

A Phenomenology of Taste

Researching different perceptions of the good tomato

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Thesis Abstract

Due to fewer people being directly involved in agricultural food production, there is a decline in direct, practical knowledge of food growing processes. Thus there is a lack of understanding ecological effects of food production. Despite fewer farmers and the significant negative ecological effects of industrial scale agriculture, a globalized food system provides a great quantity of food choices and continuity of food supply. While being offered a continuous supply and choice of foods, an eater without direct knowledge of food growing processes may not be capable of evaluating foods for ecological effects. And, in such case, a food quality may not seem related to ecological quality. Differing knowledge of how and where food is grown entails differing food values. *Since our food choices pose ecological effects and a personal food preference may motivate a choice, what causes a person's perception of a preferable food?*

CHAPTER 1: INTRODUCTION

For this project I have studied the theory and practice of “taste” in order to investigate what causes a person to perceive a food as good and preferable. I aimed to help my reader understand how this may motivate a food choice—since everyday food choices pose ecological effects.

THE RESEARCH BACKGROUND

Virtually all the population growth expected at the world level during 2000-2030 will be concentrated in urban areas.¹

The world's urban population reached 2.9 billion in 2000 and is expected to rise to 5 billion by 2030. Whereas 30 per cent of the world population lived in urban areas in 1950, the proportion of urban dwellers rose to 47 per cent by 2000 and is projected to attain 60 per cent by 2030. (UNPD 2002)

This global population trend is reflected in statistics for the United States (US). In the year 2000, the US had a population of 282 million people, of which, 77% were estimated to live in *urban* areas (SEDAC 2001). It is projected that the US will have an urban population of over 300 million by 2030 (UNPD 2002).

Accordingly, more people in the US now live in urban places than rural.

The worldwide shift of human concentration from rural to urban areas has profound effects for all aspects of life. Naturally, these effects may be valued

¹ For this project I used the United Nations Population Division's meaning of “urban”, defined as a spatial concentration in which 5,000 people or more reside (UNPD 2002).

both positively and negatively. This research project identifies urban population growth as problematic within the context of a US system for food, which essentially relates agriculture to human nutrition.

A U.S. FOOD PROBLEMATIC: Rural farms for urban eaters

The US Department of Agriculture classifies a farm as any place from which \$1,000 or more of agricultural products were, or normally would be, produced and sold during the Census year (NASS 2009b). The 2007 Census of Agriculture counted 2,204,792 farms in the US (NASS 2009b). It is calculable from the recent Census and population data that there are approximately 110 urban US eaters for each US farm.² For a single US farm to annually feed 110 urban US eaters, the focus of the operation must be upon the annual *quantity* of food-things produced. This is a reasonable assertion given that an American eats about fifteen hundred pounds of food a year (Pollan 2006:94). The population of urban American eaters needs a great quantity of food grown annually by each farm-as-feeder.

Problems become obvious when considering what is eaten by any one, urban US resident during an average day—much less than a given year—alongside the fact that rural US farms remain the primary supplier for the US food system. The economic logic of “supply and demand” suggests reason why US farms contribute to ecosystem pollution. Given the previous scenario of the modern US food system, a farm can not be structured to account for all qualitative effects of its inputs and outputs. And so, for example, a farm operation may lack justification for production methods that contribute toxically accumulating chemicals to the soil while also yielding a great quantity of food. That many American food choices place demand on farms to operate in

² This is my calculation derived from the 2005 urban US population estimate (UNPD 2008) divided by the 2007 farm count provided by the US Census of Agriculture (NASS 2009b).

ecologically unjustifiable ways has become a fact of the matter of fewer-food-farmers combined with more-urban-eaters.

THE RESEARCH TOPICS: Taste and tomatoes

It seems we can know the good things to eat by “taste”. For the phenomenon of taste, we may assess the essential character of a food object. In other words, by tasting a food, we naturally perceive its value or its good “food”-ness. However, it is not uncommon that one eater tastes goodness in a certain food that another eater experiences in *bad* taste. The thesis for studying this is that different knowledge about how and where food is grown may factor importantly for different taste perceptions amongst people. And so, due to less direct types of knowledge of food growing, urban eaters may not be able to perceive a food’s value in relation to ecological effects it poses.

A PHENOMENOLOGY

This study of taste formed from considering aphoristic, the oft-used translation of Brillat-Savarin’s words: You Are What You Eat. The quotation «Dis-moi ce que tu manges, je te dirai ce que tu es» is contextualized in the original “Physiology of Taste” (Brillat-Savarin 1825:1). I believe that my food choices manifest my personal taste preferences. My ability to taste seems important for discovering food truths, and obviously it was important to the French gastronome Jean-Anthelme Brillat-Savarin who wrote *Physiologie du Goût* in 1825. But I wondered how this might be so for others, and so I have studied how some specific Americans know a good food that they eat.

Steinar Kvale wrote about prevalent philosophical lines of thinking inherent to qualitative research. Defining the one explicitly referenced for this research project, Kvale states: “Phenomenology is interested in elucidating both that which appears and the manner in which it appears” (Kvale 1996:53). It was necessary to focus on one food, as a fact-of-the-matter, for this phenomenology of taste. Because the research began from my personal context, I focused upon what

I already knew to be a distinctly good-tasting food grown in the area where I grew up. Therefore, I studied tomatoes—as the more or less tasteful thing to eat—for people living in urban St. Louis, Missouri.³ The St. Louis area has an appropriately warm climate for growing tomato plants. I have memories of exemplary tomatoes grown in my mom’s garden, my grandfather’s, as well as in the backyards of friends’ houses. I was born and raised for 18 years in a rural county approximately 65 kilometers from the St. Louis City center. The tomatoes available at grocery stores are rarely as good to taste as those I remember being grown close to home. I wonder if other St. Louisans share my taste, and if so, how the bad tomato becomes a good food choice. I confirmed that this urban place and memorable food were most reasonable for focusing the thesis research from the following quick facts.

In 2007, US farm workers harvested tomatoes from a total of 442,000+ acres (NASS 2009a). Over half of that total quantity was distributed on ninety-seven “very large farms”; each of these growing 1,000+ acres—or 405+ hectares—of tomato plants (NASS 2009a). These Census numbers and the aforementioned population data together suggest that the majority of tomatoes recently grown in the United States are done so in concentrated farming areas, which are distanced from the majority of tomato-eaters living in urban areas. In fact, a tomato travels an average of 1,500 miles from rural-tomato-farm to urban-US-eater.⁴ Given this food system, a tomato could easily be chosen as a good thing to eat without the urban eater knowing much about *how* and *where* it was grown. And so, a tomato may be perceived a good one despite negative ecological effects posed by the 1,500 mile course from farm field to urban table. Since only a small percentage of urban St. Louisans work directly in agriculture,

³ For this research project “urban St. Louis” was the geo-politically delimited area of St. Louis County—a place on the Eastern border of the state of Missouri, in the midwestern region of the US.

⁴ The 1500 miles average is cited in reference to data compiled for an oft-quoted study of energy use in the US food system (Hendrickson 1996). To note: this figure represents a *Fresh Produce* food product category in Hendrickson’s study, which is alongside four others that have lesser transportation distances estimated.

it may be that few of them do know how and where their tomatoes are produced. Of the 1,016,315 residents of St. Louis County in the year 2000, there were 1,146 people working in the sector of “Agriculture, forestry, fishing and hunting, and mining” (USCBB). What causes a St. Louisan’s perception of the good tomato? Are there significant taste-able differences in quality of tomatoes produced on a far-away farm versus those grown locally to St. Louis?

Ecological conditions affect tomato quality. For example, tomatoes are susceptible to a physiological disease called “blossom end rot” when growing conditions are inadequate to supply water and calcium to the plants for the developing fruits. This disease is familiar to commercial and home-growers of tomatoes that identify stricken plants by the resultant fruits developing spots and lesions (Cornell 1979). Blossom end rot affects a tomato fruit visibly and texturally. It is manageable by growing the tomato plants in warm, well-drained soil that is carefully maintained in moisture and structure. According to the Cornell University Department of Plant Pathology:

In emergency situations, foliage can be sprayed with calcium chloride solutions. However, extreme caution must be exercised since calcium chloride can be phytotoxic if applied too frequently or in excessive amounts. Foliar treatment is not a substitute for proper treatment of the soil to maintain adequate supplies of water and calcium. (Cornell 1979)

This advice, however, leads me to reason that a tomato grower could forego *proper treatment of the soil*. If there are plant growing methods available that emphasize quantity of fruiting plants before quality of fruits, then maintaining the soil ecology could be an afterthought. The primary point here is that a food’s natural quality is a function of ecological conditions. It is problematic that this may or may not necessarily be explicit in the foods available to urban eaters. It could be useful to make a closer investigation on farming operations to understand the extent that good tomato-ness is an ecological effect, but this study

focuses upon the role that the urban eaters play in the problem presented. I investigate just what of taste—as the urban eater’s ability to perceive food quality—may motivate a food choice that is “bad” by virtue of negative ecological effects.

THE THESIS STRUCTURE

After introducing the problem to research and the themes for focusing the study, this thesis continues in five chapters. The methodology chapter justifies the data collection for a phenomenology of taste. Chapter three is a presentation of theoretical “taste” and “tomatoes”. Following that is a chapter for explaining the methods used to practically test taste and tomatoes. Chapter five then represents the “Tomato Tasting Dialogues” as research findings and offers analysis understandable in tandem with the theories presented previously. And, finally, chapter six reports the research results and concludes the thesis with a vision for solving the problem.

CHAPTER 2: METHODOLOGY

I ventured to forge an interdisciplinary study of taste, in order to better understand the phenomenon as a motivator for food choice posing ecological effects. The project began with my conceiving a knowledge typology for different ways a person can understand a food plant's natural growth process. This was part of the theoretical foundation for the practical component of the research. Appropriate to philosophical discipline and the social science of anthropology, my research combined data collection activities of textual reference and fieldwork. The "Tomato Tasting Dialogues" entailed a sequence of practical tests for *taste* and *tomatoes* with individually participating St. Louisans.⁵ Using a dialectical approach to this fieldwork, I placed validity in shared personal experiences in order to corroborate the phenomena. St. Louisans were involved to invoke their knowledge and ability to taste as well as to provoke their tomato evaluations. Thus, the Tomato Tasting Dialogues also accomplished practical philosophy.

I began this study by defining it as problematic that urbanizing American populations have become far-removed from their food sources. The fact that a decreasing number of St. Louisans are directly involved with agricultural environments means that fewer know *how* and *where* their food is grown. Consequently, these urban eaters may have a wide range of understanding ecological effects of the foods available at St. Louis grocery markets. It may be these different types of knowledge differently affect perception of food. For this thesis the project theorized a knowledge typology of tomato plant growth in relation to a phenomenology of taste.

KNOWLEDGE TYPES

Table 1 illustrates a knowledge typology. I conceived four "types" of knowledge possible for a person's understanding of food plant growth. This project

⁵ Hereafter abbreviated as "TTDs", to indicate the "Tomato Tasting Dialogues" in total, or "TTD" to represent each participant's event out of the entire group.

specifically investigated the types of knowledge in relation to a tomato plant's growth, and aimed to substantiate these for the research questions. These knowledge types are qualified by personal degrees of direct, practical experience with the growing process of tomatoes.

Table 1. Knowledge Typology of Food Plant Growth

KNOWLEDGE TYPOLOGY OF (Tomato) FOOD PLANT GROWTH	
Type 1	DIRECT, "Practical Knowledge"
Type 2	DIRECT, Non-"Practical Knowledge"
Type 3	INDIRECT Knowledge
Type 4	NO Knowledge

Direct, Practical knowledge of tomato plant growth is achieved by planting and tending a tomato plant through its fruiting. Practical knowledge precedes the intentional action to put one's hands in the dirt. And, in this way a person experiences multiple-sense informed perception of the tomato plant growth process. Such experience necessitates personal involvement to the extent that ecology of plant growth is understandable. The person is granted simply knowing the value of a "tomato" by intentional actions to produce such a thing. Furthermore, this categorization presumes the tomato plant is grown for the intention to eat fruit that produces by the plant's growing process, and so she/he does taste them. She/he, therefore, knows the tomato is good by specifically informed taste.

Direct, Non-Practical knowledge is, like Type 1, also achieved by a person's direct perceptual experiences of growing food plants. But, differing from Type 1, there is no intentional action made by her/him to grow the tomato plants experienced. A Type 2 person may learn about the process of tomato plants growing by, for example, visual observation that a "tomato" happens in such-and-such a way. That there may be an understanding of a tomato plant's

growing environment in relation to tomato fruit quality might factor for the person's ability to taste different kinds of tomatoes.

Indirect knowledge of tomato plant growing develops not from a sensual experience. Books, television, the internet or other media sources may inform a person's knowing that tomatoes grow by a particular ecological process. A person's indirect knowledge may also obtain in relevant conversation with individuals who have direct knowledge of tomato plant growing.

A person who can not say to have knowledge of the growing process of a tomato is categorized as Type 4. This person can not perceive tomato quality as an ecological effect.

ACTION and KNOWLEDGE of "Taste"

I applied philosophies of *action* and *knowledge* to this study that postulates "taste" motivates food choices. The following sections provide the reader with my philosophical approach for researching how perception of a preferably good food relates to a type of knowledge of the food's growth process.

Intentional Action

Choosing a food; eating a tomato; and also, growing a tomato plant; are all different operations of actions a person may do. Although there may be a simple automaticity amidst the action, these operations do not result by brute body movements. According to Brillat-Savarin, "we eat nothing without sensing it with more or less awareness" (Brillat-Savarin 1854b:19). And so, of what are we aware in the action of eating if it is not simply done?

The actions listed in the previous paragraph can all be characterized as *intentional*. The philosopher Elizabeth Anscombe defines intentional actions as those "to which a certain sense of the question 'Why?' is given application (...)" (Anscombe 1963:9). For a person's action to be characterized intentional—by my interpretation of Anscombe's philosophy—she/he isn't simply aware that

certain bodily movements are happening. But she/he also *knows why for* the achievement of the certain action.

Knowledge in Action

There is a distinct kind of knowledge in an action that a person “(...) *knows without observation*” (Anscombe 1963:13). Anscombe called this “practical knowledge” and appealed to a phrase that Thomas Aquinas used for distinguishing the operations of a practical intellect from those of speculative or theoretical (Anscombe 1963:87). Without my practical knowledge, whatever is performed by me cannot be intentional. “Practical knowledge is ‘the cause of what it understands’, unlike ‘speculative’ knowledge, which ‘is derived from the objects known’” (Anscombe 1963:87). Practical knowledge justifies an actor’s answer to someone’s question—“Why?”—and, thus verifies the action as an intentional one. Interpreting Anscombe, philosopher Richard Moran explained that, “What practical knowledge understands is an intentional action, and it would not be the action it is, or perhaps any action at all, if it were not known by the agent in this way” (Moran 2004:55).

It is because a person can *know why* bodily movements achieve an action, that a person does know *how* to do anything. Being able to do any action implies practically knowing how to move the body in such and such ways. But, as Moran noted, “The point is not that the knowledge embedded in my intention helps to *produce* the movements that lead to the [eating], but rather that those movements would not count as my [eating] (intentionally) unless my practical understanding conceived of them in those terms” (Moran 2004:47 [my substitutions]). In other words, the knowledge embedded in my intentional action—of , e.g. eating some food—*is not what causes me to move my body in such ways that would be*

observed as my eating.⁶ My action could not truly be “eating” without my practically understanding it by this description.

Practical Knowledge Effects

It may not just be cause of my practical knowledge that I find myself eating a tomato. But, it is because eating is an intentional action that I know about the effects of my ability. By reason of intention, if I eat a tomato then I know practically about this thing. Albeit—as Brillat-Savarin might add—for a personal state of “more or less awareness” while eating (Brillat-Savarin 1854b:19). Moran supports this by noting that, “unlike theoretical or speculative knowledge, practical knowledge will not be passive or receptive to the facts in question, but is rather a *state* of the person that plays a role in the constituting of such facts” (Moran 2004:47, emphasis added).

In his text “The Primacy of Perception”, phenomenologist Maurice Merleau-Ponty stated: “To perceive is to render oneself present to something through the body” (Merleau-Ponty 1964:42). A person becomes aware of a relationship to something via sensual perception. Perceptual experiences are made into our very bodies, and so is practical knowledge. Practical knowledge is constituted by a person’s understanding of sensual relationships with things, because one has seen, touched, tasted, heard, and/or smelled them. Consequently, intentional actions vary for the variety of sensual relationships that a person accesses in order to understand things. This is a simple fact given by the differing actions a person may know to be his/her intentional doings.

Responsibility in Actions

By a person’s sensual encounters with the world, perceptions are formed and the body “remembers” these to be used in action. Any action presumes response from a stimulus, and this is certainly the case for intentional ones. By acting via

⁶ *Causality* of the reasons for eating is not a necessary topic to explore in this thesis, and although it may be a philosophically relevant one it will not be within my scope of study.

perceptions, do we become responsible to sensual stimuli? I think so. We are responsible beings because we act to effect stimulation of our senses so that we may perceive the world in such a way that gives reason for continued doings. It is due to perceptual awareness that I think a person senses, more or less, responsibility as an eater (whose intentional action is made toward a “food” as a stimulating thing).

In my estimation, from gathering the philosophies previously referenced, a person’s practical knowledge is based in a perceptual experience. Practical knowledge validates truths-as-told, more so than theoretical or speculative knowledge, because it is enacted learning. It is a means for testing theoretical or speculative knowledge that something is. It is gained through a person’s multitude of intentional actions. A person’s intentional actions presume not only knowing *possible ways how* to affect something; also, knowing *why for a way* causes an object to be perceived as it is.

Given that eating is an intentional action, it must be that I would have a reasonable answer to someone’s question of “Why?” I am doing the eating. There may be multiple reasons why for we eat, but for this thesis study I argue that a person does eating primarily for the intention to “taste” a “food”. Tasting is necessary in order to know a good food-thing for eating. This assertion is based on Anscombe’s terms: *practical knowledge is the cause of what it understands*. Because of my practical knowledge of some object, I authentically ascribe its value. Moran’s words are useful to further explain this point.

An object of speculative knowledge, on the other hand, is independent, both formally and materially of being known. No particular person stands in a relation to these facts such that they would not be the facts they are if they were not known by that person in a particular way. Because of this, a failure of some claim to speculative knowledge does not make any difference to the character of the object of that claim. Its being known in certain terms was not part of its character as a possible object of speculative knowledge, and hence when such a claim fails, the

object in question remains intact, as it were, with all its properties, and stands ready to receive another more guarded attempt at successful claim to knowledge. (Moran 2004:67)

A tomato may become a known object from the urban eater's environment for variously sensing it. But it's for taste that the thing is positively perceived as a "food": good for eating. And it is **only** by the authority of the practical knowledge preceding the intention to eat a "tomato"—the choice of a known "food"—that a *good* tomato is perceived. It is only such a kind of thing because of a person's experience *tasting* it. It is **not** the case that another person observes me eating a tomato, and by his/her speculation, does the tomato become a good one. It is just because we intend to eat a good food thing that taste enables our evaluation for such a thing.

A person who intends to grow a tomato knows what a good such "food" thing it is. It's not any edible thing, it's a tomato! Such a person is also granted authority in an evaluation of good, "tomato" taste by right of intention if, and only if, the intention had been to grow plants that produce tomato fruits of good taste quality. (Really, does anyone grow tomatoes to achieve a bad-tasting tomato?)

It is logical that a shift between the knowledge types indicates loss of the intentional action of food plant growing as the source for practically knowing such. In a Type 4 case, for example—whereby a person has *no knowledge* of tomato plant growing—no intention has been enacted that does achieve practical knowledge of a tomato's resulting from a certain ecological process. And so, the Type 4 person's perception of the "good" tomato to eat must be affected in relation to this.

