetts, 1994). Developmental tasks may similarly shape vegetarian terminations—the times at which an individual shifts away from vegetarianism—as navigating new social environments may lead an individual to reevaluate his or her food choices (Devine et al., 1998). In assessing vegetarian onsets and terminations, investigators should consider not only the discrete ages at which changes occur but also the developmental stages and relevant life events surrounding these transitions.

In studying individuals who are currently vegetarian, terminations might seem irrelevant. Likewise, it may appear that individuals who have never been vegetarian have neither a termination nor an onset. However, to understand vegetarian identity as an ongoing self-perception pertinent to prospective and former vegetarians in addition to current vegetarians, investigators can expand their conceptions of onset and termination to encompass not only prior occurrences but also prospective aims. Accordingly, we propose four terms to describe components of vegetarian change patterns: prior onset, prospective onset, prior termination, and prospective termination.

First, *prior onset* refers to a time at which an individual began to shift toward vegetarianism. Second, *prospective onset* refers to a time at which an individual plans to shift toward vegetarianism. Third, *prior termination* refers to a time at which an individual shifted away from vegetarianism. Fourth, *prospective termination* refers to a time at which an individual plans to shift away from vegetarianism.

Investigators can operationalize onsets and terminations flexibly, applying them to changes in food choices, self-identification, or any other aspect of vegetarian identity. For example, they may describe times when an individual adopts or gives up a vegetarian diet, begins or stops identifying as vegetarian, or changes his or her level of dietary restrictiveness or adherence in some way. Ultimately, onsets and terminations contextualize vegetarian identity within a lifespan context, providing versatile tools that can track its progression over time.

#### 4.1.3. Duration

Vegetarian *duration* refers to the amount of time that an individual reports being vegetarian. Existing research (e.g., Fox & Ward, 2008; Hoffman et al., 2013; Larsson, Rönnlund, Johansson, & Dahlgren, 2003) suggests that duration has significant predictive value for a number of variables. Including duration as a dimension

of the UMVI can capture vegetarian identity most effectively.

Duration provides a quantitative measurement of a subjective evaluation. Fundamentally, duration is subjective because individuals define vegetarian dieting in varying ways (Ruby, 2012). Occasional lapses in vegetarian dieting and any changes in vegetarian diet restrictiveness over time make an objective measurement of duration further infeasible. However, given that self-perceptions of food behaviors trump the food behaviors themselves in shaping vegetarian identity, this subjectivity is appropriate in quantifying an individual's time as a vegetarian.

Duration may be particularly complicated for vegetarians who have increased their dietary restrictiveness over time, such as an individual who initially excludes only meat (adopts a vegetarian diet) but later eschews all animal foods (adopts a vegan diet). This individual may report his or her duration either as the total amount of time both as a vegetarian and as a vegan, or as the shorter amount of time as a vegan. This individual may even report two durations: a vegetarian duration and a distinct vegan duration. Investigators should evaluate such phenomena in light of lifespan timing, conceiving multidimensional durations as products of vegetarian identity change patterns. Divergent vegetarian and vegan durations, as in this case, can be thought of as prior onsets and terminations of dietary patterns and self-identifications.

Duration is an essential contextual dimension of vegetarian identity because an individual will experience more events that make this vegetarian identity salient the longer he or she has been vegetarian. A vegetarian of 1 month and a vegetarian of 30 years would have vastly different types of vegetarian identities; the latter individual's identity may be more stable, more complex, and more intertwined with self-concept, for example, because he or she has had more opportunities to negotiate between vegetarian dietary rules and social conventions and to reflect on challenging experiences. The 1-month vegetarian's motivations for being vegetarian are likely more variable, as an individual's motivations tend to change over time (Ruby, 2012). Still, these two individuals' measures on motivation and other UMVI dimensions may appear similar, despite their nearly 30-year duration disparity. Such identity similarity fails to display the probable differences in the stability and life significance of their identities.

In order to situate duration within lifespan timing more thoroughly, future research should additionally consider how age and other life circumstances might influence perceptions of duration. Depending on these factors, vegetarians may perceive the same duration differently. For example, 5 years not eating meat may feel like a relatively longer amount of time for a low-income 15-year-old than it would for a financially stable 60-year-old. These characteristics may afford divergent internalization processes of eating the same diet. It is important to be mindful of these lifespan and sociocultural characteristics that can influence self-perceptions. By contextualizing these characteristics, duration provides crucial insight into examining vegetarian identity.

## 4.2. Level 2: Internalized dimensions

While historical embeddedness, timing, and duration capture the contexts underlying vegetarian identity, internalized dimensions—salience, centrality, regard, and motivation—capture the assimilations of food choices into identity. As one of several identity domains, vegetarian identity may share similar features with other specific self-constructs, namely racial identity.

Existing racial identity models lend useful templates for outlining the range of dimensions that might encompass self-conceptions. For example, the dimensions of salience, centrality, and regard are common in other models (e.g., Luhtanen & Crocker, 1992; Sellers, Smith, Shelton, Rowley, & Chavous, 1998) and

constitute fundamental components of our vegetarian identity model as well.

#### 4.2.1. *Salience*

Vegetarian *salience* refers to the extent to which being vegetarian is a relevant feature of an individual's self-concept in a particular context. A vegetarian's social identity encompasses food choices as one of many domains; situational cues determine the extent to which this domain is activated (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Thus, salience is an unstable characteristic of vegetarian identity that changes in response to the social context (Turner et al., 1994). Increased salience of an individual's membership within a social group affects how he or she interacts with members of both the in-group and the out-group (Brewer & Kramer, 1985; Tajfel, Billig, Bundy, & Flament, 1971). By highlighting that vegetarians and omnivores are members of distinct groups, situational cues that increase vegetarian identity salience can influence intergroup interactions as well (LeRette, 2014).

Salience is likely to increase during situations that involve food—i.e., eating food, cooking food, or talking about food—as these may cause vegetarians to become aware of their norm-defying food choices. However, not all food-related situations will affect salience equally. For example, a vegetarian's salience is unlikely to increase much when he or she eats dinner at home if everyone else in his or her family is also vegetarian. On the other hand, a vegan who is unable to order any entrée because every single item on a restaurant's menu contains some sort of animal product is likely to feel as if being vegan is a very distinguishing characteristic. Limited evidence suggests that vegetarians are likely to experience increased salience when eating at restaurants (Kittler et al., 2012) or as a guest at another individual's house (Jabs et al., 2000). In these contexts, two obstacles might contribute to heightened salience: dining with omnivores and being concerned about having sufficient food options.

The extent to which salience changes when a vegetarian eats at either a restaurant or another individual's house with a group comprised entirely of vegetarians is unknown. In these situations, food-choice categorization—namely, grouping individuals into vegetarians and omnivores—would be irrelevant. Given that an individual's behavior often depends on the social composition of his or her surroundings (Branscombe, Ellemers, Spears, & Doosje, 1999), future research should examine behavioral differences across a variety of situations in order to determine contextual correlates of vegetarian salience.

Because salience represents an inherently dynamic aspect of one's vegetarian identity, single-administration surveys are an unsuitable means of measurement. Instead, techniques for capturing salience must be sensitive to within-person variability in the self-reported importance of vegetarianism over brief periods of time. Thus, intensive prospective techniques, such as ecological momentary assessment (experience sampling) and daily process studies, are needed. Existing psychological research on mood (Ong & Ram, *in press*), event-reactivity (Kashdan & Steger, 2006), and identity (Yip, 2005) has implemented these techniques and provides useful templates for future research on vegetarianism.

#### 4.2.2. *Centrality*

Vegetarian *centrality* refers to the extent to which an individual views being vegetarian as a predominant feature of his or her self-concept. Food is an important part of some individuals' lives but an unimportant part of others', suggesting that individuals have varying levels of food-choice centrality (Bisogni et al., 2002; Sobal et al., 2014). Noting that vegetarians are far more likely than omnivores to define themselves in terms of their eating behaviors, Joy (2011) suggests that vegetarians generally have high food-choice

centrality. However, several studies (e.g., Hoffman et al., 2013; Hornsey & Jetten, 2003; Larsson et al., 2003) suggest that levels of centrality vary between vegetarians.

According to personal construct theory, an individual internalizes his or her relationship with the social world by using components of his or her identity (Kelly, 1955, pp. 1–2). In agreement with this theory's postulation that some of these components are more relevant than others, identity domains appear to be organized hierarchically within an individual's self-concept (Hogg et al., 1995). The likelihood that a domain will become relevant depends on its place in this hierarchy; the closer to the top of the hierarchy a domain is—i.e., the greater its centrality—the more likely it is to be activated in a situation. As racial centrality moderates the effect of a situation on racial salience (Sellers et al., 1998), vegetarian centrality likely has a similar effect on vegetarian salience. Unlike salience, centrality is stable across situations (Sellers et al., 1998).