Accounting for "Taste"

I believe that natural, qualitative differences of kinds of food are perceptible by our tasting them. I also believe that a truly good food will be tasted as such. It may be that all urban eaters are capable of perceiving difference between kinds of

food, but is it possible that some of the food kinds we intend to eat actually taste bad? Could a food that was grown without justification for its negatively affecting an ecological process also cause a negative taste perception? People don't usually intend to eat a food that tastes bad. And yet, if it is for a taste preference that we are motivated to choose a specific kind of food, then I challenge the proverbial defense for such choices—*There's no accounting for tastes*—and proceed with an account of taste. With better understanding the phenomenon, we advance conclusion to the thesis.

CHAPTER 3: THEORETICAL “TASTE” AND “TOMATO”

The general goal of this project is to report a phenomenology that works synergistically with an emerging research body of taste. From exploring that field, a theoretical assessment of the research topics is presented in this chapter.

NATURAL TASTE

My account defines static and dynamic factors of the phenomena “taste” and “tomato”. The more predictable aspects are presented in the following section.

Anatomy for Taste

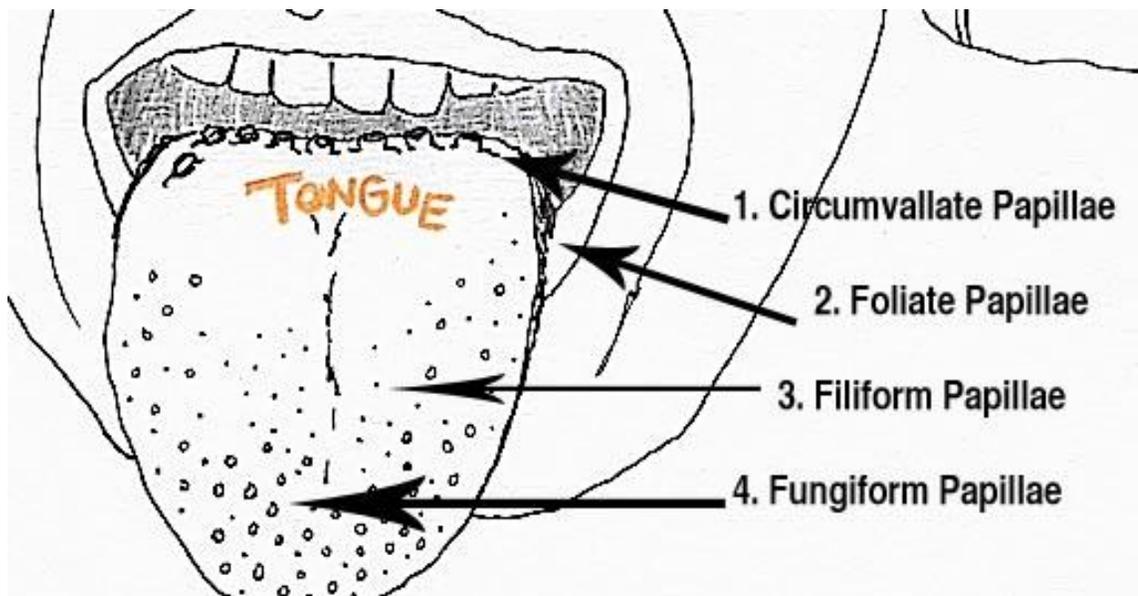
The tongue is the body part commonly thought of when we consider the sense of taste. It is, perhaps, the chief worker of the food-things we take into our mouths. How does it work for a person to taste a food? In his early estimation on the physiology of taste, French gastronome Brillat-Savarin figured that the tongue’s prominence in the sensation is due to its muscularity and “by means of the more or less numerous pores and feelers which cover it”, which enable our appreciation of food by a process of chemical dissolution (Brillat-Savarin 1854a).

It may be simple to think that the structure of the tongue is special for taste, but by further investigation we can understand how it factors for the sensation. Brillat-Savarin correctly speculated the importance of the tongue’s “pores and feelers” early on, for taste sensation, and scientists have since viewed these “taste buds” on a microscopic level. Scientists have named the bumpy-looking structures on a tongue’s surface “papilla” and distinguish four types: *filiform*, *fungiform*, *foliate*, and *circumvallate* (Bartoshuk and Duffy 1998:26). (See papillae illustration in **Figure 2**.) The philosopher of food and taste, Carolyn Korsmeyer, provided a well-noted account of the scientific findings. It is useful to excerpt for giving the reader a succinct notion of how the tongue works for taste. Korsmeyer wrote:

Taste buds reside singly at the center of the fungiform papillae, in multiples in the walls of foliate and circumvallate papillae and in the valleys between them; filiform papillae contain no taste buds in mammals. (...)

Taste buds themselves are clusters of between 50 and 150 taste receptor cells. Molecules of dissolved substances—“tastants”—enter the taste pore [opening] and interact with microvilli, stringy projections from interior taste cells that surround the pore. In the microvilli, chemical reactions between the tastants and receptor molecules in the taste cells cause reactions that produce further chemicals, which act as neurotransmitters and stimulate neurons that extend into the taste bud. The neurotransmitters convey information along one of several cranial nerves to the brain, and then the taste sensation itself occurs to consciousness. (Korsmeyer 1999:73-4 after McLaughlin and Margolskee 1994:541)

Figure 1. Areas of a human tongue’s four papilla types illustrated



It is a fact by simple observation that we each have differently endowed tongue anatomy and that tongue papillae vary in number per person. In his pondering taste, Brillat-Savarin pointed this out as important for the different experiences amongst people of a food’s taste. Scientists have studied this variable to isolate a part of our physiology for taste.

Personal genetics and aging

Researchers of tongue anatomy have indicated how genetic variation amongst people causes them to taste a food differently. Genetic affect on sensation was proven by studies correlating ability to taste some specific chemicals with gender, race and number of papillae (Bartoshuk and Duffy 1998, BBC NEWS 2003). Certain sweeteners and a variety of bitter substances are strongly perceived by a quarter of the US population, and these “supertasters” have high papillae counts (Bartoshuk and Duffy 1998, BBC NEWS 2003). Leading scientist of this research for taste, Linda Bartoshuk, states that supertasters perceive all tastes as more intense than do another 25% of the population who were found to have the fewest number of papillae and insensitivity to taste certain food chemicals (BBC NEWS 2003). Additionally, individual sensitivities and intolerances—such as allergies—to food kinds are likely caused by genetics, and naturally, would prevent any such foods from tasting good, per se (Korsmeyer 1999:89). Bartoshuk reports that taste receptor cells are continually replaced (Bartoshuk and Duffy 1998:26). And so as age affects a person’s physiology, so changing must a person’s taste be.

Individual distinctions of taste may be for a person’s genetically determined anatomical features, but genetics may also contribute to the universality of a taste. Experiments with infants in the US have lead researchers to think that “there is a built-in human liking for sweet tastes” (Mintz 1985:110). This conclusion is based on the original report, which found:

It is clear that the human newborn has a functional taste system that is responsive to both the qualitative and quantitative differences in chemical stimuli. Furthermore, preferences for sugars appeared before experiential factors were likely to be of consequence in the development of an appetite for sweets. (Desor et al. 1973:4)

Chemistry for Food

That there may be a species-wide *taste preference* for sweetness can be further argued with the more recent research on taste. “The sense of taste detects specific substances important to nutrition: sodium, sugar, and bitter poisons. The affect these substances evoke is essentially hard-wired and thus universal across species and across individuals within a species (...)” (Bartoshuk and Duffy 1998:30). Some foods must be constitutive of certain substances universally perceived as tasting “good”. A food object’s natural value can be sensed because we do taste it as more or less nutritious. The alchemy in food plant growth—for example: soil, water, air, plant variety—may be unpredictable and yet essential to a food’s taste to the extent that it is a nutritious thing. The general consensus among eaters may be that tomato fruits are a preferably good food when sweet to taste. However, it is obvious that eating any food, and certainly a tomato, is a multi-sensual experience. Therefore, perception of a preferably good food must involve more to “taste” its nutritious-ness.

A food could not be sensed as *flavor*-full if not for a person’s detecting the odors of some thing potentially good to eat. Bartoshuk and Duffy describe the physiological process of a person’s tasting a food flavor as follows:

Odorants are pulled into the nasal cavity by sniffing (orthonasal olfaction). The air carrying the odorants passes over the turbinate bones and becomes turbulent, which permits a small sample to reach the olfactory mucosa. Odorants can also reach the mucosa from the mouth (retronasal olfaction). Chewing releases odorants from food, and mouth movements and swallowing pump them behind the palate and up into the nasal cavity. These retronasal olfactory sensations combine with sweet, salty, sour and bitter to produce a flavor. (Bartoshuk and Duffy 1998:27)

Nasal-smell and oral-taste combine in order for our appreciation of food flavors. Something may be a preferably good food not only for the fact that it is a sugar-laden thing but because its sweet flavor is appreciable.

The simple physiological need for nourishment is arguably another factor of the taste phenomenon. According to scientists:

We cannot identify nutrients by smell, but certain nutrients can be identified by taste. Sodium salts taste salty, sugars taste sweet, and poisons taste bitter. Olfaction is not tuned to nutrients but, rather, serves to label objects. Positive experiences (e.g. calories, sweet taste, mood elevation, and social reward) paired with an odor make the odor liked (...). (Bartoshuk and Duffy 1998:30)

If a body's demand for particular nutrients arises in a feeling of hunger, then how one perceives taste of a food eaten in response to this must be affected. And so, a thing does taste good at all because it is constituted by—lesser or greater quality and quantity of—certain nutrient substances. A taste *preference*, however, is affected by positive or negative smell experiences associated with the recognized food object. Considering this, tomatoes may not be preferably good foods because they taste sweet but likely for a more complexly rewarding flavor, or tomato-ness.

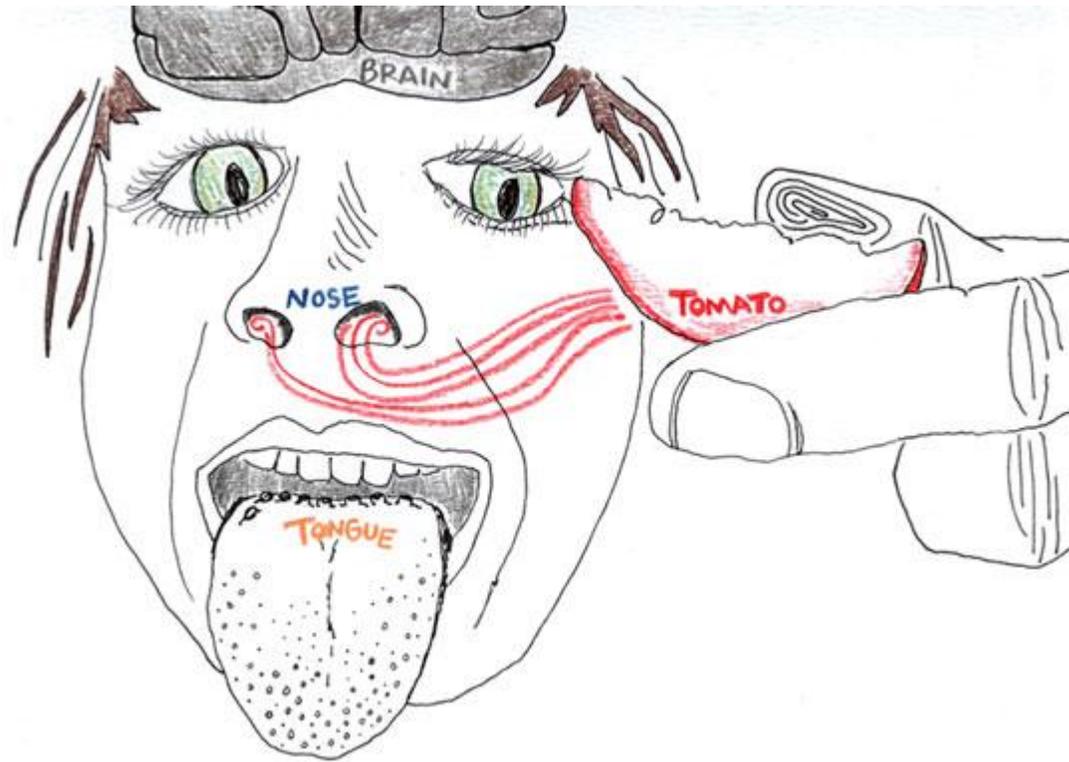
Korsmeyer also acknowledged the simple representational value of *sweet*, *salty*, *bitter*, and *sour* for food. She noted that these are “categories of taste *types*”, which serve as linguistic reference points for describing taste sensations (Korsmeyer 1999:77). And, despite attempts to incorporate additional words into the lexicon of food and drink tastes, these are the four that are most widely accepted. Using these words to describe a taste sensation does not indicate that they are perceptible to limited areas of the tongue either, as some tongue diagrams once illustrated the theory. Current research findings state that “All four taste qualities are perceived on all tongue loci where there are taste buds” (Bartoshuk and Duffy 2007:27). A food taste is perceptible because one's taste buds are engaged in coordination with retronasal olfaction. Arguably, a person cannot practically know a food's taste without some degree of awareness in eating. When the stuff-in-my-mouth is chewed and moved around by the tongue and a maximal quantity of taste buds register quality of nutrients, this combines

with additional appreciable sensory stimulation (e.g. olfaction, mouth feel) and I become aware of the taste. Thus it seems an eating experience is evaluable in a process of taste.

Food objects stimulate multiple senses by their various natural qualities. A food's odorous compounds, however, precede the possibility for a person's perception of a good taste. In another researcher's account of food taste, the importance of olfaction is stated this way: "Taste buds offer a relatively limited means of detection, however, compared to the human olfactory system, which can perceive thousands of different chemical aroma" (Schlosser 2001:123). Eating a food object, a person associates a smell with the various tasted chemical nutrients. A tomato is a "good" "food" to certain extent: that it is a recognized more or less nutrient-rich object to eat. Choosing a certain food to eat implies a practically *known* association of positively experienced smells and a food's flavor. Thus reasoned, taste is a knowledgeable ability—variously stimulated, or "informed"—and not simply sweet-salty-bitter-sour sensation of the tongue.

Brillat-Savarin concluded that "*taste and smell form but one sense*, of which the mouth is the laboratory and the nose the chimney; or to speak more exactly, that one sense serves to taste tactile substances, and the other to apprehend their vapors" (Brillat-Savarin 1854b:19, emphasis added). With understanding how taste happens by a process, it is imaginable that taste-touch-smell combine wholly as the sensual *wholfactory* enabling perception of a food object. (See my illustration of this as **Figure 3**.) Then if a food experiment happened between an eater's oral laboratory and nasal chimney, I extend Brillat-Savarin's analogy to point out a scientist character behind the full operation of taste: the brain! The claim that taste is a knowledgeable ability is supported further with the neurological findings explained in the following thesis sections.

Figure 2. A sensual *wholfactory* may enable my tomato tasting.



Neurology for Taste

Specific anatomical features equipping us for taste experiences have been reported here. Researchers of the microscopic have proven furthermore, that taste sensation is quickly apprehended from the mouth and nose by nerves, which carry taste information to the brain (Bartoshuk and Duffy 1998:26). And so, by a seemingly automatic response to a variously stimulating food experience, do we cognate taste. The following thesis section presents neurological findings in order to illuminate how an eater is knowledgeable—and may be motivated to choose a food—by taste.

Neurons are the basic cells of brains, and “[these] are connected in circuits and communicate with one another to create feelings, store information, and control behavior” (Kessler 2009:35). Substances in our mouth inform our neurons by way of four cranial nerves (Bartoshuk and Duffy 1998:26). This

neurological activity allows for “communication” between the physiological features of a person and food things. Dr. David Kessler explains:

When we first put a [potentially rewarding] food into our mouths, taste buds in the tongue respond by sending a signal to an area of the lower brain responsible for controlling many of our involuntary activities, such as breathing and digestion.

When the lower brain receives that signal, it activates the neural circuitry that contains natural opioid molecules. (...)

From the lower brain, the sensory experience of taste travels through the midbrain, reaching regions where the sensory signals of food are integrated. (Kessler 2009:37)

Prompted by a stimulus, a neuron fires an electric signal and releases a chemical that travels to communicate with other neurons in a circuit. When we eat, we trigger the firing of different neurons due in large part to a variety of stimuli constituting food objects. Some neurons of the brain are *encoded* to respond to a particular stimulus, and this may be a single sensory characteristic such as taste, texture, sight or smell (Kessler 2009:35). More specifically, the neuron may be responsive to the sweet, salty, etc. type of food flavor. Dr. Kessler’s findings point out that when we eat a food that is perceived as positively “rewarding” we are stimulating various neurons simultaneously (Kessler 2009:35). And therefore eating a tomato triggers specific neurons for e.g. its sugar content, its range of texture (gooey-ness or mealy flesh), and/or its visual color.

Dr. Kessler’s account specifies that endorphin, also known as an “opioid”, causes a pleasurable taste experience and dopamine impels us toward food (Kessler 2009:37). Differentiating the functions of these brain chemicals—*wanting* a food (dopamine activated) and *liking* a food (opioid effect)—is important for investigating what motivates a food choice.

By strengthening (...) anticipation, dopamine gets us to engage in a complex set of pursuit-and-acquisition behaviors

so we can recapture the remembered pleasure of a favored food. Dopamine drives desire through a survival-based capacity known as ‘attentional bias’. Defined as ‘the exaggerated amount of attention that is paid to highly rewarding stimuli at the expense of other (neutral) stimuli’, attentional bias allows us to pick out *what matters most* so we can pursue it. The more rewarding the food, the greater the attention we direct toward it and the more vigorously we pursue it. (Kessler 2009:41, emphasis added)

The pertinent thesis question following Kessler’s information is: *What matters most*, amongst things people may choose to eat in urban places, for a certain food kind to be perceived as rewarding? For “taste”, it seems plausible that a variety of stimuli experienced may evoke *reward* in different areas of the brain. The data of neurological research supports the possibility that an urban eater’s attention may be variously stimulated, and furthermore, that a “food” *matters* insofar as a person perceives a rewarding experience of associable stimuli.

This chapter section has pointed out multiple factors for taste sensation: tongue anatomy, olfaction, the chemistry of a food-object, and physiology of a brain. The laboratory conditions that determine these components predictably, however, take taste sensation out of context. This may be objective science, but arguably unusual as taste is normally perceived. Beyond researching taste in a narrow way—by testing its components in isolation—this project tests taste as it seems to happen through a person’s pronounced food judgment. Roland Barthe noted that the very quality of a taste is controlled by its *sequential* operation, which is ultimately the known whole, since “taste is that very meaning which knows and practices certain multiple and successive operations (...)” (Barthes 1989:250). This is the full development of an eater’s judging some object to be the good-thing-to-eat. Just as it is not a simple sensation, neither is taste constituted by an instantaneous pronouncement, or judgment, about a food. It seems an eater *can* taste food only by experiencing the full sequence of factors. To justify asserting

that we are responsible as eaters for food choices potentially perceived bad, additional factors of the taste phenomenon must be explored.

CULTURAL TASTE

In its fullest, taste may be best understood as a phenomenal happening that binds subjective and objective. For the intentional act of eating, “food” is an object perceived by a human subject, and “taste” is the full sequence whereby we evaluate this experience to be true. This is achieved both explicitly and implicitly as taste happens. A food object is explicit by taste because it is nutritiously replete. But taste happens not simply for the fact of food matter. The words of French phenomenologist Maurice Merleau-Ponty are useful for explaining why this is so.