Centrality encompasses the ascribed importance of being vegetarian in an individual's self-perception. Given that being vegetarian is a choice, centrality may convey an individual's commitment to vegetarianism and predict the likelihood of maintaining a vegetarian diet over time. Because centrality tends to influence salience across situations, centrality is likely to affect an individual's feelings and behaviors in a variety of contexts.

The extent to which vegetarianism permeates matters beyond food choices in an individual's life may vary depending on centrality. Social identity theory suggests that individuals tend to engage in activities and to associate themselves with organizations that reflect aspects of their identities (Ashforth & Mael, 1989). As such, centrality may predict the extent to which this occurs for vegetarians. For example, a high-centrality vegetarian may be more likely to advocate for animal rights, to seek out friendships with other vegetarians, or to encourage omnivores to become vegetarian as well. On the other hand, a low-centrality vegetarian may avoid speaking about vegetarianism and refrain from getting involved in vegetarian-related affairs; rather, he or she can simply eat a vegetarian diet without viewing vegetarianism as a principal feature of his or her self-concept.

#### 4.2.3. *Regard*

Vegetarian *regard* refers to the perceived valence of vegetarian and omnivorous social groups and their defining behaviors in terms of positive-negative evaluations. Our conceptualization of regard resembles that of self-esteem, of which there are two types: global and specific (Rosenberg et al., 1995). While global self-esteem characterizes an individual's evaluation of his or her entire self-concept, specific self-esteem pertains to the individual's evaluation of a particular identity domain. Thus, vegetarian regard involves a personal evaluation of specific self-esteem for vegetarian identity.

Regard involves three components: private regard, public regard, and omnivorous regard. While private and public regards measure an individual's feelings about being vegetarian, omnivorous regard measures an individual's feelings about omnivores and their food choices. Accordingly, private and public regards encompass evaluations of the self and the collective in-group (vegetarians), and omnivorous regard reflects evaluations of the collective out-group (omnivores). Similar sorts of private and public regards exist in study of racial and ethnic identity (e.g., Sellers et al., 1998). Researchers can draw upon this body of literature in order to make sound inferences with respect to vegetarian identity.

**4.2.3.1. *Private regard and public regard.*** Concerning vegetarianism, *private regard* refers to an individual's personal feelings toward vegetarians and toward being vegetarian in terms of positive-

negative valence. In contrast, *public regard* refers to an individual's feelings about the way in which omnivores and the larger society view vegetarians. In examining the valence of omnivores' perceptions of vegetarians, [Minson and Monin \(2012\)](#) found that nearly half of omnivores freely associate negative terms with vegetarians. These beliefs may progress past mere associations; omnivores may demonstrate them through behavior. Vegetarians often receive microaggressive comments about their food choices from omnivores, which can impair self-esteem and lead vegetarians to feel stigmatized ([LeRette, 2014](#)). Through interactions with omnivores, vegetarians are likely to become aware that many omnivores hold unfavorable views toward their group, to internalize social experiences with these individuals into their self-concepts, and to modify their behavior to avoid future negative evaluations. Indeed, [LeRette \(2014\)](#) suggests that having low public regard may influence the way in which a vegetarian presents his or her vegetarian identity to omnivores.

**4.2.3.2. Omnivorous regard.** *Omnivorous regard* refers to an individual's feelings toward the use of animal products that he or she does not use in terms of positive-negative valence. Pertaining to food choices, omnivorous regard captures two constructs: an individual's feelings toward the consumption of animal foods that his or her dietary pattern excludes as well as feelings toward other individuals and groups who consume those foods.

Four psychological constructs might underlie omnivorous regard: out-group prejudice, out-group homogeneity, perceived immorality, and disgust. First, social identity theory posits that out-group prejudice may lead vegetarians to evaluate omnivores more negatively than they would other vegetarians ([Ashforth & Mael, 1989](#)). Second, according to perspectives on intergroup relations, individuals tend to perceive out-groups as less diverse ([Park & Rothbart, 1982](#)), which may lead vegetarians to view all omnivores as similar to one another, or as a homogenous entity. Third, people are more inclined to reject others whom they perceive as immoral ([Inbar & Pizarro, 2014](#)). Given that the majority of vegetarians appear to avoid eating meat for moral reasons ([Ruby, 2012](#)), an accordingly large proportion might perceive the consumption of meat or other animal foods as immoral. Lastly, many vegetarians find meat consumption disgusting, leading some to experience negative emotional reactions to viewing others eat meat ([Ruby, 2012](#)). With respect to vegetarian identity, disgust is not a food-choice motivation but an underlying construct of omnivorous regard: Rather than involving goal-oriented aims that stimulate behavior, disgust entails an aversion to a stimulus, which can shape evaluations of oneself and others. Adding to the effects of out-group prejudice and homogeneity, moral opposition to and personal disgust with using animals for food may cause a majority of vegetarians to judge others even more negatively for eating meat or other animal foods ([Rothgerber, 2014; Ruby, 2012](#)).

As an identity component that responds to situational cues, omnivorous regard is a self-attribute that captures an inclination for certain feelings to surface. Omnivorous regard can predict and explain vegetarians' feelings that develop from a variety of situations that involve or reference the consumption of excluded animal products. Examples of such situations can include viewing others eat animal foods, speaking about animal foods, being offered animal foods, or even listening to a radio advertisement for an animal food. Resulting feelings can influence not only how vegetarians reflect on themselves but also how they view others.

Unlike private and public regards, omnivorous regard embodies vegetarians' evaluations of the out-group. A vegetarian with low omnivorous regard evaluates others negatively when they use animal products that the vegetarian eschews, whereas a vegetarian with high omnivorous regard evaluates others positively. Unlike

either of these cases, a vegetarian with a moderate omnivorous regard is unconcerned about omnivores' animal-food choices and animal-product uses. By noting that vegetarians differ in the extent to which they accept an individual's decision to consume animal foods, [LeRette \(2014\)](#) suggests that vegetarians have varying levels of omnivorous regard.

Based upon the empirical foundation on which we have placed omnivorous regard, it is reasonable to conclude that having low omnivorous regard may influence a vegetarian's social encounters and relations. Given that many vegetarians report heightened feelings of disgust from the mere sight of meat ([Rozin, Markwith, & Stoess, 1997](#)), omnivorous regard can influence a vegetarian's behavior in response to a commonplace act like walking down the meat aisle of a grocery store. Indeed, [Beardsworth and Keil \(1992\)](#) report a vegan couple that refers to this section of the store as "death aisle" (p. 281). Seeing this aisle motivates the couple to protest against meat production openly in attempt to educate nearby shoppers about the implications of their food choices. Other enactments of low omnivorous regard into behavior have been recorded: As a vegetarian and animal rights supporter, Paul McCartney once required his staff to eat a vegetarian diet while working on the set of his concert ([The Canadian Press, 2013](#)). These reports exemplify vegetarians who evaluate others negatively for using animal products—vegetarians whom we may label as possessing low omnivorous regard.

The scope of omnivorous regard encompasses feelings toward the use of all animal products, not just the consumption of animal foods. Two common non-food animal products are leather and fur, for example. A vegetarian with low omnivorous regard may react negatively in some way to seeing a woman wearing a fur coat or a man wearing a leather jacket. To the vegetarian, wearing such a product may represent an immoral act of cruelty against animals. In this situation, the vegetarian may develop feelings of disgust, anger, or resentment toward the man or woman. As the halo effect suggests, merely noticing another individual using an animal product—a perceived breach of morality to many vegetarians—may lead a vegetarian to develop negative preconceived notions about the individual's character ([Nisbett & Wilson, 1977](#)). Furthermore, the vegetarian may confront the animal-product user, either chastising the individual's behavior or attempting to educate the individual about the ethical implications of using animal products and to persuade him or her to become vegetarian, as the couple does in [Beardsworth and Keil \(1992\)](#).

Omnivorous regard operationalizes out-group behaviors differently across vegetarians, depending on their dietary pattern and use of other animal products. For a lacto-ovo vegetarian (an individual who excludes only meat but eats and uses all other animal products), omnivorous regard characterizes his or her feelings toward the consumption of meat alone. For a vegan who does not eat or use any animal products, omnivorous regard characterizes feelings toward the consumption of all animal products in general. While measuring omnivorous regard individually in this manner is optimal, a simpler method is to focus solely on the vegetarian's feelings toward meat consumption, as all vegetarians—lacto-ovo, pescos, vegan, etc.—eschew meat in some way. This method would also enable future work to explore the relationship between dietary pattern and omnivorous regard in a more-controlled manner.

Although this paper is the first to label such a phenomenon as "omnivorous regard," evidence supporting the construct exists anecdotally (e.g., [Colb, 2013; The Canadian Press, 2013](#)) and empirically (e.g., [LeRette, 2014; Rothgerber, 2014; Rozin et al., 1997](#)). In accordance with social identity theory, ethically motivated vegetarians in particular appear to have lower omnivorous regard than health-motivated vegetarians ([Rothgerber, 2014](#)). That is, for ethically motivated vegetarians, the sight of meat

consumption evokes stronger emotional responses that affect their evaluations of those eating meat. Health-motivated vegetarians, on the other hand, do not respond with such emotional intensity. For them, eating meat merely represents an unhealthful act rather than a breach of morality. From perceiving meat consumption as immoral, ethically motivated vegetarians may develop feelings of contempt and disgust toward omnivores, which can result in hostility, conflict, or avoidance (Brewer, 1999).