The things of the world are not simply neutral *objects* which stand before us for our contemplation. Each one of them symbolizes or recalls a particular way of behaving, provoking in us reactions which are either favourable or unfavourable. This is why people’s tastes, character, and the attitude they adopt to the world and to particular things can be deciphered from the objects with which they choose to surround themselves, their preferences (...). (Maurice Merleau-Ponty 2004:63)

In addition to being more or less nutritious, certain objects are taste able because they are socially and culturally meaning-full things. Because it is eaten, an object implicitly means “food” for the eater. *However all nutritious objects may be good-to-eat, not all “food” is good-to-taste because social and cultural contexts vary for eaters.* Interpreting a variable socio-cultural meaning may affect how a person perceives the food-object’s very taste. For the intention to know any food object—to understand the meaning—a person eats to taste it. Preference for eating some-food-thing so meaningful reflects a person’s apprehension of such meaning by taste. In this way a food choice represents an eater’s knowledge by taste perception.

When an urban US resident chooses a “tomato” as the good thing to eat there is a taste preference cast by the person within an established socio-cultural system of food values. It is now common that this person is choosing from amongst the things that have already been identified as good-to-eat things. Taste able objects symbolize social and cultural food values.⁷ Three symbol types are presented in the following sections: representation, exemplification, and metaphorical exemplification. Explaining these, for the reader, indicates that common foods can symbolize in complex, meaningful ways. This suggests how “taste” is a complex ability for perceiving such meaning.

Representation

It seems quite usual that food is imbued with social and cultural meaning: we make many foods into symbols. I can quickly name the following examples from my American context: corkscrew pasta, chocolate Easter rabbits, goldfish crackers, gingerbread men, flowers carved of radishes or shaped from carrot peels, “ants on a log”, cotton candy, and submarine sandwiches.

Exemplification

Foods function as cultural mediums for communicating a certain opinion about what is valuable in our world. Food is useful as a message carrier when it is made to show value by representing something. It is thus made meaningful, and also implies a cultural value for the food itself as the *right* medium to use for conveying the message. If food choices have significant moral relevance, we must consider how they exemplify meaning. According to Korsmeyer, “(...)an object both possesses a property and refers to it.(...)That is, it refers and calls attention to some of the properties of what is eaten, presenting them for special notice and assessment or enjoyment through direct experience” (Korsmeyer

⁷ In defining “food” symbolically, “taste” conceptually bridges the intellectual and the sensuous into aesthetics. Though an inspiring topic, this thesis does not explore food as tasted objects of art. This point is simply noted to underscore that meaning apprehension of the food object is cognitional.

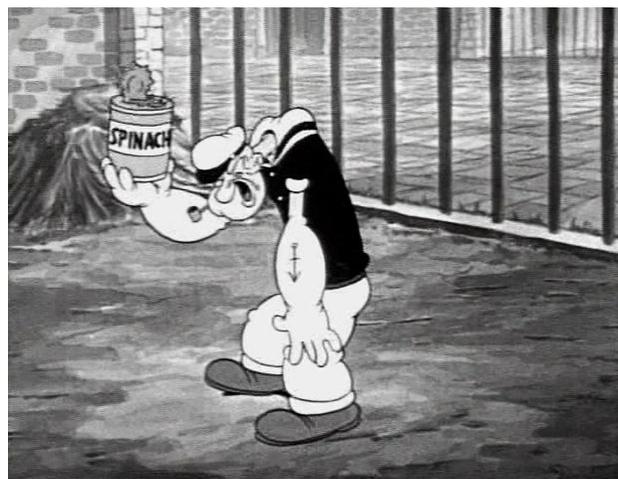
1999:128). To appreciate an exemplified quality of a food, we engage in savoring it. I think most eaters have experienced a particularly savourous food, and while ability to appreciate may vary amongst eaters this does not change the quality of a food that is exemplified.

Furthermore, “food exemplifies a multitude of complex sensory relationships of different tastes, smells, and textures, [therefore] any meal(...)also possesses what Goodman terms relative repleteness—that condition in which ‘comparatively many aspects of a symbol are significant’” (Korsmeyer 1999:129 after Goodman 1978:68). Nelson Goodman wrote this for the purpose of defining symptoms of the aesthetic. Korsmeyer worked to explain food from an aesthetic context. *Relative repleteness* is the matter of food as a human-cultural fact. An object that is understood as a food is such by virtue of its common-human-culturally perceived characteristics. To know that there is a food object there before me, I perceive—with lesser or greater awareness—a complex sensory relationship of qualities. Merleau-Ponty wrote that “The unity of the object does not lie behind its qualities, but is affirmed by each one of them: each of its qualities is the whole” (Maurice Merleau-Ponty 2004:62). And so, for example, any given tomato is only known as such an object by virtue of its symbolizing each and all the qualities of tomato-ness. It is not for seeing some thing red that a person perceives a tomato. The object is relatively replete with the tomato-meaning qualities; the object exemplifies the socio-cultural definition of “tomato”. This assertion is supported by referring to the neurology previously accounted for taste. In an act of eating, differently encoded neurons are triggered simultaneously because of the various qualities, replete, of the food. And so an eater perceives all the nutritious and socio-cultural properties of the food object in order to know its taste value.

Metaphoric Exemplification

An analysis of taste becomes more complex when considering food as a cultural symbol of *metaphorical exemplification*, whereby a food expresses an imbued metaphor. Properties of the food come to mean, metaphorically. Korsmeyer explains that “There are numerous cases in which expressive properties attach to foods because of the particular context of a story, but there are also more ordinary cases in which foods come to express certain properties because of the traditional or routine circumstances of their preparation” (Korsmeyer 1999:132). By remembering a story/event/experience that features a food, the food proves itself to have lasting value for expressing the property recalled. Examples of this type

of food symbol demonstrate the significance of particular socio-cultural contexts for imbuing meaning. First, I recall “Popeye the Sailor Man” who gave special meaning to spinach in America. Popeye is the animated character who gained superior strength and powers by eating spinach. In the



cartoon episodes, he squeezed a steel can and it effortlessly popped with a forceful eruption of a spinach fountain that he guzzled for prompt restoration of his superior sensibilities. Often Popeye ate the spinach when he was preparing to contend with wrong-doers. (**Figure 3** here shows an illustration of Popeye’s strength-by-spinach [Popeye 1936].) Due to the popular success of Popeye’s comic character, spinach has definitely had a cultural meaning implied. I bet that any American kid who grew up with Popeye’s influence recognizes spinach as a food object that expresses “power” and “strength”. These properties may not be expressed by spinach to cultures not conditioned to think to eat spinach for

inducing great physical strength by its nutritional properties.⁸ A food can, indeed, be culturally symbolic. Thanks to Popeye, spinach implies an expressive property; it metaphorically means strength and super-Popeye-power.

The second example of a food I consider implicit with metaphoric meaning is a marshmallow. Its cultural meaning derives from shared memories of certain eating experiences and traditional marshmallow use. As a food, it seems quite artificial. However, in my mind—and I suspect in the minds of others—it is associated with an experience of being in a natural, outdoor environment. Mentioning the word “marshmallow” easily brings to mind memories of campfires, and trees, and enjoying the experience of being in nature. Spitted on whittled wood sticks, we roast marshmallows over crackling, burning campfires, surrounded by forest and a positive experience of nature. That the marshmallow’s original nutritional make-up was limited to refined sugar, spun egg white, and gelatin protein—naturally derived ingredients—doesn’t lend a natural-ness to the food. (In fact, it tastes artificially *supersweet*.) And yet, I think, eating a marshmallow somehow implies an experience of nature. If I’ve applied metaphorical exemplification similarly as Goodman and Korsmeyer, it is quite a complex way we communicate. With food objects as symbols, we express metaphoric, culturally specific, meaning.

The circumstances of an event where food is featured provide a context for personal taste discoveries. Therefore—in the marshmallow example—any food that may accompany a time spent in a nature—i.e. sitting near a campfire—may be imbued with meaning natural. In other words, the circumstances of the

⁸ It is speculated reason that, choosing spinach as the food object to metaphorically express Popeye’s “power”, was due to a German nutrition scientist reporting it ten times higher in iron than other leafy green vegetables. 70 years later, scientists realized that the number was only due to a misplaced decimal point! And, updated testing proved spinach to be average amongst leafy green vegetables in iron quantities. More information about this discovery and sources can be read online: *Spinach is high in Iron: False* (updated February 2008) http://www.de-fact-o.com/fact_read.php?id=2. The recent discovery that opioid peptides have been found in spinach is noted in the afore-referenced article. This is interesting with potential relevance to my thesis, which includes research on the effects that certain foods have on our brain chemistry. If spinach has opioids...then it’s no wonder why Popeye was hot for the stuff!

campfire make the foods featured there mean “nature”. It is not the constitutive qualities perceived of the food-thing that can be accounted for such a meaning. So, using the marshmallow example, it is not for a person’s tasting sweetness in eating a marshmallow-thing that this food may mean nature. *All* the qualities of the marshmallow thing that was eaten by the person in the nature context (sitting near the campfire) are necessarily perceived in order for it to be the meaningful food object in the natural context. The contextual circumstances surrounding a person’s eating a food object shape its symbolic meaning. Therefore, a person’s taste perception is related to environmental context during the act of eating some food-thing. These assertions also emphasize the point that discovering a food meaning by taste is personally individual. Whereby, as Korsmeyer explains, “The power of the [meaning intended implicitly in the food] can be delivered *only* through this ‘subjective’ route: apprehending with one’s whole being—mind and body—what before was recognized only intellectually” (Korsmeyer 1999:134). A food’s implicit meaning can only be understood by the person who has perceived its value within a certain context. And so, she who has not experienced eating a marshmallow while sitting next to a campfire in a natural environment may simply value it as a sweet-food-thing. She cannot know marshmallow as the campfire-in-nature food without having eaten the thing in such a context. There is an inherent relationship between a person’s experience of a food’s taste and an environmental context, and this claim is further justified in the following section.

ENVIRON-Mental TASTE

Because substances *are* taste-able, we know nutrient laden objects as the food things of our environment. It’s been proven that sugar substances are perceptibly sweet and sodium things taste salty (Bartoshuk and Duffy 1998:30). This occurs because the brain chemical dopamine compels us for such things registering as nutritiously good in tastes. Given Kessler’s conclusion that “the most effective rewards are those that can change our feelings,” we may like foods simply

because they are the kind of things that directly stimulate the neurons of our brain's opioid circuitry (Kessler 2009:138). Kessler explained that, "Alone among the senses, taste is hardwired to brain cells that respond to pleasure. It prompts the strongest emotional response." (Kessler 2009:36) Relative to how strong the emotional response stimulated by a certain food, it is a more or less rewarding kind of food thing. Kessler stated that, "Rewarding foods tend to be reinforcing, meaning that they keep us coming back for more" (Kessler 2009:29). Choosing a certain kind of food admits a more rewarding experience, in other words a taste preference.

Thus far in the project's hypothetical account, "taste" is a multi-factored phenomenon. The question at this point in the report is: *which* factor of *taste* suffices a rewarding food to compel an eater's action for its kind? The tasteable substances of a food have been proven to evoke pleasure during an eating experience, and from his study, Kessler concluded that sugar and salt are strongly reinforcing food substances. However, these can only be rewarding as they are appreciated by the taste buds. Food objects stimulate variously encoded neurons simultaneously to evoke positive reward because they are "taste"-full environmental objects. That is, they are relatively replete of nutritional substance and socio-cultural meaning. Given the examples in the previous thesis section, the emotional force of food is also from valences of social and cultural meanings.

Food Cues

The examples in the previous section of foods used to symbolize social and cultural meaning illuminate how context is significant for a taste perception. The degree of positive reward perceived of a certain food must be relative to awareness of other stimulating environmental aspects. Kessler's findings are useful to justify and elaborate this claim. "Along with taste and other sensory characteristics, the location where the food has previously been available and the events associated with past consumption can also become reinforcers. In time,

these *cues become as important in food-seeking behavior as the food itself*' (Kessler 2009:33-34, emphasis added). The reinforcing substances of food that Kessler identified—i.e. sugar, salt, fat—are amplified in motivational power because we associate environmental *cues* to the evaluated food objects.

Multiple aspects of a food are *necessarily* perceived for the action of choosing a specific kind. Choosing a specific kind of food amongst other food stimuli not only indicates a simple understanding of the socio-culturally identified “food” object. Considering that we urban eaters go to places, such as grocery stores, which we know to have “food” available, this becomes obviously true. What then stimulates an urban eater’s attentional bias toward a certain food as a thing of a certain food context? Further using Kessler’s assessment, it seems that two underlying principles are necessary to investigate that which motivates our choosing a kind of food. First is that “cue-induced behavior is automatic behavior. [Since] once the association between food cues and emotional reward has become embedded in the brain, highly rewarding food steals our attention.” (Kessler 2009:200). And second, “our perception of a food stimulus directly influences our behavior in response to it” (Kessler 2009:200).

Different Food Choices: habitual and goal-driven behaviors

Kessler described that eating “(...) habits develop when familiar stimuli activate well-established neural pathways that produce repetitive behavior. The same cues prompt us the same way” (Kessler 2009:61). Thus, if I am habituated to eating a tomato with my everyday lunch sandwich, then it may be the case that I choose a tomato—in the process of getting food at a grocery store, for example—because the tomato display in the produce department cues a behavioral script for the familiar food. “Habits permit living creatures—both those with highly developed brains and those with less-developed brains—to act quickly in response to routine events. This can be convenient, allowing us to do something without the need to pay close attention (...) but that convenience comes at a price.

The brain architecture making it possible allows us to act without awareness, not fully in control of our actions” (Kessler 2009:62). Kessler offered one simple, but important point: we spare cognitive energy by lessening awareness in habitual behaviors. Practical knowledge is implicit in the habitual system. And so, eating may seem automatic because I *practically know* how to do it by habituation to certain recognized “food” objects.

Eating is a reinforced behavior because we experience food as a rewarding environmental stimulus. *Learning* associative cues of a certain, rewarding food object amplifies its force as the choice amongst other food kinds. Because substances are memorable, we can know a preferably good food in advance of eating it. As Kessler wrote, “A history of personal experience gives *particular* foods an emotional charge, and those emotions become lodged in our memory” (Kessler 2009:55, emphasis added). The various life experiences a person has of “tomato”, for example, cause it to be a remembered good kind of food. Based on Bartoshuk and Duffy’s research, tomato flavor is experienced good to taste in a phenomenal experience inclusive of prior “tomato” rewards. Since, in the eating experience, tomato odor is associated to the tasted nutrient substances of the tomato-thing for imparting a sense of tomato flavor.

When contextual cues prompt memories associated to a “tomato” as the rewarding food-thing, and dopamine-driven “food” desire motivates behavior to choose it as the kind of food—which matters most—amongst other, a tomato is a habituated taste preference. Conversely, a “specific set of motivational neural circuits” are involved in “goal-directed behavior” when, for example, I go to a grocery store or a Farmers’ Market intentionally for a tomato (Kessler 2009:62). My action is directed toward the goal of obtaining a certain food kind, and thus consciously reward driven. So, there seem to be two cases here with different implications for tomato choice. For one, an urban eater invokes practical knowledge in the goal-directed behavior of obtaining a tomato because she/he is aware of desiring that certain kind of food. For the other, the urban eater invokes

practical knowledge toward the intention of food (of variously defined sorts). Goal-directed behavior may get a person to a place known to have “food”, and tomatoes may be amongst the sorts available.

When a person is driven by the desire for eating a “tomato”, the behavior to obtain it will be goal-driven. When a person is driven by the desire for eating any “food”, the behavior leading to obtaining a tomato is part of a process that may be goal-directed or cue-induced. In this second case, the tomato, as a kind of food, may be consciously desired or not. Moreover, if different kinds of tomatoes are available it may be that a person perceives distinction in order to choose the preferably good kind, but it is not necessary. At this point in the goal-driven behavior for getting “food” in general, a person may or may not be stimulated by differently cueing “tomato” ascriptions. For a preference of one kind, however, I argue there is a type of knowledge invoked for an urban eater to apprehend distinction of the tomatoes. If, for example, a grocery store’s produce department presents differently labeled tomato kinds, the constitutive value of one kind may be determined by how a person understands the meaning of the tomato labels. In such a situation one kind of tomato is preferably good by virtue of its marketed identification. Could a food’s label affect how a person perceives the food’s taste? Kessler’s study of American eating behaviors found, “People say that foods with more descriptive names look better, taste better, and leave them feeling more satisfied” (Kessler 2009:127).

Furthermore, do food labels, which signify specific socio-cultural food values, cue our attention to the extent that we know to choose one food kind over another? The contributing research indicates that we are not all drawn to the same foods because our taste preferences are strongly influenced by our unique histories of social and cultural contexts. Korsmeyer’s analysis of taste concluded that, “The cultural factors that frame food preferences seem by far the greater influence on eating habits. Tastes for particular foods are to a large degree inculcated by culture and learned by experience, as well as chosen according to

individual predilection” (Korsmeyer 1999:89). Because it seems a primary factor of “taste” that we learn to identify good-things-to-eat by various types of contextual cues, this study continues by exploring whether certain food objects are more rewarding to the extent they are perceived socio-culturally meaningful.

Learning “Food” Labels

To reiterate the problematic warranting this study: the industrialization of US foods during recent history has lengthened and complicated the chain between rural farmer and urban eater. There is a dearth of information presented by “food” for an urban eater to understand this sophisticated food chain. It has been described by another author this way: “In the industrial food economy, virtually the only information that travels along the food chain linking producer and consumer is price”(Pollan 2006:136). This is evident when shopping for food at any given grocery store in St. Louis and browsing the produce department there. Such typical US groceries don’t provide an urban eater with more information than the given object itself signifies and a price labeling economic cost. A food price label represents a kind of “food” value. Thus, an urban eater might learn “tomato” value by no more information than its being price labeled. The most recent history of industrial agriculture has proven that this information is inadequate to represent the value of a grocery food that results from a rural-urban chain that is costlier by each link. A price label alone does not signify all costs of the links between rural farmer and urban eater. A price label alone is insufficient for an urban eater to learn the varied ecological effects of growing a food. Furthermore, a farm that **does** not begin with ecological accounting—say, for soil effected by spraying calcium chloride on tomato plants to manage blossom end rot—**can not** represent such by a grocery store “cost” of tomato. A grocery store tomato, labeled by price alone, does not inform an urban eater of where or how the tomato grew.

In this modern reality for urban eaters, a food can be *positively* identified—as a good thing to eat—for limited reasons. A “food” is learned simply for being grouped amongst other edible things in a certain food context. A “tomato” is one among many kinds of food an urban eater can *know* simply by repeated grocery store experiences whereby she/he learns to identify it by association. How then does an urban eater know to preferably value a tomato amongst other foods? What is it about a tomato that causes it to be perceived as better than other food choices available to an urban eater? A tomato could be a good food—be positively valued—to the extent that a grocery store shopper prefers it as a food-price relative to other available similarly priced foods. It is reasonable that a tomato is chosen as a valued, good food by another motivation. More likely, an urban shopper chooses a tomato kind of food because she/he has learned to know it is a preferably good-to-taste food.

In recent decades there has been action taken by both rural farmers and urban eaters to solve the problematic scale of the US food system. A growing number of urban US eaters demand more information about their foods. Some rural US farmers have tried to become more traceable in the food chain and more informative to the urban eaters. Increasing information between rural farmer and urban eater is influential to food choices. And, the increased popularity of one specifically defined kind of food verifies the claim. The following case indicates how a food choice may be motivated by the food shopper’s perception of its kind as a label. My argument here is not only that food labels cue perception of value—its goodness as a food—but also that such labels are variably understood. Perceptions vary in relation to types of *a priori* knowledgeable “food” experiences in which associable context cues are variably informing. A food label is one example, and explained in the following section, but my research project posits food plants themselves may also effectively cue perceptual reward.