Some vegans' sexual preferences exhibit such avoidance. Potts and Parry (2010) review the evidence on a sexual preference called "vegansexuality," which characterizes the preference of some vegans "to engage in sexual relations only with other vegans" (p. 54). Vegansexuality stems from ethical objections to having intimate relations with non-vegans due to their consumption of animal products. This phenomenon exemplifies the substantial extent to which some vegetarian identities can influence self-concept and behavior in ways much beyond food choices, highlights the need for future research on omnivorous regard, and suggests potential identity differences between vegetarians and vegans. To some vegans, vegetarians may be part of the out-group as well.

#### 4.2.4. Motivation

Vegetarian *motivation* refers to an individual's reasons for following his or her dietary pattern. Two people can make the same food choice for different reasons (Sobal et al., 2014), and multiple sources of motivation can stimulate vegetarianism (Ruby, 2012). For vegetarians, motivation answers the question, "Why am I vegetarian?" Food-choice motivations may express the values of an individual's personal identity (Lindeman & Stark, 2000), a link that appears to be significantly stronger for vegetarians than for omnivores (Lindeman & Stark, 1999). For some, food choices can provide a means of expressing one's life philosophy and ideology (Lindeman & Sirelius, 2001). For vegetarians, the motivations that underlie food behaviors determine the personal significance of having a vegetarian identity (Stiles, 1998) and the goals an individual hopes to achieve through food choices.

Rather than focusing on specific motivations, the UMVI proposes three vegetarian motivational orientations: prosocial, personal, and moral. As Fox and Ward (2008) suggest, distinguishing between levels of prosocial and personal motivation can reveal the underlying drives behind vegetarians' food choices. However, some drives are neither prosocial nor personal—they involve matters of morality. The existing literature suggests that these orientations capture distinct psychological constructs that underlie the array of motivations individuals report for being vegetarian.

In conceiving these orientations, the UMVI recognizes two fundamental features of vegetarian motivation. First, we view motivational orientations as continuous variables. As Beardsworth and Keil (1991) suggest, the extent to which each motivation influences an individual's behavior lies on a continuum. Second, we reason that motivational orientations are mutually inclusive. That is, an individual can have high levels of all three orientations, low levels of all three, or any combination in-between. Indeed, several studies (e.g., Beardsworth & Keil, 1991; Rothgerber, 2014) note that a large proportion of vegetarians are mixed-motive vegetarians. In a study of 329 vegans, more than 80% of participants had multiple motivations for avoiding animal foods (Janssen, Busch, Rödiger, & Hamm, 2016). However, Ruby (2012) highlights that little is known about these mixed-motive vegetarians, as most research has categorized vegetarians by their primary motivation. While recent research (e.g., Rothgerber, 2014) has begun to examine mixed-motive vegetarians, more research is needed. By providing a framework for quantifying motivational orientations as continuous variables, the UMVI can further address this knowledge gap.

**4.2.4.1. Prosocial motivation.** *Prosocial motivation* refers to the extent to which a desire to benefit something beyond oneself is a reason for being vegetarian. Prosocial behaviors can be defined as "voluntary actions undertaken to benefit others" (Caprara, Alessandri, & Eisenberg, 2012, p. 1289). Moreover, prosociality extends beyond helping other humans or animals—it can also encompass behaviors aimed at benefitting the environment (Kaiser, Ranney, Hartig, & Bowler, 1999). Caprara et al. (2012) explain that personal values and traits largely influence the extent to which an individual is inclined to act prosocially. Given that most vegetarians have personal values that involve a desire to benefit animals or the environment (Ruby, 2012), a similarly high proportion of vegetarians may perceive their food behaviors as prosocially motivated.

Because they are often concerned about the effects of their food choices on externally focused matters, many vegetarians traditionally categorized as ethically motivated might have high levels of prosocial motivation. Greenebaum (2012) suggests that ethically motivated vegans who are concerned about animals view veganism as more than a diet. To them, it is a lifestyle. Their focus is beyond themselves, such that one vegan describes her food choices as a means of "[making] the world a better place for others" (p. 136). Moving forward, future research must examine prosocial motivation as its own construct in order to validate this hypothesis. Prosocial motivation differs from prior studies' characterizations of ethical motivation, making any definitive assumptions across the two constructs unjustified.

**4.2.4.2. Personal motivation.** *Personal motivation* refers to the extent to which a desire to benefit oneself is a reason for being vegetarian. Personal motivations also appear to be prevalent among vegetarians. As the second most common vegetarian motivation (Ruby, 2012), concern for personal health involves an evident desire to benefit one's own well-being. Religious motivation might correspond to high personal motivation as well. Some individuals who are vegetarian for religious reasons view their food choices a means of achieving personal growth and enlightenment (Stiles, 1998). These personal motivations can be characterized by self-focused goals, or "goals directed to developing or ruminating on one's self, personality, health, or life" (Salmela-Aro et al., 2012, p. 109). While prosocial motivation involves an external focus, personal motivation involves an internal focus.

Research on goal content suggests that, compared to classifying vegetarians by ethical and health motivations, classifying vegetarians by the extent to which they have prosocial and personal motivations may capture underlying psychological constructs more sensibly and reveal connections between vegetarian identity, behavior, and psychological outcomes with greater reliability (Hill, Burrow, Brandenberger, Lapsley, & Quaranto, 2010). Findings from Hill et al. (2010) on purpose orientations and well-being suggest that one's motivations can influence a number of impactful outcomes. Individuals whose goals are focused on others appear to experience more positive well-being and greater life satisfaction than individuals whose goals are self-focused. Furthermore, these individuals with high levels of prosocial orientation may achieve more personal growth, have more integrity, and feel a greater sense of purpose in life (Hill et al., 2010). Vegetarianism exemplifies a food-choice pattern that typically involves sets of goals, either internally or externally focused (Fox & Ward, 2008), requiring individuals to draw upon certain motivation that supports the achievement of those goals. Accordingly, prosocial and personal motivations may have different psychological correlates for vegetarians.

The extent to which an individual's motivation is prosocial or personal has significant effects on vegetarian identity and



intragroup relations. Research on ethical and health motivations suggests that vegetarians with primarily prosocial motivations view themselves as superior to vegetarians with primarily personal motivations (Fox & Ward, 2008; Greenebaum, 2012). Some ethically motivated vegetarians who display prosocially oriented food choices perceive health-motivated vegetarians as selfish for caring only about their personal health (Fox & Ward, 2008). Vegans have shown similar in-group disdain as well. Many ethically motivated vegans describe veganism as a lifestyle—not a diet—and question whether health-motivated vegans are truly vegans and are even entitled to a vegan identity (Greenebaum, 2012). Accordingly, some vegetarians might view having prosocial motivations as important of a requirement as eating a vegetarian diet is for being vegetarian. As one vegan asserts, “You can’t be vegan for health reasons” (Greenebaum, 2012, p. 135).

**4.2.4.3. Moral motivation.** Finally, *moral motivation* refers to the extent to which beliefs about rightness and wrongness is a reason for being vegetarian. Moral behavior constitutes right actions—how one ought to act in order to be good, just, and fair (Kohlberg & Hersh, 1977). Understanding one’s own morality precipitates a desire to behave in accordance with moral principles, an ambition that can be characterized as moral motivation (Hardy & Carlo, 2005). Although similar in apparent meaning, the UMVI moral motivation is distinct from ethical motivation measured by existing research on vegetarians. First, while ethical motivation is an overarching category that includes specific reasons for being vegetarian, we conceptualize moral motivation as an orientation that quantifies the extent to which individual’s motives, goals, and beliefs about morality influence his or her choice to be vegetarian. Furthermore, unlike ethical motivation as operationalized unclearly and inconsistently, moral motivation must be restricted to beliefs about rightness and wrongness.

Understanding each individual’s level of moral motivation may provide notable insight into his or her vegetarian identity. Given that identity can stimulate moral action (Hardy & Carlo, 2005), the extent to which moral beliefs influence food choices may have implications for the role of morality in behaviors that reflect other domains of one’s identity. Thus, a high level of moral motivation may suggest that these same moral principles driving vegetarian behaviors support a host of other behaviors that collectively align one’s actions with one’s sense of self.

Concern about the morality of slaughtering animals is a prevalent vegetarian motivation (Ruby, 2012). However, this moral concern is often improperly synonymous with prosocial concerns about the well-being of animals: Disapproval of killing animals for food need not coincide a desire to benefit animals’ lives. Although beliefs about morality may give rise to personal and prosocial motivations, moral motivation measures a distinct construct. Upholding self-perceptions of rightness does not necessitate an aim to benefit oneself or others. Accordingly, some vegetarians seeking to act justly—such as individuals who are vegetarian because their religion forbids meat consumption—might lack any sort of salient personal or prosocial goals with regard to their food choices; rather, they may simply perceive eating meat as immoral and against their beliefs. As a result, some of these vegetarians might have low levels of both personal and prosocial motivation. Still, they have impactful reasons that influence their behavior, suggesting that prosocial and personal motivational orientations do not suffice to capture all reasons for being vegetarian. Some reasons must then involve a moral motivation.