“Organic” Food Kinds

The word “organic” has come to be very full of meaning for urban US eaters. Technically, any food that is defined as an “organic” kind is such for a legality. A food in US grocery markets that bears the label “organic” is legally certified to be grown or produced in accordance with specific agricultural methods (USDA 2010). Any Organic food has a greater probability to capture a grocery store shopper’s attention than a food not labeled as such a kind. This is reasonable for the fact that the Organic sector of the US food market garners an \$11 billion dollar share (Pollan 2006:136). Evident by the number of Organic food purchases, US eaters have positively valued this kind of food. The question following this point is not only why it is a good kind of food, but how it became the preferable one.

Michael Pollan, an investigative journalist, has researched Organic food extensively. In the following quote, Pollan suggests why an Organic tomato is a preferable tomato kind for many urban US eaters.

One of the key innovations of organic food was to allow some more information to pass along the food chain between the producer and the [urban eater]—an *implicit* snatch of narrative along with the number. A certified organic label tells a little story about how a particular food was produced, giving the [urban eater] a way to send a message back to the farmer that she values tomatoes produced without harmful pesticides(...). (Pollan 2006:136, emphasis added)

This explanation of Organic indicates a kind of food made socially and culturally meaningful. Could the word have come to simply mean good-food-ness?

It may be that an Organic tomato is a good “tomato” given that it is grown without a farm’s application of synthetic nitrogen fertilizers or other prohibited chemicals. However, this “organic tomato” could be perceived a better tomato kind simply by virtue of a law-abiding farmer (legitimizing the fruit’s “organic” label). In other words, if a person simply thinks all “organic” kinds are better without direct experience of—e.g. tasting or growing—both, an “organic tomato”

and a “tomato”, it could be a food preference based on assumed facts. The farmer can know for the fact that “organic” tomato kinds are better since she/he directly experienced how the certain tomato plant growing process—and, e.g. “not dousing them with pesticides”—effects different quality of fruits (Pollan 2001). Likewise, the urban eater can know for the fact that “organic” tomatoes are a better kind because she/he has directly experienced the taste of an Organic tomato and a non-organic kind and found flavor of the former more rewarding. But, someone who does not have practical knowledge of how an Organic tomato grows or tastes, can at most, *indirectly* understand that an “organic” tomato is a better “tomato” kind. How could an indirect type of knowledge be problematic in this case?

If Organic food is implicitly meaningful then a positive perception of this kind could be for presumed quality. An urban eater may be motivated for an “organic” food by perceiving goodness from the label’s meaning alone. It may be the case that the word implies the fact for urban eaters who do not directly know where and/or how the food was grown to really warrant such goodness in relation to specifically valuable agricultural methods. Pollan’s investigation revealed Organic food can also be a kind that is grown on an industrial scale emphasizing quantity—not necessarily quality—of food for urban eaters demands. His summation is apropos to my thesis:

[The] organic label itself—like every other such label in the supermarket—is really just an imperfect substitute for direct observation of how a food is produced, a concession to the reality that most people in an industrial society haven’t the time or the inclination to follow their food back to the farm, a farm which today is apt to be, on average, fifteen hundred miles away. So to bridge that space we rely on certifiers and label writers and, to considerable extent, our imagination of what the farms that are producing our food really look like. The organic label may conjure an image (...). (Pollan 2006:136)

That Organic kinds of food have become popular is because eaters perceive this label positively meaningful. Of course, there are varying types of knowledge

about Organic foods that may make the positive perception reasonable. But based on Pollan's theory, the main cause for why this certain kind of food does taste good is for an eater's *storied* understanding of "organic". In other words, because the eater has learned an implicit, positive socio-cultural meaning of this food kind and associates this to the Organic label, does she perceive it good-to-taste. Apt for this assertion are the words of Arthur Danto: "It is not required that we should be able to taste the difference for there to be a difference... [K]nowledge that it *is* different may in the end make a difference in the way something tastes" (Danto 1981:92).

("TASTE") = (Unchangeable) + (Changeable)

In this final section of Chapter 3 it is useful to review "practical knowledge" for reasoning why an urban eater's taste preference is ecologically problematic.

Richard Moran noted that Anscombe's philosophical development was an attempt to reconcile two common issues of agency. On one hand, he explained,

[The] agent's own conception of what he is doing is not just another description, side by side with all the others, but has some claim to determine what the action itself is. There is a privileged relation, though not incorrigible, between what the agent is doing and what he takes himself to be doing (Moran 2004:44).

And on the other hand, he wrote, it is a common issue "that one can simply fail to do what one means to do, or do something quite other than what one takes oneself to be doing" (Moran 2004:44).

Argued with Anscombe's terms, eating is an intentional action since someone making eating movements is normally able to acknowledge why she/he is doing such. My research is based on the argument that a person does "eat" to taste a thing as a food. A "food" becomes evaluable through a multi-factored perceptual process. "Taste" is done for knowledge *a priori* of the food taken to be eaten. A person eats a food with more or less awareness of the eating movements, and yet taste is certainly intentional for the food.

A taste evaluation may be described, alluding to Moran's postulate, as the *preferential privileged relationship* between eater and food, but as such, it is not incorrigible. On one hand, a person can claim to be eating a certain kind of food-thing just because it tastes. Due to **unchangeable** factors of taste previously explained—e.g. tongue anatomy, and a food's nutrients—an eater has a subjective, privileged relationship to the food-thing eaten, and this relationship grants her/him knowledge of the fact (that the food-thing does taste, e.g. good!). In other words, a taster has a unique privilege in a subjective eating act to assert an object's genuine "food" value. Thus does a person have a privileged relationship to prefer one kind of food—testimonial for the better to taste food amongst other good, edible things.

On the other hand, due to the **changeable** factors of the taste phenomenon—for example, that a tasteable food-thing is good by virtue of how it functions symbolically within a certain cultural society—an eater's perception of a food's good-ness could be from a taste failure. If it is wrong that one takes oneself to be eating the "right" food, it is for a lack of perceiving taste in full awareness. *Every human practically knows how to taste a food object, but not everyone does succeed because eating is an action by a process constitutive of more or less awareness of "food" as a meaningful object.*

Our food preferences are not incorrigible if "taste" happens, in part, for changeable factors. "Good" food is relative to the learnable factors of our ability to taste food objects.

This theoretical assessment of taste became grounded by the research project's fieldwork, which tested taste in practice. I have argued that a specific food learning correlates to a taste perception of the food. In the next chapter I explain the practical research investigating this theoretical relationship of *how* and *what* an eater has learned about a certain kind of food to *how* and *what* the eater perceives by taste.

CHAPTER 4: PRACTICAL TASTES OF TOMATOES

The methods of the Tomato Tasting Dialogues are justified by the proposals to reposition social science into a framework of practical philosophy. Thomas Schwandt, for example, explains “Social inquiry as a kind of practical philosophy is both descriptive and normative. It is not a form of inquiry *on* social action as much as it is inquiry *with* human actors” (Schwandt 1996:63). The TTDs were intended as a form of practical philosophy—to engage certain people in the phenomenological research of “taste” by their experiencing something tasted. The dialogues encouraged normative critique of food quality as participating St. Louisans characterized a good kind of tomato.

In order to explain how these tests of taste were conducted and collected, the following sections answer event questions—*Who, What, Where, When*—for the Tomato Tasting Dialogues. It is not meant formulaically—as the methods for further research, e.g. of how the taste phenomenon affects the food choices of urban eaters—but is written this way to thoroughly explain this project’s process. A verifiable (*id est* “objective”) scientific study is also accountable.

The TTDs: *Who?*

This project became a collectively informed phenomenology for the various individual people who participated. Urban eaters were purposefully sampled for variable control. St. Louisans were involved in the research project because they were and continue to be prominent social and cultural characters in my life-narrative. With commonalities amongst perspectives, analyzing their tomato-taste experiences was the way to verify or falsify the thesis claims.

The individuals were criterion sampled for a phenomenological study—they all experienced the phenomena of “taste” and two kinds of “tomato”. The sample group was thus homogenous—because all the individuals fulfilled the criteria of participating in the tests of the TTD sequences. The sample group became heterogeneous, first, as cast in the knowledge typology, and second, by

individual classification according to Bartoshuk's scale of *nontaster-taster-supertaster*. In total, seventeen St. Louisans comprised the Tomato Tasting Dialogues and contributed the data for practical research.

The TTDs: *What?*

If “You Are What You Eat”, I wondered what it is about a certain kind of food that I *know* is good for eating. As a result of, importantly, where I was born and lived for so long, I focused this study on tomatoes as “food” phenomena, and the varying perceptions of these. In a taste experience that brings one's awareness upon a specific food object, it becomes a culturally defined, eatable thing—hence meaningful. By focusing this research project on “tomato”, it became importantly valued amongst kinds of foods. The samples that were tested for taste were common varieties, in other words, the most typical tomato form (not, e.g. of the Roma variety, or cherry size). Their origins of growth ranged from St. Louis gardens and a small-scale Missouri farm, to a large-scale Illinois tomato farm and an undisclosed source.

I labeled the tomatoes that I sampled from St. Louis to indicate their proximity of growth to the taste test site. Because of the different effects of “local” tomato growing versus “non-local”, these words indicated ecological meaning. The Census figures of US tomato farming operations indicate that “very large farms” grow the majority of tomatoes available to urban eaters. These farms can not be characterized as *local* to the urban populations who eat the tomatoes grown there, due to the very land-use distribution distinguishing urban and rural. Such very large operations entail monocultures of tomato plants and often rely upon artificial chemical controls of the natural environment. These tomatoes, as a function of location and urban eater demand, will be grown for greatest quantity and feature tomato qualities of long-storability and long-distance transportability. This translates to harvesting tomatoes before they are fully ripened on the plant, and transporting those long distances between tomato farms

and urban groceries. Tomatoes that are grown more locally to the site of the tasting may be allowed to remain longer on the plant. This is because closer proximity to urban eaters enables more careful transport of fully ripened fruits, which are fragile and quickly perish. Additionally, it may not be necessary to rely upon toxins for environmental control if the quantity of tomatoes grown in one operation were less. Due to land allocation constraints, the closer in proximity the tomato growing happens to urban eaters, the smaller the farm operation must be, and the more directly understandable the ecological implications may become to the eaters.

Dividing them into two sorts and labeling them according to their locality suggested specifically meaningful reason to perceive qualitative difference between the tested tomato samples. In this way, perception of each tomato's taste could be the evaluation derived, in no small part, for a participant's learning such ascription of tomato kinds. The tomatoes could have been differently or additionally identified, and the effect of a socio-cultural variable to the tomato taste test would be just as important to recognize. For example, "organic" and "non-organic" are social distinctions of food kinds that could also have been assessed. Perhaps it is the distinction more easily associable for the purpose of a study that relates taste perception to ecological food choice. My reason for not choosing this came by thinking that such an identification, although proven to be a popular sector of the US food market sector, requires a more sophisticated knowledge of the legalities behind food growing. Because "organic" denotes a set of standardized, certifiable food production methods, it is a label word that represents more complex social meaning.⁹

⁹ For verification of the complex legality behind the "organic" food label, see the National Organic Program regulations updated June 3, 2010 [online.]-URL: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=7:3.1.1.9.31&idno=7#PartTop>

The TTDs: *Where?*

The Tomato Tasting Dialogues were conducted at four sites in two St. Louis County neighborhoods—Maplewood and Old North City St. Louis—in order to achieve diverse representation of urban eaters there. The locations were reasoned with the greatest probability of participants who could fulfill the knowledge typology proposed for the thesis.

A Farmers' Market was obvious as the urban place to substantiate the Type 1 knowledge category since tomato growers selling their produce were a likely one of possible research participants there. There are thirteen recognized "Missouri Farmers' Markets" in St. Louis County (MU 2009). Because Farmers' Markets are not located in all St. Louis neighborhoods and have limited days and hours of operation, not all urban eaters can or do obtain their food there. Thus it seems an intentional *choice* by many of the people who shop at such an urban grocery. This choice may be motivated by a person's knowledge that there are locally grown kinds of foods there. Given the name, it's reasonable that all Farmers' Market shoppers believe the foods available there are *farm-direct*. But I also know by personal experience that some shoppers there are seeking what they are already familiar with. Probably, additional knowledge typology categories would be filled by Tomato Tasting Dialogues participants at a Farmers' Market.

Two St. Louis County Farmers' Markets

Maplewood's demographics emphasize the fact that few St. Louisans work directly with food growing. Of Maplewood's 9,228 residents during the year 2000, there were 7 documented workers in "Agriculture, forestry, hunting and fishing, and mining" (USCBc). Because this category cites a variety of professions in addition to agriculture, it is a very small possibility that these seven people work directly with growing tomatoes. Investigating different types of knowledge of tomato growing amongst the Maplewood residents lead me to the Farmers' Market there first.

The Maplewood Farmers' Market is located in the parking lot for Schlafly Beer bottleworks and restaurant. Adjacent to the restaurant building is Schlafly's ½ acre kitchen garden where they grow vegetables and herbs for the restaurant (Schlafly 2010). According to Tom Flood, Schlafly's *Properties and Sustainability Manager*, by September 23rd the 2009 garden had contributed 2,600 pounds of produce for the restaurant (Flood interview:23.09.09). The situation of the Maplewood Farmers' Market in proximity to Schlafly's kitchen garden gives market-goers the opportunity for developing Type 2 knowledge of food plant growth. To wit, a possible scenario: a person without prior direct, practical knowledge of food plant growing could stroll by the Schlafly garden and *see* the tomatoes, vegetables and herbs growing there, and form understanding of the growth processes. This person is directly achieving a type of non-practical knowledge, in a process of perceptual stimulation from the garden as source of informative cues.

Located in the Old North neighborhood, the North City Farmers' Market is nearest to the St. Louis city center of the two chosen. It is apparent from differences between Maplewood and the Old North that inner-city decay happened to St. Louis. Census data, which recorded a 2.4% decrease in the St. Louis County population from 2000 to 2008, indicates such an urban process (USCBA, b). The commercial property features of the Old North neighborhood also stand to testify for this assessment of St. Louis. The single prospering food business there is the historic Crown Candy Kitchen. People travel to visit it for tasting the famous confections made there, as well as experience the charm of nostalgia for the neighborhood's heydays.

The Crown Candy Kitchen does not, and can not, serve the primary food needs of Old North residents. The North City Farmers' Market was launched in 2007 in effort to begin rehabilitation of that St. Louis neighborhood's health (ONSLRG 2010). Testimonial from the Market's website states:

The departure of many grocery store chains from the area has left behind only gas stations and convenience stores that feature high-priced, low-nutrition foodstuffs that decrease the general health of the community. The mission of the North City Farmers' Market is to grow community health by offering affordable, fresh produce, free health screenings... and healthy cooking demonstrations while encouraging community participation and weekly gatherings for residents and visitors alike. (NCFM 2010)

The “13th Street Community Garden” was planted two blocks away from the North City Farmers' Market. For their direct, multi-sensual experiences of the garden in proximity, there is greater probability for neighborhood market-goers to develop both Types 1 and 2 knowledge of food plant growth. Old North St. Louis residents (and “visitors alike”) who have not been exposed to the food plant growing process, e.g. of tomatoes, have an opportunity because the community garden happens. In both Maplewood and the Old North, market-goers have the potential to achieve Type 3, or indirect knowledge, of tomato growing. Since there, a person can learn about *how* and *where* tomatoes are grown from the vending farmers or farm-workers that have direct knowledge of tomato growing.

Two St. Louis County “Grocery Stores”

St. Louisans at Farmers' Markets were estimated to fulfill the Knowledge Typology categories 1, 2, and/or 3, but persons of the Type 4—having no knowledge of tomato growth—were less probable there. The TTDs entailed taste testing a “locally grown” tomato sample and a “non-locally grown” one in order to research a relationship between the knowledge types theorized and taste perception. Logically, grocery stores are where an urban eater may find a non-locally grown tomato to choose from amongst other kinds of food. And since deciding to conduct research at the Maplewood and Old North St. Louis neighborhood Farmers' Markets, it was reasonable to locate data collection at grocery stores in these neighborhoods also. **Table 2** visually represents my planning the four fieldwork sites distributed between two neighborhoods.

Table 2. Fieldwork Matrix for four St. Louis TTD locations

Maplewood	<i>locally grown</i> tomato	<i>non-locally grown</i> tomato	Old North
I Farmers' Market			II Farmers' Market
III "Grocery Store"			IV "Grocery Store"

There are numerous grocery stores within the Maplewood neighborhood. Some are located in proximity to the Farmers' Market and Schlafly restaurant garden. However, due to prohibitive corporate policies, I was entirely dissuaded by store managers from conducting Tomato Tasting Dialogues there. This prompted my re-considering the project's fieldwork locations.

Since neighborhood-specific "cues" might stimulate food perceptions, it was logical to conduct a multi-neighborhood study to isolate this variable for the taste tests. Since deciding that St. Louis residents of Maplewood and the Old North neighborhoods would represent urban eaters for the thesis, it was important to site all TTDs within those boundaries. This was also important in order to make controlled analysis of any multi-sited "taste" differences. Tomato preferences would be gathered from neighborhood residents who may have experienced *one* or *both* the Farmers' Market and the grocery store. These neighborhood places are where the two different tomato kinds obtain. And so, per neighborhood, it was necessary to site data collection as near as possible to both the Farmers' Market and grocery stores there.

Because I was confident that the Farmers' Market would provide Knowledge Types 1 and/or 2 research participants, I re-figured for sites where Type 3 or 4 knowledge individuals could be. Instead of using limited fieldwork time to try negotiating with corporate grocery business administration, I sought a civic location—the local library. It is not a place to obtain any sort of food, but a public library seems a socially and economically neutral neighborhood location and arguably the most commonly valued non-business entity. It was the most

logical site alternative to function as a “grocery store”. Urban eaters with all types of tomato plant growing knowledge and tomato taste preferences could be possible research participants there. The Maplewood/Richmond Heights Memorial Library (abbreviated hereafter as RHML) is an independent municipal library in St. Louis County. It is two miles from the Maplewood Farmers’ Market, but nearer to grocery stores. This site was decidedly within proximity to both these neighborhood “food” sources. After only one explanation of the research project to the RHML Director, I was admitted to conduct the third session of Tomato Tasting Dialogues there.

The fourth fieldwork site was determined after successfully conducting Tomato Tasting Dialogues at the two Farmers’ Markets and the RHML. Because the grocery store policies in Maplewood were prohibitive, I presumed the same for a grocery store in the Old North neighborhood. And due to the dearth of grocery stores there, an alternate site choice was necessary. Following the Maplewood research, I reasoned a public library could provide both *quantity* and *quality* of “taste” data in the Old North (in addition to that already collected at the North City Farmers’ Market). Telephone conversation was made with the St. Louis Public Library (abbreviated hereafter as SLPL) Director for authorizing research at the branch location nearby Old North. However, due to regulations there, including *No solicitation* and *No food or drink*, conducting the TTDs was prohibited. Fieldwork site location was once again evaluated.

Spending time planning the fieldwork was invaluable for analyzing the research process and allowed for reflexivity about the methods, but the St. Louis tomato season waned alongside. Logistical delays increased the possibility that the locally grown tomatoes would be unavailable for the fourth and final session of Tomato Tasting Dialogues conducted in early October. Annual St. Louis weather patterns indicate the increased likelihood for near-freezing night-time temperatures then. This severely damages or kills local tomato plants. Tomato fruits ripen very slowly in the cooler weather, and nearly no ripening occurs with

frosty plants and fruits. While grocery stores maintain supply of non-locally grown tomatoes year-round—sourcing from long distances and warmer winter climates to ensure this—the tomatoes grown locally to St. Louis cannot be available beyond the autumnal period.