Investigators should note that not all vegetarians categorized as ethically motivated in existing research necessarily have high levels of moral motivation. Operationalizations of ethical motivation have varied greatly across studies and might not have always measured

constructs related to perceptions of rightness and wrongness. For example, while Fox and Ward (2008) make ethical motivation synonymous with concern about animal welfare, Hoffman et al. (2013) operationalize ethical motivation not only to include concerns about animal rights, ethics, the environment, and other ethical matters but also to encompass religion and spiritual beliefs. The UMVI seeks to conceptually define moral motivation appropriately and clearly in order to avoid future discrepancies.

**4.2.4.4. Implications for existing and future research on motivation.** With these three motivational orientations (prosocial, personal, and moral), the UMVI offers a different perspective from existing research that predominantly categorizes vegetarians as either ethically motivated or health-motivated (Ruby, 2012). Much research (e.g., Hoffman et al., 2013; Jabs, Devine, & Sobal, 1998; Radnitz, Beezhold, & DiMatteo, 2015; Rothgerber, 2014; Ruby, 2012) has generated a notable body of literature on the differences between ethically motivated and health-motivated vegetarians, and the UMVI presents a novel approach that can advance this field even further. Categorizing specific motivations into ethical and health motivations reveals inadequate insight into the goals an individual hopes to achieve by being vegetarian and the meaning an individual assigns to being vegetarian. The traditional conceptualization of ethical motivation is particularly problematic. As Stiles (1998) notes, grouping all non-health motivations into the same category fails to capture what meanings they entail, suggesting that understanding motivational orientation may be more important than examining specific motivations themselves. The UMVI integrates this suggestion with research on goal content and morality in order to conceptualize an appropriate method of categorizing vegetarian motivations.

Conceiving ethical and health motivations within the UMVI framework might be enticing. For example, ethical motivation likely correlates positively with prosocial and moral motivations, and health motivation likely correlates positively with personal motivation. However, the relationship between these two systems of classification has yet to be explored definitively and might not be so straightforward.

Motivational orientations characterize the underlying psychological nature of how vegetarians internalize specific motivations. Because internalization is subjective, vegetarians with the same reason for being vegetarian can have entirely dissimilar motivational orientations. For example, religious motivation can present either a personal or prosocial focus: while some religiously motivated vegetarians report being vegetarian as a means of achieving spiritual growth, others see it as a way of respecting all life (Stiles, 1998). Thus, while some religiously motivated vegetarians might have highest levels of personal motivation, others might have highest levels of prosocial motivation. Vegetarians concerned about the environment might also vary in their motivational orientations (Hoffman et al., 2013). Although correlations between specific motivations and motivational orientations may exist, the subjectivity with which individuals evaluate these motivations in order to construct the personal significance of being vegetarian prevents causal inferences. As such, scales that measure motivational orientations must be distinct from scales that measure specific motivations for being vegetarian; they channel discrete psychological constructs.

By providing a framework for quantifying each individual’s levels of motivational orientations with distinct scales, depicting each individual’s orientations as continuous variables, and acknowledging the diversity of ways in which individuals weigh their motivations, the UMVI can provide a universal method of studying motivations in order to reduce discrepancies in operationalization and to increase validity and reliability.

### 4.3. Level 3: Externalized dimensions

While salience, centrality, regard, and motivation capture the assimilations of food choices into identity, externalized dimensions—dietary pattern, label, and strictness—capture the enactments of vegetarian identity through behavior. Such behaviors include interactions with food (dietary pattern and strictness) and with other individuals (label). Behaviors not only confirm vegetarian identity but also exhibit an individual's commitment to the identity (Stiles, 1998). As Fox and Ward (2008) suggest, not only do internalizations of vegetarian identity affect behavior, but behavior also affects internalizations, creating a feedback loop of interactions between identity dimensions. Together, situated within contextual dimensions, internalized and externalized dimensions form a coherent sense of vegetarian self.

#### 4.3.1. Dietary pattern

Vegetarian *dietary pattern* refers to the typical food choices an individual makes regarding the consumption of certain animal foods, given sufficient control over his or her food choices. Each vegetarian sets personal dietary rules that constitute which foods are acceptable and which are unacceptable to eat (Jabs et al., 2000). In a sense, dietary pattern is the foundation of vegetarian identity because all other UMVI dimensions directly interact with food choices. Indeed, for vegetarians, food choices can represent a way of life (Fox & Ward, 2008) and serve as an outlet for self-expression (Back & Glasgow, 1981).

Because vegetarians define themselves in terms of what they do not consume (Back & Glasgow, 1981), it is sensible to characterize dietary pattern in terms of which animal foods are avoided. The UMVI proposes two approaches to measuring dietary pattern: one qualitative and one quantitative. Each approach can serve advantageous roles in future research.

The qualitative approach to dietary pattern involves identifying which animal foods an individual eschews and to what extent. Ideally, this approach involves individuals open-endedly reporting their dietary patterns, as many vegetarians *limit*—rather than completely exclude—certain animal foods (Rothgerber, 2014). Questionnaires that present closed-ended questions (i.e. “Do you eat eggs?”) neglect self-identified vegetarians who generally avoid certain animal foods but do eat them in small amounts or infrequently. Given that individuals with the same dietary pattern vary in how they self-identify (Ruby, 2012), an advantage of the qualitative approach is that it can specifically characterize all vegetarians and capture the uniqueness of each individual's dietary pattern. Another advantage is that it can reveal differential correlates of excluding or limiting particular foods. Given that eating meat, dairy, and eggs each poses its own set of ethical considerations (Colb, 2013), future research should examine correlates of each animal food with UMVI dimensions and other outcome variables. Avoiding one type of animal food might be more conventional than avoiding another, suggesting that dietary pattern can represent the extent to which an individual's vegetarianism deviates from social norms.

The quantitative approach to dietary pattern involves measuring the number of animal food categories an individual eschews on a scale of one to six. The six food categories on the measure include red meat, poultry, fish, dairy, eggs, and other animal foods (e.g., honey, gelatin, etc.), with an individual's score on this scale representing the restrictiveness of his or her dietary pattern. While a score of one indicates a lowly restrictive dietary pattern, a score of six indicates a highly restrictive dietary pattern. One advantage of the quantitative approach is that it aptly permits quantitative analyses of dietary-pattern differences between groups and individuals. Another advantage is that it lucidly conveys the general restrictiveness of an individual's dietary pattern.

However, the quantitative approach has major limitations. First, it considers each animal food equal, neglecting the greater meanings associated with each food and individuals' tendencies to eschew certain animal foods more often than others. For example, research (e.g., Beardsworth & Keil, 1992; National Institute of Nutrition, 1997) consistently finds that vegetarians more often avoid red meat than eggs. Furthermore, the quantitative approach neglects vegetarians who limit, but do not completely exclude, certain animal foods from their diets. A solution to this is to ask individuals which foods they either exclude or limit from their diets, but this method unfittingly conflates food exclusion and food limitation as equivalent. Given these restraints, the use of the quantitative approach should be restricted to quantitative analyses of dietary-pattern differences. In examining each individual's vegetarian identity, the qualitative approach to dietary pattern is preferable.

#### 4.3.2. Label

Vegetarian *label* refers to how an individual identifies to others in terms of dietary pattern. Vegetarians can refer to their dietary patterns in a number of ways, and this personalized nature of labeling affords an individual some control over his or her food-choice social identity. Because people are expected to engage in behaviors typical of individuals with their social identity (Hogg et al., 1995), a vegetarian's label might not only indicate social group membership but also dictate what others constitute as appropriate foods for him or her to eat.

In a sense, label is the social expression of dietary pattern. However, the two do not always correspond (Ruby, 2012). An individual chooses how to reveal his or her vegetarian identity to others, which can lead to inconsistencies between dietary pattern and label. A significant proportion of self-identified vegetarians do not follow vegetarian diets strictly, questioning whether such an individual who eats meat occasionally should be considered a vegetarian. In other words, which UMVI dimension must an individual satisfy in order to qualify as a vegetarian: dietary pattern or label? We suggest that it depends on the research question at hand and hope that the UMVI framework can inform how investigators define vegetarianism. Rather than restricting study samples to self-identified vegetarians, using these dimensions flexibly can reveal more nuanced and novel insights into how people view themselves and their food choices. In doing so, however, future research must acknowledge that operationalizing vegetarianism by dietary pattern and label yield distinct samples of vegetarians that likely vary in several other aspects of vegetarian identity.