The business sector was re-considered in further effort to locate the second site of the Old North neighborhood TTDs. A survey of all Old North neighborhood businesses offered limited choices—a few each of gas stations, liquor stores, fast-food restaurants, and pawn shops—and a general hesitation to collect data at an insecure site caused me to cross the Old North neighborhood boundary toward the St. Louis city center. There, across the street from the main SLPL branch, is the Downtown St. Louis “YMCA”. It is 1.5 miles from the North City Farmers’ Market, and 2 miles from grocery stores.

I know the “YMCA” as a long-standing urban community institution in multiple US cities from personal experiences. The “Young Men’s Christian Association” (YMCA) is officially organized on religious principles. However, with a physical fitness-focus, less overtly religious, YMCA facilities promote a wide variety of activities and community services. Therefore, I presumed it served a demographic range—a great quantity of St. Louisans with diverse interests and personal experiences. For the purposes of sampling nearby Old North residents of various knowledge types, I pursued this location as a St. Louis community-center. With a phone call to the Downtown St. Louis YMCA Director and discussion about my research project, the data collection was quickly approved. Choice of the fourth TTD location was made primarily for factors of proximity to the Old North neighborhood “food” sources and public accessibility. But due to fieldwork time constraints, the final TTD location was decided by the quick approval from the site manager.

The TTDs: *When?*

With additional time spent before and during the actual Tomato Tasting Dialogues for slowly planning an unfamiliar process of research, fieldwork was conducted in September and October 2009. This is the latter period of the tomato growing season for St. Louis, Missouri.

I remained at each TTD site for four hours to collect data. This length of time was dictated by the Farmers' Markets hours of operation and was matched at the two other sites for control of data. I did not seek to ensure fulfillment of the knowledge typology by soliciting the likely typical individuals—such as farmers' market vendors—to participate in the research. At all four locations, the TTDs were situated alongside the main flow of foot traffic and individuals—of their own volition—ventured to be engaged.

The TTDs: Recording Sequences

The fieldwork data was recorded by three methods. I adapted a sample "Interview Protocol" form for recording all hand-written data during fieldwork study (Creswell 1998:107; **Appendix 1**). I video-recorded the TTDs, which averaged fifteen minutes in length individually, and transcribed them into text.

By a three-part sequence consisting of qualitative and quantitative data aspects, each Tomato Tasting Dialogue reflected the hypothesis that taste is a multi-factored phenomenon. Here is the synopsis of what the TTD sequence entailed. First a blind taste test was conducted of samples from two tomatoes that were hidden from viewing. For this part one, participants were informed only of the food kind to expect to taste, i.e. a "tomato". The tomato samples were cut similarly—into wedge shapes—and offered to the closed-eyed participant to taste. After the participant's closed-eye chewing concluded the dialogue resumed for investigating *if* and *what* a difference was perceived from the two blind-tasted tomato samples.

For the second part of each TTD, the sampled tomatoes were revealed. (See **Figure 4**.) This tested visual cues as factors for taste perceptions of differing tomatoes. Therefore qualities of “tomato” such as color, shape and fruit skin blemishes were noteworthy when acknowledged. Also revealed in TTD part two were the tomato labels with the corresponding kind distinctions “locally grown” and “non-locally grown”. This labeling was for the purpose of making them *socio-culturally* meaningful kinds of tomato-food objects. The non-blind tasting of TTD part 2 was designed to allow for the visual variables to additionally affect the participant’s evaluation of the tomato. Seeing the tomato objects and apprehending meaning from worded labels might differently cue a participant’s taste perception.

Figure 4. Maplewood Library TTDs: Part 2 tomato display



Part 2 of the TTD sequences continued for researching the thesis that the different knowledge possible of food growing influences personal food taste preferences. In order to categorize each participant according to the knowledge typology conceived for this project, I asked specific questions about previous experience with tomato growing and general understanding of tomato plant growth. For some participants, I gave relevant examples of types of knowledge-making experiences: doing tomato gardening; watching gardening programs on

television; reading about tomato growing in books, etc. The interview format was open-ended. This allowed my questions to vary as felt natural to the greater dialogue at work for studying the “taste” phenomenon by the experiences of the Tomato Tasting Dialogues.

My project grappled with the hypothesis that “taste” is a multi-factored phenomenon motivating personal food choices. To further test this, the third part of the TTD sequences consisted of a personal taste bud count. This categorized each participant’s taste ability according to Bartoshuk’s *nontaster-taster-supertaster* distinctions (BBC NEWS 2003). By applying blue food dye to the tongue, the papillae become visually pronounced. Placing an index card with a 7mm-wide hole punched into it over the top-front section of the participant’s tongue, I looked through a magnifying glass and counted the pronounced papillae. The fungiform papillae, which are relevant to taste ability, were larger to see. Counting those within the 7mm-wide paper hole gave an average number of taste buds, which represented a participant’s genetic disposition to the categorial sensitivities. The taste bud count data verified one unchangeable factor for the participant’s ability to differentiate the tomatoes tested as well as perceive a preferably good kind.

CHAPTER 5: UNDERSTANDING THE DATA

The outcome of this project’s methodology is the sequence of the Tomato Tasting Dialogue events. As logistical information resulting from an adaptive research process, the fieldwork is completely and finally represented by **Table 3**.

Table 3. The Tomato Tasting Dialogues: methodological data

	TTDs 1	TTDs 2	TTDs 3	TTDs 4
<i>Who?</i>	4 St. Louis participants	7 St. Louis participants	4 St. Louis participants	2 St. Louis participants
<i>What?*</i>	NLG: bought prior to TTDs 1 at Shop n’ Save, 0.5 mile from site. Labeled “Grown in the USA” LG: donated prior to TTDs 1 from Maplewood Farmers’ Market, grown 0.06 mile from site, Schlafly Garden	NLG: bought prior to TTDs 2 at Schnuck’s, 2 miles from site. Store signage “Grown in Illinois” LG: bought prior to TTDs 2 from Farmers’ Market vendor, grown 0.1 mile from site, 13 th St. Community Garden	NLG: bought day prior to TTDs 3 at Aldi, 1 mile from site. Labeled “Grown in the USA” “vine-ripened”. LG: bought from Maplewood Farmers’ Market vendor day prior to TTDs 3, grown 70 miles from site, Berger Bluff Farm	NLG: bought 3 days prior to TTDs 4 at Aldi, 3.5 miles from site. Labeled “Grown in the USA” “vine-ripened”. LG: bought 3 days prior to TTDs 4 from North City Farmers’ Market vendor, grown 1.5 miles from site, 13 th St. Community Garden
<i>Where?</i>	Maplewood Farmers’ Market	North City Farmers’ Market	Maplewood/ Richmond Heights Memorial Library	Downtown St. Louis YMCA
<i>When?</i>	23 September 09 3:00-7:00pm	26 September 09 8:00-12:00pm	1 October 09 4:00-8:00pm	13 October 09 4:00-8:00pm

* NLG abbreviates “Non-locally Grown tomatoes”, and LG, “Locally Grown tomatoes”.

Social Inquiry as Practical Philosophy

It was not the methods that provided the data per se, but structuring the fieldwork ensured a *guided* process for obtaining analyzable tests of real taste experiences. The working methodology of this social inquiry-as-practical philosophy made it successful research.

During the fieldwork phase of this project’s research, it was necessary to act quickly and make swift decisions pertaining to methods of data collection.

The primary reason for this was the perishable nature of tomatoes as tools for the taste tests. But due to not having clearly decided the *Who, What, Where* and *When*, this project's fieldwork methods were determined and learned through the course of doing it. This enabled flexibility to adapt the project's process, and required constant detailed awareness of the research variables. And so, despite feeling amateur to academic research, the constant reflection caused rigorous thesis study.

With assessing academic rigor of the research came questions of its authenticity. How genuine and analyzable were the taste tests? Conducting the Tomato Tasting Dialogues achieved a collection of shared taste experiences, but how authentic were these as data for a phenomenology? The thoughts—that the taste experiences were less-than-real, or that there was something *essential* removed during such a formalized act of tasting tomatoes—were only explainable as they were inner monologue of me, who guided the research process. The participants seemed really focused on the tomato tasting experiences. They weren't acting like tomato-tasters for the sake of being on camera. The experiments simply caused instances of being more aware in the eating action. Brillat-Savarin's words ring true: *We eat nothing without sensing it with more or less awareness* (Brillat-Savarin 1854b:19). It seems true, in other words, that by "taste" is a person able to sense a "food" in degrees of eating awareness. The taste test format inherently necessitated the participants' hyper-awareness of the sensation but did not detract from the realness of the taste experiences. And so, it was not something essential to "taste" lacking per tomato taste test. Rather, as a focused taste event, a participant applied much-more-awareness to the eating action. This is reason enough to count the results as genuine for the thesis research. The Tomato Tasting Dialogues simply high-lighted, by practical methods, that greater awareness in the eating action enables a person to perceive different food values.

The TTDs: Analysis

The video and written-recorded Tomato Tasting Dialogues were analyzed in a process of watching, listening, and reading the content. Because each TTD was conducted in a three-part sequence, the thesis-relevant data was categorized after assessing the content in parts. The first step was to separate the participants' testimonials of the Part 1 blind taste tests from the Part 2 non-blind taste tests. In Part 1, the data was categorized first, by the participant's responses indicating ability to blindly differentiate two tomatoes. If positively able to taste distinction then the participant stated preference for one. Any description of these differently perceived "tomato" qualities was noted. Consequently, this defined the preferably good tomato taste.

Part 2 of the TTDs began with uncovering the tomato display for adding visual cues as variables to the taste test. A participant's Part 2 dialogue was divided into several categories for analyzing thesis-relevant data. After the two tomatoes were shown and their identifying labels explained, a participant re-tasted samples. This non-blind taste experience was described for either confirming or refuting her/his Part 1 tomato evaluation. The specific words a participant used to amend this were useful for cross-TTD analysis. Commonly used words revealed valuable qualities of the two tomatoes that were shared by multiple participants. Such data was useful for indicating what the TTD participants defined as a normal "tomato" taste.

Next, the Part 2 TTD data was assessed for defining a participant's knowledge of tomato plant growing. After the knowledge type was evident, three additional data categories were extracted from the TTD recordings for analysis.

- 1.** Proof or disproof that a participant's knowledge type and taste perception were associated in the tomato eating experiences.
- 2.** If and how a participant's taste preference for a "tomato" had significantly changed during her/his lifetime. And
- 3.** TTD data was grouped as signifying a participant's "tomato", food choice.

Finally, the taste bud counts that constituted Part 3 of the TTDs provided the

quantitative data indicating each participant's given sensitivity to taste certain tomato quality.

It has been asserted from the course of this study that “taste” happens by a process of changeable and unchangeable factors. How is the TTD data relevant for this hypothesis? A person's tongue anatomy, for example, is an *unchangeable* factor for tasting the nutrients of food. Analyzed separately from Parts 1 and 2, the taste bud counts of TTD Part 3 could be useful for proving why the tomato samples evoked different or similar tastes amongst participants. For example, if the four participants of the Maplewood Farmers' Market site had similar taste bud counts, then they might have samely described a tomato taste. That is, because these four participants taste-tested pieces from the same two tomatoes, the also *unchangeable* chemical structure of the two tomatoes would be similarly sensed. Thus, it could have been reasoned why all four participants describe one tomato sample to taste “sweet”. This data analysis would be useful for simply proving a certain tomato quality correspondent to the participants' given sensitivity to the food nutrient, sugar. But in fact, the participants of the TTDs had varying taste bud counts. Due to unchangeable mouth anatomy, a person's ability to taste certain tomato nutrients may not vary. However, because physiology varies amongst people, so could it not be for this factor alone that the tomatoes are similarly tasted. Moreover, tomato quality could not be known from the physiological test of taste ability alone.

Not all thirteen of the participants who pronounced taste preference for the locally grown tomato experienced it as a good one. Gathered testimonials of TTD Parts 1 and 2 suffice to prove that one tomato kind was experienced as good only in comparison to the other. Thus, the preferable locally grown tomato cannot be the *exemplary* kind—truly representative of “good tomato”. A good tomato was not necessary to conclude a tomato kind preferred by some St. Louisans. The Maplewood Library location participants Ted and Terry were

unsure of qualitative difference between the two tomatoes when blindly tasted. Maplewood Farmers' Market site participant Ellen told that she could not perceive either sample as good. And, participating at the North City Farmers' Market, Pearson was unsure of her taste preference for either tomato sample by the blinded test alone. And yet, all four of these participants did positively describe taste of the locally grown tomato after the non-blind test. The TTD data works in tandem with my theoretical account to prove *changeable* factors of taste correlate to a person's perception of a preferably good tomato kind.

The TTDs: Presenting Findings

I journalistically report the Tomato Tasting Dialogues in sections here to enrich my documented thesis research. This device is justified by experienced researcher Steinar Kvale, who explained that, "the relational and tacit aspects of the interview situation are difficult to present in explicit verbal form" (Kvale 1996:273). Non-verbal communication, which seemed important to the participant's full taste experience, is represented in bracketed italics and added for conveying the phenomenology. I distinguish participants by name abbreviations. The capital letter "M" indicates my speaking, and the other capital letter preceding quotations denotes the participant with whom I dialogued.

Maplewood Farmers' Market

Ellen, a 67-year old local food-grower of urban St. Louis, was the first Tomato Tasting Dialogue participant at the Maplewood Farmers' Market location. Blind to the two tomatoes and their differing labels of kinds, Ellen distinguished them by her taste preference. She said, "The first one was better. The second was tasteless" (TTD1:23.09.09). It was the locally grown tomato sample that Ellen preferred, but she also indicated that this one was not a good "tomato". Ellen stated that, "Neither of them was really good. They were both, kind of tart and, not the greatest" (TTD1:23.09.09).

Commencing her TTD Part 2 the two tomato samples were uncovered, and Ellen was encouraged to taste test them again. She learned the “locally grown” kind originated from the Schlafly garden only one city block away. She ate only half that tomato wedge piece for a taste and discarded the remaining. When presented the” non-locally grown” sample for a second taste, she replied “I really don’t want to taste that one again” (TTD1:23.09.09). She was committed to the certainty of her blinded taste experience. Ellen was not willing to test for a change in her perception of the tomatoes’ taste. However, through further dialogue she granted positive value *potential* to the “locally grown” tomato after learning its label and growing source. The following excerpt indicates that Ellen’s tomato evaluation was influenced by the variables of her TTD Part 2.

E “The one from Schlafly would have been better if it had been ripe. It wasn’t really ripe. ...But it’s hard to get ripe tomatoes at this time of year. It’s just too cool.

M “So, by ripe do you mean that it’s been on the vine longer, or?”

E “You get more flavor in the summer when it’s warmer.”
(TTD1:23.09.09)

If, according to Ellen’s initial testimony, *neither* of the tomato kinds *were really good*, how could it be that one could have been—or became—preferable? Ellen meant that a good tomato is a ripe tomato. And so, logically concluded from her statements, *both* tomato kinds could be better if taste-tested in the summertime “when it’s warmer”. For this interpretation, Ellen could think a non-locally grown tomato may also develop a certain ripeness and flavor, which qualify it as preferably good to taste. If ripening happens not necessarily by a fruit’s attachment to the plant growing in some place—local or non-local—then that tomato taste is not necessarily a function of where the food is grown. But, *where* the food is grown is a causal factor of the tomato value: according to Ellen’s

words, the coolness or warmth of the growing place significantly affects a tomato's quality.

Ellen's dialogue indicated that understanding a tomato's locality affects a more full sense of taste perception. Ellen's Type 1 knowledge of tomato plant growing related to her TTD taste experience. Ellen has an above-average degree of experience with tomatoes: she claimed to having grown 530 tomato plants during the summer season preceding the TTD fieldwork. This type of direct, practical knowledge of tomato plants grants her understanding of the ecological conditions necessary for growing a *good* tomato. It is for her growing a tomato-producing plant that Ellen does intend a good-tomato-thing. According to her dialogue, Ellen judges a tomato's quality by perceiving its ripeness. And, tomato ripeness, for Ellen, is perceived as a degree of tomato flavor tasted.

Ellen's TTD proved her taste ability is for factors of her anatomy as well as her learning. Her ability to differentiate tomato kinds in the blind taste test is supported by the fact that Ellen has an above-average number of taste buds. Her papillae count of Part 3 was 34+. Her ability to judge tomato quality was also supported by the fact that she has direct, practical knowledge of tomato growing. However, it was evidently for Ellen's type of tomato plant growing experience that she testified more strongly to prefer the taste of the tomato labeled "locally grown". For the simple reason that she is a tomato farmer did it behoove Ellen to suggest the locally grown tomato could become positively valuable, or better to taste. And so for the tomatoes tested, Ellen's taste perception was pronounceable by and for a social factor.

Shirley was the second TTD participant at the Maplewood Farmers' Market location. She perceived the same tomato preference in the non-blind taste test as the blinded test. Shirley described her taste distinction of the tomatoes in the following recorded statements of her TTD Part 1:

The second one (the LG) was better both times...the first one (the NLG) didn't have much taste. The texture was the same for both. ...Neither one of them tasted like my mother's tomatoes. But the second one (the LG) was definitely better. It had a richer taste. It was fuller. The [non-locally grown] tomato was flat. The texture was alright...but it wasn't sweet. The [locally grown] one was sweeter.
(TTD2:23.09.09)

Shirley is categorized as Type 1 with direct, practical knowledge of tomato plant growing. It became evident in the continued dialogue that she associated her knowledge of tomato growing as well as memories of tomato quality to evaluate the two kinds tested.

S "I had tomatoes from my mother's garden my whole growing up life.

M "So, did you get to work in the garden? Did you get to see your mom doing it?"

S "Oh yes, both...and I have had gardens of my own (...)
When I was probably in my mid-twenties I had my own successful garden, and then I moved to a bad area. And then I moved to another bad area. So I've not had successful gardens of my own since...now I don't have any sun! I didn't know that when I was getting this wonderful shady property, that I was ruining my own possibilities of growing wonderful tomatoes. [...A tomato] has to have sun."
(TTD2:23.09.09)

The tomatoes from her mother's garden impressed Shirley. So she evaluated the TTD tomatoes in a comparison to a remembered taste quality of her mother's tomatoes. The positive tomato taste, for Shirley, was perceived by experiencing one that was *like* her mother's tomatoes or those that she successfully grew in her own gardens. Her experiences of gardening tomatoes enable Shirley to perceive certain tomato quality. Her direct, practical knowledge of tomato plant growing has shaped her understanding how ecological conditions affect tomato fruit quality. Shirley's learned that sunshine is necessary for a "wonderful" tomato.

At 56 years old, Shirley has accumulated years of experiences comprising her knowledge of tomato plant growing and her definition of good, “tomato” taste. Through her continuing taste experiences, Shirley validates her perception of tomato quality.

From the following dialogue excerpt it is evident that Shirley’s choice of “tomato” as a preferably good food-thing is intentional for her experience of a certain taste.

S “Until recently, you would not have caught me with my mouth around a store tomato. But, they’ve actually gotten a little better. The one’s they had in the store when I was growing up were not hardly food. These [store-bought tomatoes] are better now.”

M “Why do you think that is? What’s the difference that you’re getting? Is it taste, or signage that tells you more about them?”

S “...It’s the taste. ...I’m aware that when it’s shipped in from other, ya know, wherever far off away, that there’s an environmental impact, which concerns me. ...if I can get local I will. I’m also concerned about...what goes into shipping one, when they pick it when it’s green, and they ship it and put it on a box and wait for it to ripen. That’s not going to be as good. I know that...and I know that they use more chemicals, and if I can get one that doesn’t use as much chemicals that would be better. ...So, those are things that I know with my head, but the, the store tomatoes when I was growing up... They were just... You could just [*moves her mouth in chewing motion*] chew them [*laughs*]. They weren’t hard; you could chew them. And they had absolutely no taste, and very little color. They were almost white inside. There was none of this rich, red stuff that you get when the tomato ripens in the sun. And it was just, not at all sweet. I mean they didn’t even taste. ...But now, the growing processes are different, and I think maybe the shipping processes are different. ...Ya know, they’re not as good as home-grown, but they are better. ...They do taste like food.” (TTD2:23.09.09)

Shirley's suggests that non-locally grown tomatoes have negative ecological effect. This understanding factors for her perception of that tomato kind. And Shirley stated explicitly that they weren't good as locally grown (home-grown) because they had "(...) absolutely no taste (...)" (TTD2:23.09.09).

Her testimonial for the different kinds of tomato in both taste tests simply confirmed that Shirley's perception of a good tasting tomato happens for multiple factors, including a learned one. In the following excerpt she suggests that different urban grocery locations inform urban eaters' tomato taste differently. She tells how her tomato taste perception is informed.

Oh here [at the Maplewood Farmers' Market] I've got information. ... If [the vendors] don't say that their [tomatoes] are chemical free, I know I'm taking a risk with what chemicals they might be using. And I know that they haven't been shipped from Timbuktu; that they're somewhere from around Missouri or Southern Illinois. ... I know they're close. I know there's less of an environmental footprint. And then... They taste better! And that's why I do it. Because if the grocery store tomatoes tasted wonderful it'd be a lot more convenient. (TTD2:23.09.09)

Shirley's tomato perception has been shaped through a process of learning. She may choose a tomato with awareness of the ecological affects of its kind. But ultimately, Shirley's tomato choice is for an expectation that it is preferably good to taste. Shirley eats a "tomato" for the intention of experiencing it as "richer, fuller, and sweeter" in tomato-taste (TTD2:23.09.09).

Tom, as Ellen, was not willing to taste test the tomato samples a second time. He asserted his tomato preference with the blind taste test experience only and described this during his TTD Part 2.

M "So the first one you tasted is the non-local. Um, I got it at Shop n' Save just before I came here.

T "Okay. I can tell.

M “um, go ahead and try it again, [*refers to remaining non-local sample half-wedge in Tom’s right hand*] and tell me what you’re getting in that process.

T “I don’t need to. This [non-locally grown tomato] is like...a hothouse tomato. It doesn’t have much flavor. It’s kind of, um, crunchy, as if it were picked early and not allowed to ripen fully. This [locally grown] one was fresher. Um, it was juicier, uh, and it had more flavor.

M “Okay. So the better tasting one was better because...?”

T “More flavor. More flavor, more juice.” (TTD3:23.09.09)

Unlike Ellen’s supertaster status, but like Shirley, Tom has an average taste sensitivity given his papillae count of 23. Tom’s ability to differentiate the tomatoes sampled was evident by his description of the taste experience. His preference for the locally-grown tomato kind was, in part, for its more flavorful taste. Tom’s dialogue also proved that learning the tomato labels influenced his tomato evaluation. It happened after telling him which sample was the non-local, that Tom confirmed his taste perception. Evidently, Tom expects a “non-locally grown” tomato to taste like he experienced it in the blind test.

Tom is categorized Type 1 with direct, practical knowledge of tomato plant growing from his statement: “I’ve had a lot of experience gardening” (TTD3:23.09.09). At 50 years old, Tom’s quantity of experience with growing tomato plants factors importantly for his understanding of “tomato”. The following dialogue excerpt indicates that Tom’s type of knowledge of tomato plant growing affected his taste perception of the tested tomatoes.

M “Do you think that when you tasted those two...there’s a connection with your tomato growing that...”

T “Noooo.

M “...sort of, enables you to...distinguish?”

T “Well, it’s hard to say because... All I eat is raw food. ...And part of that is flavor, nutrition, and health. Health of

the environment. And then it's a...whole package. ...I'm creating a website about people getting well using natural plant sources...natural healing modalities... So, I'm all into that. The gardening thing happened a long time ago.

M "Okay...it's in your memory banks. It's in your experience. If you hadn't had that gardening experience...

T [*nods*] "That's probably true, but been reinforced as the years have gone by, by continually eating better and better food. ...It started with gardening, and that gardening stopped probably fifteen years ago. ...And then it continued in a way because I've been so focused on high quality foods(...)I still have the taste buds and the sensation that's been *developed* from eating higher and higher quality foods."
(TTD3:23.09.09, emphasis added)

Conclusive by his statements, Tom did not consciously refer to his direct, practical knowledge of tomato plant growing for evaluating tomato quality in his tasting experience. And, he was quick to deny such an association inhered in his tomato taste. It seems reasonable, however, that Tom's initial response arose from preoccupied thoughts of his very work to inform people of their "getting well by natural plant modalities" (TTD3:23.09.09). It seems to me, in analysis, that his mind was focused by his personal value for *indirect* knowledge-making sources—i.e. his website—and that this caused his hasty reply to the question.

Evident from the previous TTD excerpt, Tom did grant that the fact of his taste sensation was partly an association of his past gardening experience. But, the connection between his *a priori* knowledge and tomato preference pronouncement is not enabled by Tom's physiology (for taste) simply. "By continually eating better and better food" as he said, Tom has "*reinforced*" his knowledge of tomato quality achieved from direct gardening experience (TTD3:23.09.09). Tom's testimonial serves the claim that taste is knowledgeable, because it is a developed ability. And so, Tom aims to explicitly inform personal tastes with his website! Tom's website is an *indirect* source of knowledge for learning that "flavor, nutrition, health...health of the

environment... [is] a whole package” (TTD3:23.09.09). With his website, Tom instills a type of knowledge that may motivate food choices.

Wade, the final participant at the Maplewood Farmers’ Market, preferred the locally grown tomato from the Schlafly garden in both TTD Part 1 and 2. However, he only ate the preferred tomato sample in the blind test. After revealing the labeled tomatoes and asking Wade to re-taste the samples, he reaffirmed his preference by eating only the non-locally grown sample. He did not taste the locally grown sample a second time. Wade was sufficiently certain of his taste perception of the locally grown tomato sample from eating it for the blinded test and seeing it non-blind. His Part 2 description of the taste experience indicates Wade’s locally grown tomato preference was confirmed by the additionally stimulating variables.

The locally grown one...it’s more tomatoey flavored...it’s more acidic. ...And, it seems to me that it’s riper, so the flesh is softer. The one that you got at Shop n’ Save has a milder flavor... I should say it has less flavor... There’s much less tomato flavor. It’s firm. Ya know, it’s too firm. It’s like...*it tasted like a store bought tomato*. It tasted to me like it was not ripe when it was picked.

...not a huge difference between them visually. ...The one you bought at the supermarket, the skin is completely smooth. ...It doesn’t have any imperfections on it. It looks like it’s a mass-produced agricultural tomato. ...The locally grown one...it has some...russeting at the top, near where the stem was. *It looks like something you would grow in your garden*. ...You can see little bits where it’s darker in some places. There’s a little bit of greenish-yellow there, but it’s...Ya know, if you know tomatoes you would say that that one’s... It just looks like it’s naturally ripened.
(TTD4:23.09.09, emphasis added)

Wade’s given sensitivity to taste is categorized as below-average. His papillae count was 10. Nonetheless, Wade could differentiate the tomato kinds, and was

able to describe his taste experience more descriptively than participants with greater taste bud numbers. Certain cues of Wade's TTD Part 2—the tomato visuals and their labels—factored for his ability to fully “taste” the sampled tomato kinds. He evaluated these by *likening* qualities of store-bought and garden-grown tomatoes he has directly experienced.

For the thesis, Wade is categorized Type 1 with his direct, practical knowledge of tomato plant growth. In the following dialogue excerpt, Wade proves this affected his evaluation of the tomatoes.

W “I haven't grown tomatoes for six years or so, but I used to grow tomatoes frequently.

M “So you, yourself, have tomato growing experience. I'm interested in how that knowledge might relate to taste. ...And if that...may influence your perception of the difference in taste between the two.

W “Yeah, I think...

M “Do you think that ties in?

W “...I think that does. Because I know that if you pick them too early, they just aren't going to taste right. They're never gonna develop that flavor, and when you're growing them you have to be... You have to be a little careful, especially in this climate. ...Ya know, it's like, how long do you let 'em sit on the vine? It's like: [*mimics inner monologue*] *Oh, it's getting red now and I could pick it, but it probably would be better if I waited two or three days.* And so you kind of have to know how to look at 'em. And...if you pick 'em too early they maybe look good, but you bite into it and it's like, well it should have sat on the vine for another two days. ...I can't say I was ever so great at growing them that I know...how to grow a better tomato. ...I don't know that much about what I was doing with them that made them better. ...And usually if I could get my tomatoes ripe on the vine they'd be good pretty much no matter what I did. ...They're always better...than the one's you buy at the supermarket. Always. Ya know, grow 'em yourself, or I'll buy [*gestures toward Maplewood Farmers' Market vendor stalls*] 'em at a place

like here. ...It's almost impossible to get a good tomato in the store. ...I pretty much don't buy tomatoes in the supermarket...because I'm always disappointed. ...Because they taste like this one [*points to NLG tomato on display*], which is, they don't taste. [...And] the point is, you want the tomato flavor because it's good." (TTD: 23.09.09)

Wade referenced his gardening experiences for perceiving “ripeness” of the tested tomato kinds. Therefore, his direct, practical knowledge of tomato plant growing is necessary for his perception of this tomato quality. Wade’s tomato preference was affected by perceiving this quality during the blinded taste test and confirmed in his TTD Part 2 with the additional cues for his taste perception. Like the participant Shirley’s statements, Wade’s TTD represents more generally, that “taste” is a specifically important motivator for a personal food choice. Wade seeks the preferably good tomato at urban grocery places like the Maplewood Farmers’ Market, because he learned to know these available there. And he has learned directly that growing tomato plants himself achieves the preferably good kind of tomato to taste. Furthermore, if Wade chooses to buy a locally grown tomato, or chooses not to buy a non-locally grown at a St. Louis supermarket, then his food choice may be ecologically taste-full.

North City Farmers’ Market

Although with an audible uncertainty in her reply of “Yeeeah”, participant **India** did confirm experiencing difference of the tomato samples in her blind taste test (TTD1:26.09.09). She was more certain knowing why the locally grown tomato sample was experienced preferable—its “sweetness” (TTD1:26.09.09). During her TTD Part 2, India’s taste preference was re-affirmed for the “locally grown” tomato. India was told that this tomato was sourced from the nearby 13th Street Community Garden, and that the other sampled kind was obtained from the store. Without acknowledging any associated understanding of these identifying terms, she ate both the samples again and emphasized her initial assessment. She liked

the locally grown tomato taste more because it seemed to her like it had sugar, whereas the non-locally grown tomato didn't (TTD1:26.09.09).

India is categorized between Type 1 and Type 2 direct knowledge of tomato growing. Such categorical ambiguity resulted from the TTD telling of her tomato growing experience. From off-camera, India's sister announced India's involvement in the 13th Street Community Garden. It was not until her sister verbally reminded her in TTD Part 2 that India seemed to make a conscious connection between experiencing a tomato plant growing process and eating the resultant tomato fruits. India's garden experiences instilled Type 2, direct and *non-practical* knowledge. India's is a non-practical knowledge of tomato plant growing because her garden actions are not consciously recalled, and thus not intentional, for growing good tomato fruits. Nonetheless, she testified to a perceptual understanding of the tomato growing process because she recalled eating them off the plants. India's TTD taste perception may have been affected by her direct garden experiences. In other words, India may perceive a preferably good tomato because she has directly experienced the locally grown kind in the 13th Street Community Garden.

The direct knowledge she achieves from garden experiences is not necessary, however, for her food preference of tomato. India has average taste sensitivity, on Bartoshuk's scale, given her papillae count of 12. India's anatomy is a reasonable factor for her ability to taste the good food-thing. And so, given her physiology, may she have simply preferred the *kind* of tomato that she told tasted *sweeter*. This analysis is supported by the research of Desor et al., which proved an innate human taste preference for sugars. To reiterate, Desor et al. concluded that a taste preference for sugar is not only humanly innate but also regardless of factors of individual experiential development. At five years old India has relatively less experience eating tomatoes than, presumably, an older person. This didn't prevent India's ability to perceive a tomato difference in both blind and non-blind taste tests. Nor did her youth prevent her ability to perceive a

tomato taste preference. India may prefer to eat a tomato as a food-thing alongside food choices for a *sweet* flavor preference. But, India's distinguishing between "locally grown" and "non-locally grown" tomato kinds may only be relative to her understanding of the identifying terms. These terms identify the tomatoes as socio-culturally meaningful food-things, and India's little-developed life experience may not yet render the meanings significant for her perceptual evaluation of kinds.

Using the transcription recorded as Part 2 of India's TTD provides data for the general assertion that a person's perception of taste happens for a socio-cultural factor. Witnesses to India's tomato tasting experience interjected spoken opinions and thoughts, and the following recorded dialectic scenario represents how taste develops with shared experience. The bracketed and italicized text represents the off-camera interjections and any noteworthy gestures made by India or myself.

M "Okay let's try it again. So, the first one that you had..."

I "Was..."

M "...was grown in the garden nearby—the 13th Street Garden—so you can try that one again.

[*Sister Anastasia: "Oh yeah those ones are really good."*]

M "So that's this one. [*points to the LG tomato on display while India eats the second piece*] You get two pieces. [*hands India the NLG tomato sample*] This one is from the store. I want you to..."

[*Sister Anastasia: "Ooh yeah, the ones from the store don't taste very good."*]

M "...taste it, and tell me the difference between the two. What do you taste?"

[*Friend Gloria: "I didn't, I didn't used to like tomatoes until I tried my Grandma's."*]

M “So, what do you taste with that one?”

I “This one? [*refers to empty toothpick for LG tomato*]

M “Yeah.

I “This one tastes pretty good.

M “Pretty good? Why is it pretty good to you?”

I “Because it seems like it has sugar.

M “Okay.

I [*proceeds to eat the NLG sample*]

M “What do you think? Is there a difference between the two?”

I [*nodding*] “...this one doesn’t taste like sugar. [*continues to eat the second, NLG tomato sample.*]

[*Sister Anastasia: “Does it just taste like gross? I know the ones at the store don’t taste very good.”*]

M [*says toward off-camera Anastasia: “No influencing her answers!”*]...Anything else about those two?

I [*shakes head “No”*]

M “Okay. Can you describe the tastes a little more?”

I “Hmmm [*shakes head*] no.

M “Okay, so, what do you know about tomato growing? Have you helped out in the [13th Street Community] garden?”

I “Mmm, not very much.

M “Okay.

I “I do, but not very much.

[*Sister Anastasia: “She has helped in the tomatoes though.”*]

M “Okay. And, have you seen them growing?”

I “No.

M “No? Okay...really?!”

I “mmhmm.

M “But you’ve helped out in the garden?”

I “mmhmm. Sometimes.

M “And you haven’t seen the tomatoes growing?”

[Sister Anastasia: “Oh yes you have! You’ve picked ‘em all the time! And eat ‘em.”]

M “The tomatoes?”

[Sister Anastasia: “Yeah, hundreds of ‘em.”]

I “Oh yeah, I eat them.

M “Okay, there we go. (...)” (TTD1:26.09.09)

The second participant of the North City Farmers’ Market TTD location, eight year old **Gloria**, strengthened her blind taste test preference for the locally grown tomato in her Part 2. She learned the tomato kinds, tasted both again, and then stated that the preferable locally grown sample was “really good and juicy...and sweet...softer and better” (TTD2:26.09.09). Gloria tasted the non-locally grown tomato sample differently, and in comparison said it was “a little bit tarter” (TTD2:26.09.09).

Gloria has direct, practical knowledge of tomato growing since she told about growing tomato plants with her mom. The following dialogue excerpt indicates that her perception of tomato taste has been affected by such experiential learning.

M “Tell me what you know about tomato growing...If you’ve ever experienced it, or...

G “We planted a couple tomatoes in pots. They were Roma tomatoes... And those are my favorite kind. ...I got to help my mom plant them. And, I got to pick them.

M “When you get to taste these now... Do you think that you...can tell the difference because you’ve helped your mom grow tomatoes, or you’ve actually worked with tomatoes and seen them ripen?

G “I don’t know. (...)Like the apples... we went apple picking, and the man said they would pick the apples... My mom didn’t like Gold Delicious last year until she tried one that...wasn’t picked way before it was ready. ‘Cause they get all their sweetness from the tree.

M “Okay. That’s for apples...”

G “But that’s like how much different it is.”(TTD2:26.09.09)

The difference between the tomato samples, for Gloria, was likened to an experience of apple-picking. Gloria’s recollection expressed how her understanding of sweeter tomato taste was learned. She justified her TTD tomato evaluation by referencing a shared taste experience with her mom when she learned that eating readiness of fruit, in general, resulted from certain picking conditions. Though she did not say to perceive a difference of the two tested tomato kinds because of her direct tomato growing experiences with her mom, Gloria implicated that her tomato evaluation was affected by her *a priori* knowledge.

To explore her taste ability as a developed and knowledgeable one, I questioned her about whether or not she had liked to eat tomatoes all along. Gloria replied, “No, I just tried my Grandma’s tomatoes that she had planted, that we gave to her. ...they were better. And I had never liked tomatoes before, until I tried them” (TTD2:26.09.09). The fact that Gloria can taste this specific kind of food positively at all originates from the specific memorable experience of eating her Grandma’s homegrown tomatoes. Gloria’s developed taste enables her liking tomatoes as a food object. But not all tomatoes are preferably good ones for

Gloria. It is also conclusive by analyzing her TTD that Gloria's taste preference for the "locally grown" kind of tomato was cognate to learning how sweet flavor results from fruit picking conditions, which she knows by direct, practical experience. Gloria's TTD tomato judgment was pronounceable for her fuller taste ability. Her dialogue is data supporting the claim that "taste" happens as a sequential phenomenon. Only after a food is *pensively swallowed*, which Brillat-Savarin supposed, can we evaluate how good it is relative to other food things.

The third participant at the North City Farmers' Market, nine year old **Anastasia**, indicated by nodding her head that she experienced the blindly tasted tomato samples differently. For Part 2 of Anastasia's TTD, the labeled tomatoes were revealed. After looking at each sample skeptically, Anastasia ate the piece of tomato "locally grown", and in the process she cross-eyed with facial expression of pleasure. Anastasia described her taste experience of this tomato that was sourced from the 13th Street Community Garden: "This one is definitely a lot sweeter. (...)It also has taste in it" (TTD3:26.09.09). Evident as the contrast of tomato taste experiences, Anastasia perceived them differently. And, while not explicitly stating preference for sweet flavor, her description of the non-locally grown tomato suggested such. Anastasia tasted the piece of Schnucks-bought tomato and said it was "sour, and (...) not very good" (TTD3:26.09.09).

Anastasia witnessed the TTDs of both Gloria and India and her own Tomato Tasting Dialogue included the off-camera comments of these two. She was not visibly or audibly responsive to these, and so they may not have influenced Anastasia's experience of taste. Yet, it's worthy of noting since my theoretical account of the phenomenon posits that we are able to taste, partly, for a social factor. By echoing India and Gloria's tomato flavor descriptors, Anastasia's dialogue did confirm the certain taste-able (chemical) quality of the two tomatoes. And, Anastasia's preference for the sweet-tasting tomato proved a commonly liked tomato flavor.

Anastasia has direct, practical knowledge of tomato plant growing since she told about being active with the tomato plants of the 13th Street Community Garden. It was evident from her Part 2 TTD explanation, that this experience provided Anastasia with discoveries factoring importantly for her taste ability. In the following excerpt, Anastasia illuminates her understanding why she did perceive qualitative difference of the tomatoes tested.