A lack of universality in definitions of vegetarianism may lead some individuals to face social repercussions for their labels. Vegetarian identity involves intricate interactions between personal identity and social identity, and discrepancies between the two may result in identity threats (Branscombe et al., 1999). An individual with high levels of vegetarian motivations who eats meat once per month may consider him or herself vegetarian yet face rejection from stricter vegetarians. Another individual who lacks any motivation to be vegetarian but just happens to eat very little meat might not consider him or herself vegetarian yet might be labeled as such by friends and family. These types of conflicts between personal identity and social identity further convolute the determinants of vegetarian status. A great proportion of vegetarians may grapple with this ambiguity in their lives, particularly when explaining their dietary pattern to others.

Several labeling discrepancies have been recorded. For example, vegetarians with the same dietary pattern do not always identify with the same specificity (Jabs et al., 2000). While one lacto-vegetarian might identify as such, another lacto-vegetarian might identify more simply as vegetarian. There can also be inconsistencies between how an individual identifies across various

contexts. Because food choices interact with personal attributes and social image (Bisogni et al., 2002), label may serve as an interface between personal identity and social identity. Consequently, the way in which a vegetarian labels his or her dietary pattern is likely to have a significant effect on his or her social experience. The existing literature suggests that vegetarians can engage with not only a general label of self-identification but also distinct in-group labels and out-group labels.

The distinction between vegetarian in- and out-group labeling resembles the code-switching function of Black racial identity (Clark, Swim, & Cross, 1995). Code-switching involves turning on or off an individual's inclination to present him or herself with stereotypically Black behaviors in order to satisfy a situation's social norms and expectations (Cross & Strauss, 1998). Similarly, vegetarians may code-switch with regard to food-choice label to act in accordance with contextual demands. Discrepancies between in- and out-group labeling exhibit vegetarian code-switching.

**4.3.2.1. In-group versus out-group label.** Vegetarian *in-group label* refers to how an individual identifies him or herself in terms of dietary pattern to other vegetarians. Vegetarian *out-group label*, on the other hand, refers to how an individual identifies him or herself to omnivores or the public. Because social identification intertwines an individual with a distinct social group (Ashforth & Mael, 1989), these labels have unique effects on vegetarian identity.

**4.3.2.2. Social implications of label.** According to Goffman (1959), individuals strategically seek to express themselves in ways that satisfy each situation's social norms. Some identity features are more apparent than others, and a feature's noticeability might influence an individual's ability to meet social norms. When an individual knows that he or she will be judged on a less-apparent, stigmatized social group membership, the individual may choose not to reveal this membership in order to avoid categorization (Branscombe et al., 1999). A similar phenomenon occurs with regard to food: Individuals may avoid revealing food-choice identities that others view negatively (Bisogni et al., 2002), such as a vegetarian identity (LeRette, 2014). Unlike many other identity domains—such as race or gender—an individual's physical appearance does not typically reveal his or her dietary self-perception. Thus, some individuals may decide to hide their vegetarian identity in certain situations that do not involve food and to present their vegetarian identity in ways that satisfy contextual demands in certain food-relevant situations. The latter may involve misreporting one's dietary pattern, which may occur to varying extents for vegetarians' in-group and out-group labels.

Given that labeling has implications for how individuals view themselves, how others view them, and how they relate with others who have similar dietary patterns, some individuals choose to in-group and out-group identify in different ways (Jabs et al., 2000). One inconsistency between the two labels pertains to dietary-pattern specificity. Some self-identified vegetarians in Jabs et al. (2000) identify merely as “vegetarian” when describing their dietary pattern to omnivores. While an individual who excludes meat but consumes fish and other animal foods (a pesco-vegetarian) and an individual who excludes all meat and dairy but consumes eggs (an ovo-vegetarian) follow different dietary patterns and may specify as such when interacting with members of the vegetarian in-group, both individuals may identify more broadly as “vegetarian” to those in the out-group. The authors suggest that doing so places them into the same larger social group and fosters a sense of coherence between all vegetarians within the greater society.

However, not every vegetarian dieter willingly adopts a vegetarian label (Fox & Ward, 2008). Unlike saying, “I do not eat meat,”

saying, “I am a vegetarian,” presents a lexicalized label. Lexicalization (expressing a property using a noun label) implies that a particular attribute is a more-central feature of an individual's identity and communicates membership in a larger social group more directly (Gelman & Heyman, 1999). Hoping to forgo facing these social implications, some vegetarian dieters refrain from labeling themselves as “vegetarian” or “vegan” in certain social environments because of how they think others might perceive them (Fox & Ward, 2008; Jabs et al., 2000). Still, these individuals are vulnerable to categorization threat: “being categorized against [their] will” (Branscombe et al., 1999, p. 36). Such threat can impair self-esteem (Branscombe et al., 1999).

In a sense, a vegetarian label—and possibly even social identity—may be forced upon some individuals. Consequently, some individuals' self-perceptions may contrast the social categories in which others place them. Must an individual who does not eat meat always be a vegetarian? Discrepancies between dietary patterns and labels—particularly for individuals who eschew any sort of general vegetarian label—requires further examination.

#### 4.3.3. Strictness

Vegetarian *strictness* refers to the extent to which an individual adheres to his or her dietary pattern. According to Stiles (1998), certain behaviors can demonstrate an individual's level of commitment to his or her vegetarian identity. Diet adherence exemplifies such a behavior. While some vegetarians will eat small amounts of meat in order to comply with social norms in certain contexts, other vegetarians will refuse to eat meat in any scenario, always adhering strictly to their dietary patterns (Stiles, 1998). Strictness resembles what Bisogni and her colleagues (2002) describe as “control,” a common food-choice identity dimension that characterizes the amount of discipline an individual exerts in eating situations (p. 132). As research on social norms (e.g., Fehr & Fischbacher, 2004) suggests, following a vegetarian diet in a meat-abundant society requires discipline (Greenebaum, 2012). Levels of discipline vary not only between individuals but also within the same individual across situations.

Each vegetarian sets certain dietary rules for him or herself and feels that these subjective rules constitute acceptable vegetarian guidelines (Jabs et al., 2000). However, individuals vary in how strictly they adhere to their own dietary rules (Willett, 1997). As covered earlier, a number of surveys have found that a substantial proportion of self-identified vegetarians violate their dietary patterns by eating meat occasionally yet still consider themselves vegetarians. The UMVI strictness dimension can provide a framework for understanding these discrepancies.

First, dietary pattern restrictiveness must be distinguished from strictness. A vegan (high dietary pattern restrictiveness) with low strictness may eat eggs very willingly if his or her friend says that they taste exceptionally good. On the other side of the strictness continuum, a pesco-vegetarian (low dietary pattern restrictiveness) with high strictness may eat fish, eggs, and dairy at every meal without hesitation but refuse to eat red meat or poultry under any circumstance. Although the vegan's dietary pattern is more restrictive than the pesco-vegetarian's, this pesco-vegetarian has higher strictness. Because an array of vegetarian dietary patterns exists, strictness is measured differently across vegetarians as a subjective evaluation of an individual's adherence to his or her self-identified dietary pattern.

Understanding strictness can help to explain and predict behavior in food-related social environments. Vegetarians often feel restricted in food-related social situations, leading some to violate their dietary pattern (Jabs et al., 2000). Despite following an identical dietary pattern, a high-strictness lacto-vegetarian would have a different experience than a low-strictness lacto-vegetarian

at a sports party where the premier snack is chicken wings. While the latter may break a rule for the occasion and eat a few wings, the former may adhere to vegetarianism and refrain from eating any wings. These two individuals would be likely to have different experiences at social events, as food-choice flexibility is important for managing interpersonal relationships (Bisogni et al., 2002). Socializing at restaurants might also present a problem for high-strictness vegetarians wishing to adhere to their dietary patterns (Katcher, Ferdowsian, Hoover, Cohen, & Barnard, 2010; LeRette, 2014).

Still, an individual may have more than just one level of strictness he or she brings to a situation. Like label, engaging with one's strictness might enable one to meet situational social norms. Indeed, as Bisogni et al. (2002) suggest, level of strictness can be contextually responsive. For some, strictness may depend on the presence or absence of other vegetarians. In food-related social environments, the presence of another vegetarian activates an individual's vegetarian identity in different ways than when the individual is the only vegetarian present (Jabs et al., 2000). As the only vegetarian in a situation, an individual may lower his or her strictness in order to ease feelings of dietary restrictedness, to conform to the social norm, and to avoid social conflict. However, vegetarians may exercise a higher level of strictness in situations involving another vegetarian, a behavioral change that might occur for two reasons. First, violating their dietary pattern in another vegetarian's presence might lead them to feel guilty (Jabs et al., 2000). Second, research on identity threat suggests that such a dietary violation might lead them to feel unaccepted by the other vegetarian (Branscombe et al., 1999).

An individual may see him or herself as part of a larger group of vegetarians. Identity threats can undermine this membership status by challenging the individual's position within the group, the group's value, or group distinctiveness (Branscombe et al., 1999). Because omnivores are less aware of vegetarians' particular dietary restrictions, self-identifications, and ethical concerns about eating animal foods, individuals are more likely to feel that dietary violations in the presence of omnivores pose little threat to their vegetarian identity (Jabs et al., 2000). On the other hand, vegetarians are well aware of these domains and may strive to foster an image of solidarity and community between vegetarians. Seeking to quench her hunger, one vegetarian participant in Jabs et al. (2000) reports looking around to check for any vegetarians in her surroundings before violating her dietary pattern. Supporting this example, research on identity threat suggests that other members of an in-group may threaten an individual who does not meet the group's behavioral requirements with a lack of in-group acceptance (Branscombe et al., 1999). Indeed, vegetarians might evaluate another vegetarian more negatively after discovering that he or she eats meat occasionally (Hornsey & Jetten, 2003). In a sense, some vegetarians police one another, aiming to enforce dietary rules and to guilt those who violate rules—having a low strictness may be viewed as a rule violation. Concern about this social judgment and its resulting identity threat can motivate vegetarians to exercise a greater degree of strictness in the presence of other vegetarians.

Strictness may explain some of the well-established discrepancy between the number of individuals who self-identify as vegetarian and the number who truly eat vegetarian diets. As Rothgerber (2014) questions, why would an individual who sometimes eats meat identify as vegetarian? Dietary pattern characterizes the typical animal-food choices an individual makes given sufficient control over his or her food choices. Individuals may see this control aspect as an underlying prerequisite to act in accordance with their vegetarian identity. In a situation with absolutely no vegetarian options, a low-strictness individual would most likely eat meat. However, this individual may still be following his or her dietary

pattern because this situation involves a lack of sufficient control. Thus, despite eating meat, this individual can still self-identify as vegetarian without any self-discrepancy. While surveys that measure the proportion of individuals who self-identify as vegetarian (e.g., Newport, 2012) would include this individual, other surveys that measure the proportion who eat vegetarian diets strictly (e.g., The Vegetarian Resource Group, 1997, 2009, 2016) would not.

The strictness dimension highlights that dietary-pattern adherence is a highly subjective evaluation of one's food choices. Willetts (1997) suggests that for some vegetarians, eating meat does not pose any threat to vegetarian identity. While some vegetarians view eating meat as a brief dietary lapse, others may even view meat as a normal component of their dietary patterns. Thus, some vegetarians might not perceive apparent dietary-pattern violations as vegetarian-identity violations; rather, reduced strictness may alleviate any potential guilt from such violations and prevent dietary imperfections from threatening one's identity.

#### 4.4. Perceived control

As the UMVI diagram illustrates (see Fig. 1), perceived control serves as a scale for organizing these ten dimensions (see Table 1) hierarchically into one coherent identity model. Perceived control is a subjective evaluation that embodies a feeling of control, rather than an objective measure of control. From least to most perceived control, we view the levels as follows: contextual, internalized, and externalized. Although we view perceived control as being roughly equal within the internalized and externalized dimensions of the model, we postulate timing and duration as presenting more perceived control than historical embeddedness within the contextual level.

Perceived control characterizes “the individual's ability to change the environment to fit the self's needs” (Rothbaum, Weisz, & Snyder, 1982, p. 8). With respect to vegetarian identity, perceived control can be thought of as the extent to which an individual feels he or she can engage directly with an identity dimension to modify his or her self-concept. Contextual dimensions present the lowest degree of perceived control. With the exception of migrating to another geographical location, an individual cannot alter historical embeddedness significantly. Timing and duration present greater amounts of perceived control. By deciding to become vegetarian or to return to an omnivorous diet, an individual can change his or her measures on these constructs. However, transitions toward and away from vegetarianism typically arise out of major changes in one's food-choice ideologies, motivations, and behaviors, not from a readily modifiable mindset with which one can engage directly. More so, once an individual has become vegetarian, terminating his or her vegetarianism is the only means of altering his or her duration. Thus, individuals are unlikely to feel as if they genuinely have much control over when they become vegetarian, for how long they have been vegetarian, or when to stop being vegetarian.

Internalized dimensions present more perceived control. Compared to contextual dimensions, internalized dimensions enable a greater degree of self-evaluation and intention. For example, an individual can avoid situations that involve animal foods in order to decrease salience. To increase centrality, an individual might join a vegetarian society. Selecting media that denigrates vegetarians may lead to a lower public regard. To increase prosocial motivation, an individual may seek out information on the mistreatment of livestock animals. As these four examples illustrate, vegetarians can exercise some degree of control over the internalized dimensions and even engage with them directly on a routine basis. However, vegetarians might still perceive a great portion of these internalizations as out of their control, as cognitive phenomena such as attitudes—including stereotypes and

**Table 1**  
Summary of the UMVI dimensions.

Dimension	Definition	Recommendations for Implementation
Historical Embeddedness	The historical and sociocultural conditions under which an individual is vegetarian	Investigators should note geographical location (of each individual and the investigation) and time period. Other contextual factors—i.e., a location's demographics, an individual's social network, or a time period's current events—may also be relevant. Assess via categorical or open-ended response.
Timing	The time course of an individual's engagement with vegetarianism throughout his or her lifespan	Investigators should evaluate the time course of vegetarianism in each individual's lifespan context, considering vegetarian identity changes in light of developmental stages, psychosocial transitions, and other relevant life events. Assess via categorical or open-ended response.
Duration	The amount of time that an individual reports being vegetarian	Investigators should consider how an individual might perceive his or her duration in relation to his or her entire lifespan, as age may shape perceptions of time. Assess via categorical or open-ended response.
Salience	The extent to which being vegetarian is a relevant feature of an individual's self-concept in a particular context	Investigators should consider how contextual features might dynamically influence salience. To do so, salience can be assessed via ecological momentary assessment techniques. Salience can also be “activated” experimentally via techniques that prime vegetarianism.
Centrality	The extent to which an individual views being vegetarian as a predominant feature of his or her self-concept	Assess via continuous scale.
Regard (private, public, and omnivorous)	The perceived valence of vegetarian and omnivorous social groups and their defining behaviors in terms of positive-negative evaluations	While private and public regards capture an individual's self-esteem specific to vegetarianism, omnivorous regard measures an individual's feelings toward the use of animal products. Assess via continuous scales. Private, public, and omnivorous regard each requires its own scale.
Motivation (prosocial, personal, and moral)	An individual's reasons for following his or her dietary pattern	Investigators should conceive plant-based dieting as a goal-oriented behavior. Vegetarian motivations are continuous variables, on which an individual can score anywhere from low to high. Individuals can have multiple sources of motivation. Assess via continuous scales. Prosocial, personal, and moral motivation each requires its own scale.
Dietary Pattern	The typical food choices an individual makes regarding the consumption of certain animal foods, given sufficient control over his or her food choices	To measure dietary pattern, investigators should consider which of the following foods an individual avoids: red meat, poultry, fish, dairy, eggs, and other animal foods (e.g., honey or gelatin), assessed via categorical response. As some individuals might have more specific dietary patterns, it may be advantageous to assess via open-ended response.
Label	How an individual identifies to others in terms of dietary pattern	Investigators can approach labels in several ways. Measuring label can involve asking individuals whether they are vegetarian, as to reveal self-identified vegetarians. Investigators can also ask individuals about their social interactions with others, noting the terminology with which they describe themselves. Do they refer to themselves as vegan, vegetarian, or pescatarian and to whom? Perhaps some individuals label themselves using unconventional terms or differently across contexts. Assess via dichotomous, categorical, or open-ended response.
Strictness	The extent to which an individual adheres to his or her dietary pattern	Investigators should note that strictness pertains to dietary-pattern adherence as a whole, not meat abstention alone. An individual who avoids all animal foods but often eats dairy has a low strictness, even if he or she is very strict about avoiding meat. Assess via continuous scale.

prejudice—are largely automatic (Devine, 1989).

Externalized dimensions present the greatest degree of perceived control. Through these dimensions, an individual can most directly “change the environment to fit the self's needs” (Rothbaum et al., 1982, p. 8). Given that motivation directly influences food choices, individuals can deliberately alter their food behaviors in order to satisfy this internal impulse. By setting their own dietary rules, individuals most likely perceive much control over their dietary patterns. Label also presents much perceived control. Individuals decide how to describe their dietary patterns to others and even regulate their self-descriptions in response to contextual characteristics. Exhibiting the high degree of control vegetarians perceive over label, some vegetarians even seek to avoid any vegetarian label in certain situations. Strictness presents vegetarians with similarly high levels of perceived control over identity, as an individual can deliberately violate his or her dietary pattern in order to satisfy certain contextual demands. These three examples suggest that individuals feel the greatest degree of perceived control over the externalized vegetarian identity dimensions.

#### 4.5. Potential correlations between UMVI dimensions

Existing research points to a number of probable correlations

between UMVI dimensions. However, discrepancies in operationalizing variables across studies limit the ability to apply many previous findings concretely within the UMVI framework. Furthermore, given that the UMVI proposes several variables that research has not yet explored directly, these correlations imply suggested relationships, not definitive findings. Thus, future research must validate the following hypotheses.