A “This one (the NLG) probably didn’t get as much attention. Because...one of the things with plants is that they need attention. Not just like you’re sitting around, water and walk off. ...it needs [to be]...talked to, and things like that. So, that’s probably actually what makes ‘em taste better.

M “You think so.

A “Yeah, because it’s amazing we have, we go [to the 13th Street Community Garden] like three times a week and they actually get a lot of attention. We don’t just pick ‘em and walk off. We just keep pickin’ and...I think they like the energy. And these ones [*gestures to NLG tomato sample*], they’re probably just not...

M “You’ve worked in the garden where this (locally grown) one was grown. [...and] you know how they grow, and it sounds like you think they need more ‘attention’ in order to taste better.

A [*nods*] “Yeah.” (TTD3:26.09.09)

Anastasia associated a tomato growing method to perceive taste of the sampled tomatoes. From her direct, practical experience, Anastasia knows how the “better tasting” tomato results. She reasoned that a locally grown tomato kind, i.e. those from the 13th Street Community Garden, are better tasting than store-bought, non-locally grown ones as a result of differing degrees of attention to their respective growing processes.

Anastasia’s statements proved her direct, practical knowledge of tomato plant growing affected her TTD evaluation of the tomato kinds. This conclusion

is strengthened by reiterating philosopher Anscombe's explanation of practical knowledge, as the "cause of what it understands". Anastasia's actions in the 13th Street community Garden include intentional doings for the effect of better-tasting tomatoes. According to her words, Anastasia doesn't sit around, walk off from the tomato plants, and then achieve a better-tasting tomato. Anastasia has directly learned to know how a certain degree of *attention* is necessary for the preferably good tomato.

Anastasia's dialogue, as Gloria's, validated claiming generally that a personal food preference is changeable as taste perception is, in part, learned.

M "Do you think that your appreciation for tomatoes is changing?"

A "Yeah, probably."

M "Why do you think that is?"

A "Because I've been more around them, and I've been eating them a lot more."

M "Okay, so, you have chosen to eat them, but [is] your...family, also eating them more?"

A "Yeah, our family also totally eats them a lot."
(TTD3:26.09.09)

Anastasia's preference for tomato, as a good food-thing, has been developed through many tomato eating experiences. And, she may eat a tomato more often because it is her specifically influenced food choice. Conclusive by her dialogue, it is for the frequent, shared family tomato-eating experiences that Anastasia's preference for tomatoes has been socially conditioned. It is also evident that her being *more around them*—presumably in the 13th Street Community Garden—developed her positive perception of a tomato. This conclusion is supported by Kessler's research of how environmental cues affect eating behavior. Anastasia's dialogue verifies that environmental cues inform her taste perception. It can also be concluded that her repeated experiences in the 13th Street Community Garden

are affecting Anastasia's preference for specific quality of tomato. She evaluated the tomato samples further, for taste, by a visual comparison: "Ya know, even though these ones [*gestures to the LG tomatoes*] look like, a lot bruised up, [the non-locally grown] ones are actually the ones that taste bad. I mean, just because it looks bad doesn't mean it tastes bad" (TTD3:26.09.09). What Anastasia has learned from gardening the plants couples with what she has learned from prior eating experiences to cognate "tomato" taste. Anastasia's knowledge combined with her taste anatomy for enabling her perception of the tomato kinds tested.

Nadine, a three year old, was assisted throughout her TTD participation. Her older sister, Gloria, already familiar with the TTD sequence, acted as a verbal and social interpreter. Periodically during Nadine's TTD, Gloria re-phrased the research questions. And, though young Nadine participated willingly, the presence of her older sister may have been necessary for Nadine's TTD.

It is possible that Gloria influenced Nadine's tomato evaluation. After Nadine tasted both samples with her eyes blind-covered by her sister, Gloria asked Nadine: "Which one did you like better? The one that you had before?" (TTD4:26.09.09). To this, Nadine replied by holding up the empty toothpick used for the non-locally grown tomato sample. She preferred the taste of the non-locally grown one and this did *not* mimic Gloria's suggestion. Nadine preferred the store-bought tomato sample taste in both the blind and non-blind taste tests, and described it as better for its "sour" flavor (TTD4:26.09.09). Nadine's taste experience was shared with her sister, but Nadine's dialogue did not indicate that this affected her perception of the tomatoes tested.

Given her youth, Nadine had few tomato eating experiences that she could reference for her TTD taste evaluations. Furthermore, Nadine's papillae count of eleven categorizes her on Bartoshuk's scale as an insensitive, *nontaster*. Despite this, Nadine perceived tomato difference during both taste tests. In her TTD Part 1, Nadine told that sour flavor was the good tomato quality she perceived to taste.

It's likely that Nadine has some direct type of knowledge of tomato plant growing because she is Gloria's sister and shares family experiences, e.g. of growing a Roma tomato, which Gloria recounted. However, Nadine did not relate any such experiences during her TTD, and therefore was categorized as Type 4 with no knowledge of tomato plant growing. It was not for perceiving significant meaning of the tomato labels—"locally grown" and "non-locally grown"—that young Nadine could distinguish them differently. But her dialogue verified Nadine's ability to perceive two different tomato kinds.

Nadine's TTD, like both Gloria and Anastasia's, provided reason to conclude that taste is a changeable phenomenon. When asked if she has liked tomatoes all along, the three year old shook her head to show that she hadn't. Presuming the contrary, I stated the possibility that she had just begun liking them and she nodded her head in affirmation. With continued research, Nadine's perception of a preferably good tomato kind could be studied as it develops from additional experiences of tomato plant growing as well as social conditioning from her family members' taste preferences.

Nadine and Gloria's brother, **Charles**, aged six, was the fifth participant at the North City Farmers' Market. Charles voiced preference for the non-locally grown tomato sample after the blind taste test. However, it was apparent that he had been testing his very limits of preferring to eat a tomato as a food-thing. The untold fact preceding Charles' TTD participation was that he had a strong dis-like for tomato taste. Because he knowingly agreed to the research, a general food value was assumed. But during his TTD, Charles' body language admitted his negative value of "tomato". While eating the first tomato sample he frowned and winced with disgust and then looked to Gloria for support. It seemed Charles was able to completely eat the first tomato sample only with the verbal encouragement of his older sister and the additional friends nearby. Despite this, and to my surprise, he quickly continued to eat the second tomato sample! Apparently

Charles had acted to test his “taste” for “tomatoes”. The likely motivation for his participation was to satisfy a curiosity stirred by his sisters and friends who previously participated in TTDs.

Charles did not taste the tomato samples a second time. Nor did he express affect from seeing and learning the tomato kind labels in his TTD Part 2. After reflecting on the blinded taste sensations he described a texture distinction between the two. The “softness” of the store-bought tomato gave Charles a preferable tasting experience to the locally grown (TTD5:26.09.09). Charles is categorized a nontaster for a papillae count of twelve. It’s reasonable to conclude that this is not the source of his inability to describe detailed flavors of the tomato samples. So that he did not prolong a negative experience, he chewed and swallowed both tomato samples quickly. In the process, he did not cognate flavor other than “tomato”, which he did not perceive good to taste.

The socio-cultural conditioning of tastes experienced at TTD site two

The combined sequence of TTDs with the five youths at the North City Farmers’ Market provides data for the claim that personal taste is, in part, socio-culturally affected. Because it is common that taste happens in a shared experience of food, social and cultural cues contribute to personal perception of the food’s taste.

The group of five was inter-related as siblings and friends. During each one’s Tomato Tasting Dialogue experience were the others periodically present. In analysis of the data, I found that their taste perceptions may have been inter-affective by social modes of *priming* and *reinforcing*. What seemed to me as “social priming” was evident from India’s statements on the blind taste test. While India was chewing the second tomato sample with her eyes closed, her older sister, Anastasia, primed India’s taste perception. In anticipation of the research question, which was aimed to test India’s ability to taste a tomato difference, Anastasia primed her sister’s perception by saying “Is one sweet and one sour?” (TTD1:26.09.09). India’s ensuing pronouncement, audibly tentative,

had been primed. And when asked to tell which tasted better, she said: “Um, I like the sweeter one” (TTD1:26.09.09). India’s flavor descriptor verifies my analysis.

Gloria acted as a social-priming for her sister Nadine’s taste preference. While Nadine was eating the second tomato sample during her blinded taste test, Gloria interjected the questions: “Which one did you like better? The one that you had before?” (TTD4:26.09.09). Gloria watched as I prepared the tomato sample toothpicks for Nadine and so I assume Gloria knew which was which (their labels). Thus, Gloria’s second question was asked for the purpose of *priming* her sister’s taste to *reinforce* her own perception of the tomato samples. The fact that Nadine responded with a dissimilar preference of the two tomatoes does not negate my analysis that social priming happens in taste experiences. Taste, I have argued, happens for multiple factors. I assert neither, that these factors are mutually exclusive, nor that one exerts more perceptual stimulation for a person’s experience of taste.

Gloria acted also as a social-reinforcer of taste during Anastasia’s TTD. After blindly eating the two tomato samples, Anastasia confirmed perceiving difference and also stated her preference. When asked if one tomato kind tasted better, Anastasia was certain in her reply: “Yeah, this one totally does. This one’s like...blaaaah” (TTD3:26.09.09). Then, Gloria became the active witness with the off-camera comment: “I know. That one’s so gross!” (TTD3:26.09.09). By saying such, Gloria reinforced their two perceptions of the preferably good tomato. Social conditioning is an apparent factor of “taste”, with assessment of the first five TTDs of the North City Farmers’ Market.

Pearson was the sixth Tomato Tasting Dialogue participant at the North City Farmers’ Market location. She verified simple ability to taste by describing differing flavors of the two tomato samples in her TTD Part 1. However, Pearson

was not able to distinguish a preferably good tomato with her blinded taste test. The following dialogue excerpt conveys the complexity of her taste experience.

To me the second one was...kinda more like meaty flavor...more savory. The first one I liked better initially. But that was just...the initial taste. ...But maybe the flavor didn't change, like as I was chewing it. The second one...I didn't think was as good. [But] then after chewing it, it had a lot more flavor. (TTD6:26.09.09)

Reiterating the scientific theories accounted in this report can be useful to explain Pearson's experience. Tomato flavor is perceptible when retro-nasal olfaction of tomato smell combines with tasting its chemical components. And so, Pearson perceived the flavor of the second tomato sample "after chewing it".

An unchangeable factor for Pearson's taste ability is her tongue anatomy. She is categorized on Bartoshuk's scale as an average taster by her 19 papillae counted. Pearson couldn't which tomato was preferably good from her blinded taste test. But, Pearson could state her tomato preference *after* the labeled tomatoes were revealed and she tasted the two. Though she was able to differentiate tomato tastes in both her TTD Parts 1 and 2, it was only after the additional socio-culturally meaningful information was learned in Part 2 that she did state preference for the "locally grown" tomato taste.

The excerpt from her Part 2 dialogue includes Pearson's description of a complex perceptual experience.

M "What are you getting in, in that taste experience of these two tomatoes?"

P "Okay. Um, I guess, again [the "locally grown" tomato] has more flavor initially. ...And then I probably would prefer to eat it, *knowing that it's local*. And then *knowing that [the "non-locally grown" tomato] came from Schnucks*, I probably am...more critical of...the flavor of the second one, as like, not being there at first... When I first tried it, I wasn't sure that it was... I mean you told me it was tomatoes so I believed that it was a tomato, but it didn't taste like a

tomato at first. And...after I chewed it for awhile I was like ‘Oh yeah, this is a tomato’. But I guess it took me a little while to register that.” (TTD6:26.09.09, emphasis added)

Clearly, “taste” is not a simple sensory effect. It wasn’t only for Pearson’s physiological *wholfactory* that she could evaluate the tomato kinds. Pearson’s description of her TTD tomato tasting experience highlighted the cognitive aspect of her taste ability. The dialogue serves the argument that the phenomenon of taste is not simply a personal sensation of a food, but a sequential happening that requires a person’s thoughtful judgment of a food. For Pearson, the good “tomato” taste changed when it was perceived as a more or less socio-culturally meaningful “food” symbol. The “locally grown” tomato did, in fact, have more flavor initially and, she preferred to eat it, *knowing that it was local*. Furthermore, she tasted the “non-locally grown” tomato flavor *more critically* for knowing that it came from a grocery store.

The fact that Pearson perceived taste of the tomatoes in a complex sense process was evident. Her knowledge of tomato plant growing was ascertained. And in the following dialogue excerpt it was evident this factored for her taste of the tomatoes tested.

P “Growing up, a lot of my friends’ parents grew tomatoes. Where I lived we couldn’t really grow anything...except, I did try to grow a tomato plant in a pot one time. And I think maybe I got a couple tomatoes out of it, but it wasn’t hugely successful. ...I prefer to eat tomatoes if they came from like a smaller, like not from the grocery store. ...But...the growing process I don’t really know a lot about.

M “Did you get to, like, see the tomato gardening that your friends’ parents had so that sort of registered with you?”

P [*nods*] “Right. ...It was just a home garden, so I mean, I knew it couldn’t be, like, it didn’t have to be a big, commercial thing because they had great tomatoes and they grew a lot of them...they were just in my friends’ backyard. ...I would go there several times a week, and *I saw them*.

M “Do you think that that, um, that experience has enabled you to discern between these two in any way?”

P “I think that maybe just having seen homegrown tomatoes or like, local farmers market tomatoes...you look for a different color of a tomato. ...If I go to a farmers market and I see [*gestures toward the NLG tomato sample on display*] a tomato that’s more yellow, I think I associate it with...a grocery store tomato. Because they usually have...that color. So I usually look for a little bit more pink color *because that’s what I’ve associated with my homegrown tomatoes*. ...just like more irregular shapes...is what I’ve usually seen on like plants...So, if it looks like a perfectly round tomato then I’m less likely to want to pick it up.

M “Okay. So when I unveiled these [*refers to the two tomato types on display*] and you looked at them, and you said something...and after I told you where they were from...you said maybe you were fooling yourself. Is that starting to play into... ‘...which one should taste better?’

P “...I was not surprised to know that the first one was the local one, and then the second one, um, I think I was sort of laughing at myself because I assumed that because we were at the Farmers’ Market, then it was probably a farmers market tomato that I was trying... Then I was like: ‘Well I probably shouldn’t have...’I was trying really hard to get a flavor out of it because I was like: ‘It’s gotta be a good tomato, it’s from the Farmers Market’. So I just wasn’t surprised to know that’s what the difference was. So maybe that’s why I had to search for that flavor.

M “...And, did it—when you found out where it was from—like, affirm the taste experience for you?”

P “Yeah... I know that I’ve had some good tomatoes from a grocery store, but typically I just think, I usually pass them up thinking they’re not gonna be very good. So...it just sort of confirmed that experience with previous experiences with tomatoes, anyway. Or, like, my preference for homegrown tomatoes.” (TTD6:26.09.09,)

Pearson’s knowledge of tomato plant growing is a Type 1, direct and practical sort, evident from her recollection of attempting to grow a potted tomato plant. It

is a memorable tomato growing experience for Pearson and contributes to her knowledge of a tomato growth process. However, it may be that Pearson's additional experiences factored more significantly for her evaluation of the tomatoes tasted. She has a direct yet non-practical knowledge of tomato plant growing achieved from perceptual experiences of her friends' backyard gardens. Her memory of this causes a specific understanding of tomato quality in relation to growing conditions. A specific statement recorded in her dialogue verifies this fact. Pearson said, "It didn't have to be a big, commercial thing because they had *great* tomatoes and they grew a lot of them. ...they were just in my friends' backyard. I would go there several times a week, and I saw them" (TTD6:26.09.09).

Pearson is motivated to eat a tomato for reasons including taste, health, and aesthetic values of the food choice (TTD6:26.09.09). But, Pearson's dialogue indicated that her choice amongst tomato kinds is motivated by specifically informed taste preference. She expects a certain, preferably good tomato flavor in a locally grown kind as a result of learned tomato-eating experiences. Pearson's Part 2 TTD experience simply confirmed why she preferred the taste of one tomato kind compared to another. It was for practically knowing how great-tasting tomatoes are grown—locally—that she did perceive the "locally grown" tomato sample as the preferable one.

Pearson was a TTD participant who also testified to a changing taste, and her dialogue suggests the socio-cultural factor influencing this.

M "Have you always enjoyed eating tomatoes? Was there a period where you didn't?"

P "Yeah, when I was younger I was really sensitive to textures. So I didn't like the inside of the tomato...where it's like gooey and seeds. So, I wouldn't eat it...and then I started eating plain tomatoes when my mom started getting tomatoes from this guy who grew tomatoes in his backyard down the street. And she would make tomato sandwiches. And they tasted really good." (TTD6:26.09.09)

With her this memory, Pearson gave additional reason why the tomato label “locally grown” was significant to her evaluation for the preferably good one. The words cued Pearson’s memories of the exemplary, good-tasting tomato. Pearson experienced the tested locally grown tomato as like those she knew grew in her neighbor’s backyard that were served by her mom.

The final Tomato Tasting Dialogue participant at the North City Farmers’ Market location, **Euylan**, quickly asserted his perception of tomato differences after blindly tasting the two tested. He described the locally grown tomato with the words “natural sweetness” and “ripe” (TTD7:26.09.09). Euylan contrasted it to the non-locally grown one, which he perceived as “more acidic” and “not as ripe” (TTD7:26.09.09). Euylan speculated for the latter that it was a tomato grown from an “over-watered plant” (TTD7:26.09.09). His comment reminded me of participant Anastasia’s dialogue. She wagered that the locally grown tomato tasted better than the non-local because of a difference of tomato plant care respectively. Anastasia used the example of watering tomato plants, and referenced her direct experiences in the 13th Street Community Garden, to explain how varying “attention” to the tomato plants affects its fruit (TTD3:26.09.09). Both Anastasia and Euylan attributed negative tomato taste quality to a less attentively watered tomato plant.

Euylan claimed “more than normal exposure to tomatoes” due to his tasting countless tomatoes during his education and work as a Chef (TTD7:26.09.09). He told that this had been necessarily so, for his very profession entails ability to discern the “good tomato”. Euylan’s perception of a good tomato comes more easily than many others, and this was evident by his TTD assertions. When Euylan was asked to taste the two tomato samples again after they were revealed for his TTD Part 2 he quickly replied that it was not necessary. Euylan explained that his memory coupled with the additional sensory

cues—sight and smell of the tomato samples—provided sufficient information for his knowing the taste of the two tomato kinds.

With visual assessment of the revealed tomato samples, Euylan pointed out the fact that the non-locally grown tomato wedge had “more of the seed-jelly and not so much tomato flesh” (TTD7:26.09.09). After looking at the locally grown tomato sample for comparison, Euylan brought my attention to its more fleshy matter between the skin and the seeds. Euylan told me he learned this was an indicator of a tomato’s maturity in its growth process. He said that more “sweetness” is contained in the mature flesh of a tomato (TTD7:26.09.09). Euylan perceived the locally grown tomato’s natural sweetness during his blinded taste test. Because taste is variously stimulated and informed, Euylan could reaffirm this in his TTD Part 2 without re-tasting the samples. Then, in order to perceive the locally grown tomato taste, he looked at its flesh and associated his a priori knowledge of tomato quality.

Euylan has indirect knowledge of tomato plant growing. He told that he has learned about the process of growing tomatoes during cooking school. Euylan added that he has witnessed friends growing tomato plants. Such perceptual experience, however minimal, may corroborate his indirect type of tomato plant growth knowledge for his ability to evaluate a tomato fruit quality such as ripeness.