Correlations are probable between dimensions within the same vegetarian identity level and between dimensions across levels. Exemplifying intra-level correlations, some internalized dimensions appear to correlate with other internalized dimensions. Exemplifying inter-level correlations, duration (a contextual dimension) appears to correlate with both internalized and externalized dimensions. Existing research (e.g., Fox & Ward, 2008; Hamilton, 2006; Ruby, 2012) suggests that both duration and motivation have notably strong predictive value.

Much research (e.g., Beardsworth & Keil, 1992; Fox & Ward, 2008; Hamilton, 2006; Stiles, 1998) suggests that duration influences motivation, as motivations for being vegetarian tend to change over time. Most often, vegetarians acquire more motivations, rather than dropping motivations (Hamilton, 2006; Stiles, 1998). However, new motivations typically do not replace initial motivations; rather, they increase an individual's total number of motivations and strengthen his or her vegetarian identity (Stiles,

1998).

Not only can duration influence motivation, but motivation may reciprocally predict duration. Research consistently finds that primarily ethically motivated vegetarians report being vegetarian for a longer period of time than do primarily health-motivated vegetarians (Hoffman et al., 2013; Radnitz et al., 2015). Motivation also appears to predict a number of other correlates. Ethically motivated vegetarians may have higher centrality (Hoffman et al., 2013), higher strictness (Rothgerber, 2014), and lower omnivorous regard (Ruby, 2012). Ethically motivated vegetarians also tend to exclude more animal foods from their diets (Hoffman et al., 2013), suggesting a positive correlation between ethical motivation and dietary pattern restrictiveness. While these findings cannot offer definitive conclusions about the UMVI motivational orientations, they nonetheless highlight the predictive value of vegetarian motivations in general.

In contrast to the considerable body of work on specific vegetarian motivations classified into health and ethical, very limited evidence has examined constructs related to motivational orientations. With this said, available evidence is promising. One study points to a link between motivational orientation and strictness. In examining ethically motivated vegans who are concerned about animals, Greenebaum (2012) suggests that for vegans with high levels of prosocial motivation, veganism is construed as an all-encompassing lifestyle rather than simply a dietary facet of their daily experience. These vegans feel that eating any amount of animal food would violate their lifestyle and contradict their commitment to benefitting animals, suggesting a positive correlation between prosocial motivation and strictness. Future research should test this hypothesis and examine relationships between UMVI motivational orientations and other dimensions as well.

While research on vegetarian duration and motivation provides an abundance of testable hypotheses, a dearth of research explicitly examining other UMVI dimensions prevents the development of evidence-based hypotheses in these domains. However, the limited research that has measured constructs similar to other dimensions reveals notable trends. For example, when vegetarians anticipate that omnivores will perceive them negatively for being vegetarian, they may avoid labeling themselves as vegetarian (Jabs et al., 2000; LeRette, 2014), suggesting that low public regard can predict discrepancies between in-group and out-group labels.

Future research should examine correlations between UMVI dimensions, both within levels and between levels. Furthermore, finding relationships between these dimensions and variables beyond vegetarian identity can also have notable implications. For example, which dimensions might predict certain domains of psychological well-being? What can dimensions predict about behaviors beyond those pertaining to vegetarianism and food? Particularly for those with high centrality, being vegetarian might influence how individuals act in matters unrelated to food, as their vegetarian identities may be more prone to activation, such as the case with racial identity (Sellers et al., 1998).

## 5. Discussion

The above conceptualization proposes a novel way of considering vegetarian identity: an individual's thoughts, feelings, and behaviors regarding being vegetarian. This model can enable researchers to revisit their existing data on vegetarians with an eye toward a more holistic understanding. It also invites researchers to develop sound instruments that adequately capture these dimensions. Scale development and empirical validation are ultimately necessary to confirm not only the actual structure of the UMVI but also its applicability. Using this scale, researchers should recognize that a range of factors—such as cultural context,

intersectionality, lifespan timing, and process of dietary change—might influence scores on the UMVI.

### 5.1. Directions for future research

#### 5.1.1. Cross-cultural applicability of the UMVI

Historical embeddedness suggests that the larger social context influences to a great extent the interactions between food choices and identity (Baltes, 1987). Cultures vary significantly in their food behaviors and in the meanings they assign to certain foods (Kittler et al., 2012). In a sense, “eating is a daily reaffirmation of cultural identity” (p. 4). Consequently, being vegetarian in one culture may present radically different experiences than being vegetarian in another culture.

In constructing the UMVI, this paper integrates research on the experiences of vegetarians in Western cultures and is therefore fitting for future research in these cultures. Does the UMVI provide a suitable framework for studying vegetarian identity in any context? While the historical embeddedness dimension acknowledges cultural differences in identity, cultural perspectives on constructs rooted in other UMVI dimensions may vary as well. Certain dimensions might be irrelevant for vegetarians in some cultures, while additional dimensions might be necessary to capture vegetarian identity in other cultures. Without empirical verification, no definitive conclusions can be made. Measurements are needed to determine whether the UMVI can capture the contextually relevant contexts, internalizations, and externalizations of vegetarian identity universally.

#### 5.1.2. Vegetarian identity and intersectionality

Given that associations of meat with masculinity are prevalent in a range of cultures, the disproportionately high ratio of vegetarian women to vegetarian men in Western cultures is unsurprising (Ruby, 2012). As such, perceptions of male vegetarians and female vegetarians may vary (Thomas, 2016). Gender stereotypes and disproportionate demographics may lead men and women to have different experiences as vegetarians. Future research should consider exploring how these varying experiences may reflect potential gender differences in vegetarian identity, and if gender may moderate the effect of these experiences on the maintenance and expression of UMVI dimensions.

In addition to gender, many other group memberships and life circumstances—i.e., race, religion, social class, etc.—may interact dynamically with the expression of vegetarian identity. In order to better appreciate the embeddedness of plant-based food choices, future research should examine the intersectionality of vegetarian identities with these other constructs. Studying one domain of identity in isolation fails to situate vegetarianism within complete context.

#### 5.1.3. Vegetarian identity and lifespan timing

Ruby (2012) notes that little is known about either vegetarian children or the differences between individuals who are vegetarian since birth and those who transition to a vegetarian diet later in their lives. Situating research questions within the UMVI's timing dimension, investigators can approach this unexplored terrain through informed developmental perspectives. Changes in an individual's vegetarian status may be intertwined with other psychosocial transitions and life events.

Transitioning to vegetarianism later in life would generate unique relationships between food choices and self-concept unlike those that arise out of being vegetarian since birth. Given that very few vegetarians have followed vegetarian diets since birth (Beardsworth & Keil, 1991), most vegetarians have experienced some duration of their lives as omnivores. Particularly for

vegetarians with either low omnivorous regard or high moral motivation, such a drastic identity transition from omnivore to vegetarian may result in a fragmented sense of self. Anecdotal evidence (e.g., Colb, 2013) and empirical evidence (e.g., Jabs et al., 2000) suggest that becoming vegetarian can influence an individual's evaluations of both present self and past self. A vegetarian may view his or her past omnivorous food choices as unaligned with current ideological beliefs and even perceive this past omnivore self as immoral. Having low omnivorous regard, a vegetarian may despise the sort of person he or she used to be. Indeed, for some individuals, adopting a vegetarian diet can be a sort of “spiritual transformation” (Jabs et al., 2000, p. 382). Cross-sectional as well as longitudinal studies examining the role of timing in vegetarian identity development are much needed.

#### 5.1.4. *From omnivore to vegetarian: the process of dietary change*

Shaped by unique life experiences, the process through which an individual adopts a vegetarian diet is highly personal (Beardsworth & Keil, 1991). However, several studies (e.g., Beardsworth & Keil, 1991, 1992; Haverstock & Forgyays, 2012) have noted two types of conversions: gradual dietary adoption and abrupt dietary adoption. While gradual adoption involves progressive change in eating habits and beliefs, abrupt adoption involves rapid dietary change. Notable correlations may exist between dietary adoption type and certain UMVI dimensions. For example, Haverstock and Forgyays (2012) suggest that gradual adoption may predict a longer vegetarian duration. Exploring other ways in which type of dietary change relates to UMVI dimensions can generate a deeper understanding of not only vegetarian identity development processes but also identity processes in general.

#### 5.1.5. *Examining UMVI dimensions beyond motivation*

Much research (e.g., Hoffman et al., 2013; Jabs et al., 1998; Radnitz et al., 2015; Ruby, 2012) has found significant correlates of motivation. Future research should categorize individuals by other UMVI dimensions in order to examine differences between types of vegetarians and to reveal specific correlates of particular dimensions. For example, in what ways do low-strictness and high-strictness vegetarians differ? What is the relationship between duration and regard? How might motivation moderate the behavioral effects of increased salience when dining at a restaurant? Can omnivorous regard predict psychological well-being? Such questions—and countless more—await investigation.

#### 5.1.6. *Predicting and explaining social behavior*

Studying the UMVI can elucidate vegetarians' social behaviors. Given the contextually responsive nature of vegetarian identity, the UMVI may be particularly useful for predicting and explaining behavior under certain environmental circumstances. Jabs et al. (2000) reveal two promising patterns. First, some vegetarians adjust their level of strictness across situations depending on the presence of other vegetarians. Second, some vegetarians label themselves differently depending on certain factors, such as the social acceptability of vegetarianism. More patterns may exist. Heightened salience can influence behavior by leading an individual to focus on his or her vegetarian identity, thus activating contextually relevant dimensions. For example, being in the presence of people eating meat would shape the social experience of an individual with low omnivorous regard differently than it would for an individual with a higher omnivorous regard. By outlining the vegetarian identity dimensions, the UMVI may be able to predict how vegetarians will act in situations of high salience.

A recurrent finding is that being vegetarian has significant effects on an individual's social relationships (Beardsworth & Keil, 1992; Larsson et al., 2003; MacInnis & Hodson, 2015). The mere

act of being vegetarian itself may spur tension, as omnivores tend to exhibit negative biases toward vegetarians (MacInnis & Hodson, 2015; Minson & Monin, 2012). Accordingly, vegetarians often receive microaggressions (LeRette, 2014), encounter discrimination (MacInnis & Hodson, 2015), experience familial conflict (Larsson et al., 2003), navigate altered relationships with friends and colleagues (Beardsworth & Keil, 1992), and endure a host of other social tensions (Beardsworth & Keil, 1992; Jabs et al., 2000) due to their food choices.

These social repercussions may arise from interactions between particular components of an individual's vegetarian identity and characteristics of the social environment. Future research should use the UMVI to reveal relationships between dimensions and social outcomes. For example, what can certain UMVI dimensions predict about a vegetarian's social network? Which dimensions might predict the level of social conflict that a vegetarian experiences? Which dimensions might predict whether a vegetarian has a support network of other vegetarians? Perhaps morally motivated vegetarians, for example, may seek to connect with other vegetarians in order to surround themselves with like-minded in-group members who share similar perceptions of rightness and wrongness. The UMVI may offer insight into the processes through which food choices influence interpersonal dynamics.

#### 5.1.7. *Redefining and rediscovering what it means to be “vegetarian.”*

By conceptually defining various interactive psychological constructs, the UMVI can elucidate what it means to be a vegetarian. Using the UMVI, researchers can explore why some individuals who label themselves as vegetarian eat meat occasionally, yet other individuals who eat only small amounts of meat do not label themselves as vegetarian (Gossard & York, 2003). While dietary pattern and label may convey an individual's vegetarian status externally, other dimensions—such as regard, strictness, or centrality—may influence self-perceptions of vegetarian status. To some extent, these perceptions might depend on whether an individual focuses on the consumption of plant foods or the avoidance of animal foods when making food choices. In order to reevaluate the meaning of vegetarianism, future research should examine whether a shift toward a plant-based diet need coincide a deliberate avoidance of animal foods. Essentially, understanding the relationships between vegetarian identity constructs can have a number of implications. Two implications concern methods of recruiting vegetarian samples for future research and methods of measuring vegetarian demographics.

As reviewed earlier, surveys measuring the proportion of individuals who self-identify as vegetarian yield substantially different results from surveys measuring proportions who eat vegetarian diets. The former survey method may have greater implications for vegetarian identity, given that the latter method most likely fails to categorize individuals with low strictness as vegetarian. Beyond such problems at the population level, problems exist on an individual basis. As reviewed in the section on label, individuals who eat vegetarian diets but do not consider themselves vegetarian may face categorization threat. Future research should explore how such discrepancies between dietary pattern and label can affect social interactions and psychological well-being. Furthermore, what factors might underlie this diet-label discrepancy? Understanding the predictive value of particular dimensions as well as the interactivity between dimensions can provide insight into vegetarians' behaviors.

Using the UMVI, future research should explore the perceived requirements of being a vegetarian in order to understand the ways in which people define “vegetarian.” While inconsistencies exist both in scholarly definitions of vegetarianism and in vegetarians'

self-identifications (Ruby, 2012), there may be notable trends in how people define these constructs. For example, might self-identified vegetarians perceive the requirements necessary to call oneself a vegetarian differently than omnivores? At what vegetarian duration do people eating vegetarian diets begin to identify as vegetarian? At what duration do omnivores label vegetarian dieters as vegetarian? Studying the UMVI might also reveal trends within vegetarians. Given that some prosocially focused, ethically motivated vegetarians do not consider personally motivated, health-concerned vegetarians as true vegetarians (Fox & Ward, 2008; Greenebaum, 2012), motivation may predict how vegetarians define “vegetarian.” Prosocially motivated vegetarians, for example, might have stricter requirements for earning the label—they might view having high prosocial motivation as a requirement. Might motivation or another dimension predict what dietary pattern a vegetarian considers a requirement? Understanding the underpinnings of the widespread inconsistencies in definitions of “vegetarian” can not only influence methods of generating demographic data but also help to unify research on plant-based food choices.

## 5.2. Concluding remarks

As concerns about public health and the environmental persist and the vegetarian population expands, there is a growing need for future research on vegetarianism. By elucidating psychological constructs that both influence and result from food choices, an identity framework is suitable for such research. Several nations' vegetarian populations number in the millions (European Vegetarian and Animals News Alliance, 2013), and a variety of industries can benefit from better understanding this substantial target audience. Food and clothing retailers, for example, can market more efficiently to plant-based consumers and offer more appealing products. Restaurants can cater to vegetarian customers more aptly. The UMVI can also be of use to healthcare practitioners. Physicians, mental health professionals, dieticians and nutritionists, and other practitioners can use the model in order to better understand how their clients engage with vegetarianism. Ultimately, across all concerns, it is essential to conceptualize vegetarianism as an identity.

The implications of studying vegetarian identity extend beyond matters pertaining to food choices—they can also further research in other realms of psychology. The UMVI highlights two fundamental aspects of social processes. First, social categorization can lead an often overlooked trait or behavior (i.e., avoiding meat) to become a defining feature of an individual's social identity. By situating processes within sociocultural contexts, developmental contextualism emphasizes that contextual characteristics can assign social significance to nearly any behavior and determine relevant bases for categorization (Lerner & Kauffman, 1985). Second, individuals who deliberately violate certain social norms might develop intricate methods of managing deviant behaviors with social conventions, and a social identity can support this system. Within this social identity, there can be a number of distinct dimensions that enable effective self-regulation between internal self-evaluations and external contextual demands.

Like race, religion, gender, or sexual orientation, vegetarianism can comprise one domain of an individual's multifaceted social identity. Identity processes can share fundamental features across domains. Accordingly, studying vegetarian identity can generate more knowledge on general aspects of self-categorization, identity formation, and intergroup relations that may be applicable to a range of other psychological disciplines. Social categorization stems from individual differences, and vegetarian identity exemplifies one such difference that stimulates psychosocial processes that

may display generalizable characteristics.

Unifying research from several bodies of literature, the UMVI offers a number of advantages for future research. By using clearly defined terminology that aim to capture psychological constructs universally, it can prevent discrepancies in operationalization and improve coherence across studies. The UMVI also provides a framework for quantifying vegetarian identity, which can enable future research to examine group differences in identity as well as correlates of particular identity dimensions. Eight of the ten UMVI dimensions—all but historical embeddedness and label—are readily quantifiable. Furthermore, the UMVI highlights that vegetarians represent a diverse group and offers a method by which to capture this diversity. Being vegetarian extends beyond one's dietary pattern or label.

Using the UMVI, future research can integrate principles from developmental and social psychology and work within identity frameworks in order to explain and predict findings on vegetarianism. Conceptualizing food choices and their relation to identity within a developmental-contextual perspective can unify well-established bodies of literature in order to generate more knowledge on vegetarianism efficiently and sensibly.

The UMVI offers advantages for studying vegetarianism on a societal level, and examining this phenomenon remains inseparable from considering each individual. To address concerns on the individual level, the UMVI is essential. Fundamentally, the UMVI is a measurement model that encompasses an individual's experiences, representing his or her daily thoughts, feelings, and behaviors through conceptually defined dimensions. Every dimension exerts some force on every meal a vegetarian encounters and on every conversation a vegetarian has about food choices. Without the UMVI, we will continue to neglect the experiences of millions of individuals who engage with this uniquely personal identity several times each day. Researchers, practitioners, and policy makers need instruments that capture vegetarians' experiences in order to conduct research more efficiently, to understand vegetarians' lives more concretely, and to implement social changes more soundly. The UMVI can unify the vegetarian literature and represent this substantial demographic appropriately. With the UMVI, we can ask more insightful questions, employ more suitable research methods, and generate a better understanding of plant-based food choices as the vegetarian population evolves. Ultimately, the UMVI can provide researchers with a cohesive conceptual model for understanding the vegetarian experience and the unique identity profiles that shape it.

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