His papillae count of 17 categorizes him on Bartoshuk’s scale as a low-average taster. It is obviously not his mouth anatomy alone that accounts for his ability to discern tomato value. Euylan’s TTD is a clear case for the thesis claim that taste is knowledgeable. Trained as a professional Chef with theoretical and practical learning experience, he knows what qualities to *look* and *taste* for, which make a good tomato. Euylan knows the taste effects from certain tomato kinds because his perception of these is learned.

Euylan’s TTD included his professional advice on choosing tomatoes for the intention of experiencing good taste. He stated that a tomato from a Farmers’

Market, or one that was vine-ripened, would taste best. Euylan submitted that “store-bought tomatoes, which taste ‘okay’, are fine for an everyday sandwich” (TTD7:26.09.09). Because they are a “commodity food”, he said, store-bought tomatoes last longer than Farmers’ Market tomatoes, which are picked ripe and perish within only a couple days after purchase (TTD7:26.09.09). Euylan further acknowledged qualitative difference between locally and non-locally grown tomatoes with such statements. Euylan’s TTD included description of the taste distinction he experienced but not his taste preference for the two tomato kinds. And, despite declaring the inferiority of the “non-locally grown” tomatoes, Euylan bespoke support for this store-bought kind. Though seemingly contradictory, this was reasonable. Euylan’s paradoxical advice is precisely for securing his job to create foods that effect a person’s taste experience. That he is more able than most people to create a better-tasting sandwich is necessary for Euylan’s professional success. With this analysis, Euylan’s TTD was similar to Ellen’s for illuminating reasons why social-conditioning of food taste occurs.

Euylan’s indirect knowledge of the tomato growing process factors for his ability to taste tomatoes, but his perception of a tomato taste may not necessitate ethical consideration. Euylan’s dialogue suggested that perceiving a “good tomato” isn’t always a preference for the *moral* food. And, the right tomato may not necessarily be the good tasting tomato. For Euylan’s profession, any tomato, whether locally or non-locally grown, offers a minimal quality of natural, tomato-ness. Euylan is able to use a tomato-thing to affect a good taste without regard to *how* and/or *where* it’s grown. His customers are simply interested by an expected positive “tomato” eating experience, and presume his knowledge of the fact by virtue of his profession. For Euylan, however, a tomato’s value is made simply by its being a certain-flavored food thing, not by the place it was grown or the methods used to grow it. He is successful as a Chef when he is able to create “good tomato” by combining foods with an any-tomato taste quality.

Maplewood/Richmond Heights Memorial Library

Ted was the first participant at the third Tomato Tasting Dialogue location: The Maplewood/Richmond Heights Memorial Library. Blinded to the tomatoes tested, he tasted “not much difference” between them. Nonetheless, Ted stated preference for the locally grown one because “it tasted a little more juicy and flavorful” (TTD1:01.10.09). The tomato samples were revealed in his TTD Part 2, and Ted tasted them again after learning about their identifying labels. The following dialogue excerpt indicates that Ted then perceived a greater difference of the tomato kinds.

There’s even more of a taste difference. That one doesn’t have nearly as much flavor [*Points to the ‘non-locally grown’ labeled tomato on display*]. ...The [locally grown] is juicier, more flavorful. Actually these taste...the (NLG) one on the left tastes like the kind you get when they’re out of season. You know what I mean. The one’s you can buy because they’ve been picked fairly green somewhere else, and shipped into St. Louis or wherever...Whereas this [*points to the ‘locally grown’ labeled tomato on display*] tastes more like a vine-grown one that’s been allowed to ripen on the vine. So that’s what I meant. (TTD1:01.10.09)

Ted’s dialogue provides data to validate the general assertion of this research project that a “taste” perception happens for multiple factors. Ted tasted samples cut from two different tomatoes, but the same tomatoes were used repeatedly, for both his blind and non-blind tests. The food kind “tomato” was controlled for the TTDs. The visual tomato qualities and labels, which distinguished the tomatoes as socio-culturally meaningful kinds, were variables to test for “taste”. Evidently, after seeing the sampled tomatoes and their labels, Ted’s sensual ability was strengthened. Ted’s tomato taste evaluation recorded in his Part 1 was positively reinforced, and further stimulated, by the additionally cueing variables of his Part 2 test.

It is evident from his dialogue that Ted's very "tomato" perception has changed during his lifespan of 82 years.

T "We grow tomatoes every year in our backyard. We grow both, a few of the larger ones [*points to the tomato kinds on display*]. We grow more of the smaller ones, which are so-called cherry tomatoes. And those can be very flavorful. Ah, sometimes it's easier to get a more flavorful cherry tomato—in or out of a store—but particularly in the backyard; they're easier to grow. But I've eaten tomatoes all my life and I think it's harder to get the kind of tomato flavor that I remember both when I was a boy and young man, and so on. And I don't know whether that's because of my taste buds, ya know, I'm older, or it's because most of the tomatoes I eat, we eat, are picked earlier. Ya know they really aren't fully vine-ripened.

M "Okay, so...you ...are really orchestrating the tomato growing, and I suspect that you allow [a tomato fruit] to go as long as it can on the vine.

T "Oh absolutely. Matter of fact, they stay there so long the squirrels get 'em.

M "The taste is still not evoking a better flavor that you recall from childhood?

T "No it doesn't. No it doesn't.

M "That earlier age tomato taste that you recall...where is that from? Is that from a family garden or... [a specific] context...?

T "That's a good question. ...When I was a boy I worked at a grocery on weekends and they had tomatoes there. I remember those tomatoes as being very flavorful. Now, I may be misremembering, but I have another more vivid memory that I'll tell you about. And that is, my wife's mother was a superb gardener. And they lived on a one-acre lot out in the county. About the lower fifth or fourth of that acre was all in vegetables that she would plant. And there were a lot of tomatoes. ...And we'd take our children out there on a Saturday or Sunday...and she would serve 'em at lunchtime. And cut a big tomato, and cut it in slices. And

then serve it on a platter, with vinegar and oil dressing and with Bermuda onions. And it was just superb! And so, no, I haven't. I don't think I've had tomato flavoring since. Now again, it may be a combination of, I was a lot younger then, and my taste buds were ya know, really primed to go. ...So, that's the story." (TTD1:01.10.09)

Ted has direct, practical knowledge of tomato plant growing given the account of backyard gardening with his wife. As told in dialogue, they grow tomatoes and allow them to remain on the plants as long as possible for the intention to achieve a certain tomato taste: a "vine-ripened" tomato flavor. Despite endeavoring this, Ted admitted to not experiencing any tomato kinds, in general, as having the kind of tomato flavor that he tasted previously.

As stated in his TTD, for Ted no tomato kinds have the exemplary flavor that he remembers from certain tomato eating experiences. Ted's dialogue suggested that tomato-ness has changed for a modern tomato. Ted's older age, as he suspected, may affect his physiology in such a way that factors for his changed perception of a modern "tomato". Ted's TTD papillae count was 10, and this categorizes him as below average in taste sensitivity. According to Bartoshuk's research on tongue anatomy, the sense of taste changes little with age, for a change in taste buds (Bartoshuk 1998:29). Olfaction, however, steadily declines, and the probability for disease susceptibility, which may affect physiological factors of taste ability, does increase with aging (Bartoshuk 1998:29). However, physiological changes per TTD participant in relation to changed taste perception cannot be proven by this research project's methods. Neither can this project validate that the very chemistry of "tomato" kinds—similar to those tested by the TTDs—has changed during Ted's lifetime.

What was illuminated by this project's data is the fact that participant Ted's increased age relates to an increase in memories of tomato taste experiences. The strength of a specifically remembered "tomato" perception was importantly referential for Ted's assessment of the tested tomato samples. The

previous dialogue excerpt indicates that Ted’s idea of an exemplary tomato is based in the memory of tasting tomatoes his wife’s mother grew. Ted described his wife’s mother as a “superb gardener”, and recalled the tomato plant growing conditions he perceived (TTD1:01.10.01). To strengthen his Part 1 tomato distinction Ted recalled from his direct knowledge that a “superb” tasting tomato results from growing conditions like his wife’s mother’s garden. Ted interpreted the label “locally grown” as signifying tomato plant growing conditions like his wife’s mother’s garden.

Ted knows tomato-ness in part for his given anatomy to taste such qualities inhering in a certain food thing. But his taste preference for a certain kind of tomato was pronounced in Ted’s TTD because of a learnable factor of his taste ability. Ted’s preference for the “locally grown” tomato was the effect of his direct types of knowledge of tomato plant growing coupled with associated memories of positive tomato tasting experiences.

Janet was the second TTD participant at the Maplewood/Richmond Heights Memorial Library location. She described both the non-locally grown and locally grown tomato samples as “good” tomatoes after blindly tasting them, but said this was simply because she likes tomatoes (TTD2:01.10.09). Janet did differentiate the two by describing her taste preference for one tomato in a comparison. Janet preferred the locally grown tomato after both taste tests because it was “more ripe” and “melted in [her] mouth” (TTD2:01.10.09).

Janet’s papillae count was over 34; therefore she is categorized with above-average taste sensitivity. It was evident by her TTD that Janet’s “super-taster” anatomy was only partial factor for her ability to distinguish the tomato kinds. Janet’s learned experience is an evident factor for her tomato taste perception.

M “When you tasted these [tomato samples] was there any association with...

J “Home-grown tomatoes...

M “...your experiences?”

J “...yeah.” (TTD2:01.10.09)

Janet’s testimonial corroborates the fact that taste is a phenomenon affected by previous practical experience. However it was not clear *which* of Janet’s practical experiences with “home-grown tomatoes” factored primarily for her tomato taste tests.

Her Part 2 dialogue proved that what Janet has learned to value as a preferably good tomato is based partly on her direct experiences of growing tomato plants. Janet told that she has grown on her apartment balcony a similar type of tomato to those tested by the TTD. To Janet, a tomato is preferably good as she perceives it “more ripe” (TTD2:01.10.09). This ripeness, she has learned, is a degree of a tomato red-ness combined with its moisture and textural qualities. Janet distinguished the locally grown tomato as preferable to the non-locally grown sample because the former was more similar to her analog of good tomato taste. Thus, Janet’s direct, practical knowledge of the tomato growing process affects her sensation of a “tomato” as well as her ability to evaluate tomato quality.

Similar to Janet’s assessment, participant **Greg** asserted that both blindly tasted tomato samples were “good” to taste. While perceiving both kinds as good, he, like Janet, was also able to differentiate the tomatoes. Greg described his blinded experience of the tomatoes during which one tasted preferable: “This one tasted much better; more flavorful. This tasted like a summer tomato. This one tasted like one you get in the wintertime...it’s kind of...not as flavorful” (TTD3:01.10.09). For Greg, preferably good tomato flavor results from his tasting a specifically seasonal kind of tomato. His statements imply taste experiences of tomatoes throughout the seasons of a year. Greg associated his

blinded taste of the locally grown tomato to a summer tomato likeness. Greg experienced the non-locally grown tomato like a wintertime one, which, he asserted generally speaking, is less flavorful than a summer tomato.

Greg confirmed his preference for the “locally grown” labeled tomato after the samples were revealed and he taste tested them a second time. During his TTD Part 2, Greg acknowledged certain visual quality differences and further described the distinct flavor and texture of the tomato kinds. His taste experience of the tomatoes was a multi-sensual stimulation, and his TTD revealed that multiple factors enabled Greg to experience the “locally grown” tomato as the preferably good one to taste.

In addition to his given physiology for taste, the changeable factors of knowledge type and socio-cultural conditioning were accountable by analysis of Greg’s TTD. Greg’s Type 1 direct, practical knowledge of tomato growing was qualified by the following story told.

As a kid I grew up in the suburbs, so I think one summer I planted some vegetables. My mom got me some seeds and I had tomatoes and carrots. But...that was that with tomatoes. ...My wife—we live in a condominium right down the road now—does container gardening. So she’ll plant tomatoes in a pot, ya know, instead of in the ground. ...But nonetheless, being from around this area, growing up over in Alton, Illinois (...) every summer we would have boatloads of fresh, locally grown tomatoes that we would pick up. But the farmers’ stands...you just drive... down a country road and you stop off, and ya grab a bag of tomatoes for just a buck-fifty or whatever. And then you’d go home. And they’re wonderful. So...*all my life I’ve been keenly aware of good tomatoes in the summertime versus the store bought stuff in January, which, isn’t really any good.* Ha ha ha. (TTD3:01.10.09, emphasis added)

The italicized sentence in Greg’s story indicates an understanding of tomato quality. Greg implies that his “keen awareness” of good tomatoes in the summertime has been for his varied and lifelong direct experiences of the

seasonal tomato growing process. Greg’s direct, practical knowledge of tomato plant growing derives in a limited childhood experience. It is conceivable that, if Greg had not additionally experienced his wife’s tomato growing and the childhood perceptions of “boatloads” of “wonderful” summertime tomatoes from local farms, then his more limited Type 1 knowledge of tomato growing could not so keenly affect his taste for the locally grown tomato. Greg’s non-practically derived knowledge of a summertime tomato is clearly significant for his pronounced taste preference.

Greg’s “taste”—as a perception of a preferably good food—motivates his “tomato” choice. The relevance of Greg’s direct type of tomato plant growing knowledge to his “tomato” choice was evident as the continued dialogue:

M “Do you continue to buy [tomatoes] at that [January] time?”

G “Oh yeah, yeah, we eat *many more tomatoes in the summertime*. Um, and then in the wintertime, ya know... If I get a hamburger and it comes with a slice of tomato and it’s February, I just take it off, and don’t waste my time. It’s just mush. It’s no good.” (TTD3:01.10.09, emphasis added)

The fact that both tomato samples tasted good to Greg yet he stated preference for the locally grown sample correlates to his *seasonal* tomato choice. He may prefer to eat a “tomato”, as a general kind of food, but only prefers the “taste” of a tomato in the summertime. Thus argued, Greg’s choice amongst tomato kinds is motivated by his intention to eat not any tomato-good, but one he reasons to taste good.

Greg knows a good-tasting tomato conclusively for the multiple factors of his “taste” ability: his given anatomy, his knowledge of tomato plant growing, and his socio-culturally conditioned “tomato” analog. The following dialogue excerpt explicitly proves that his direct knowledge of tomato growing and memories of seasonal tomatoes enabled Greg’s taste perception for the TTD.

M “So, when you tasted these two different tomatoes...you had these past experiences with knowledge of tomato growing, and...family experience with getting all these locally grown farmers’ tomatoes... did you make that association when you tried those in the blind stage of the test?”

G “Yes I did.

M “And then, on to the visual cues as well.”

G “Mmhhh. In the blind tasting, I could taste the difference from both a taste perspective and a texture perspective as well. ...the store-bought tomato was more firm...less juicy...and a little bit more mealy... Whereas...the locally-grown tomato was more juicy, more of a natural texture. I liked it a lot better.” (TTD3:01.10.09)

St. Louisan Greg’s tomato choice may be positively ecological when motivated by his preference for a known “locally grown” kind of tomato taste. When Greg reasons to expect that a grocery store available tomato does not taste good like a “locally grown” summertime tomato, he will be less motivated to choose it for eating. And, therefore, he would not be choosing a kind of tomato that is more ecologically negative—having been grown and transported from a distant, industrial farm operation.

Terry, a sixty year old professional caretaker of the St. Louis elderly, was the fourth and final participant at the Maplewood/Richmond Heights Memorial Library. Like TTD participant Ted there, Terry said to have difficulty perceiving a taste difference between the two blindly tested tomato samples. He did taste a quality shared by both, evident by the following recorded description. “I’m growing my own tomatoes, and [both the samples] were more like ‘Roma’ tomatoes...which are a bland type of tomato” (TTD4:01.10.09). Terry referenced his own-grown tomatoes to compare and contrast the tested ones. “Blandness” was attributed to both and he compared the tested kinds to taste of Roma-type

tomatoes. Terry contrasted that flavor to his tomatoes. His prior tomato perceptions factored prominently for Terry's evaluation of the TTD tomatoes.

Terry did not say to distinguish the tomato samples after his blinded taste test, but his perception of them changed during his TTD Part 2. After the labeled tomatoes were revealed Terry seemed immediately stimulated by the additional test variables. Unprompted, he described certain visual quality differences of the two tomatoes. This acknowledgement was recorded as the following:

[That] one on the right looks like an heirloom [*points to the "locally grown" tomato sample on display*]. And the [non-locally grown] one on the left looks like something from the store. So that's just my opinion by looking at 'em. ...In fact the one from the store is not quite ripe yet, according to my taste buds. Or, to my eyes' taste buds. [...The non-locally grown tomato] is lighter. (TTD4:01.10.09)

Similar to participant Greg, it was evident by Terry's dialogue that his tomato evaluation was affected by the visual cues. But Terry's statements not only imply that tasting the tomatoes was a multi-sensory experience. It was conclusive from his dialogue that Terry's ability to distinguish the tomato kinds *necessitated* the additional stimuli.

The additional information of his TTD Part 2 clearly effected Terry's non-blind "taste" of the tomatoes. The following dialogue exchange recorded this fact: Terry registered a changed taste perception of the two tomato samples after his seeing the labeled kinds.

M "...try these again [and] tell me more about what you taste in these.

T "I'll look at 'em both. This one looks like it'll taste better [*refers to LG tomato sample, and then eats it*].

M "Why is that? What do you associate with that look...?"

T "Memory. (...)My neighbor's best tomatoes last year were that color. It doesn't have as good of flavor as his

did...there's not much to it. Now I'll try this one [*bites and chews NLG sample*]. Now that has a lot less flavor than I expected. It's almost a nothing tomato. They were very similar the first time, now it's less." (TTD4:01.10.09)

Terry's TTD recorded that he was visually cued for his taste perception. He stated expecting the locally grown tomato sample to taste better because he saw its similarity in color to those he previously, directly experienced—and so, knew—as his neighbor's "best". While Terry bespoke experiencing neither tomato sample as he expected, clearly, his perception was changed by the added test variables. Terry's non-blinded test effected a distinction between the two tomato kinds, which he was not able to assert after the blind tasting.

Terry's knowledge type of tomato plant growing was ascertained for analyzing the relationship between the tomato labels tested—"locally grown" and "non-locally grown"—and his taste perception. Terry referenced a general variety of information sources and experiences granting him tomato growth knowledge. Because he told about actively growing tomatoes in his backyard, Terry is granted direct, practical knowledge of the plant growth process. His indirectly learning about tomato growing contributes to Terry's understanding of tomato quality, e.g. of "ripeness" as a color that is perceived visibly. Terry's differentiating taste experience however was a function of his direct, practical knowledge of tomato growing. This was evident from Terry's verbal reaction of surprise to his perceptibly changed taste, which he experienced in eating the tomatoes for the non-blind test. Terry is categorized as an "average taster" by the count of his papillae for his TTD Part 3. His given anatomy enables Terry to taste "tomato", but his distinguishing the tomato kinds was effected by learned factors.

Like the three participants preceding him at the Maplewood/Richmond Heights Memorial Library TTD location, Terry's statements pointed out that previous positive tomato eating experiences factored significantly for his

evaluation of their taste. Terry associates specific memories while tomato eating for verifying good “tomato” value.

M “Have you eaten tomatoes all your life? Was there a period where you didn’t like tomatoes?”

T “Um, in the winter I don’t like them as much.

M “But there wasn’t a phase of your life when you...

T “No.

M “...didn’t like tomatoes, and there was a change. It sounds like it’s more of a time of the year that you don’t like them.

T “Mmhmm. ‘Cause they’re fresh from the garden. I did enjoy—I can’t remember the name of the restaurant—but I did enjoy (...) a tomato, with vinaigrette (...) about forty years ago (...) it was really good. I was with people at that time, and I’m all alone now. It makes a difference.

M “yeah, yeah. Those certain taste experiences are socially and culturally...

T “Oh when your grandmother serves it at a table full of people and you’re all havin’ fun, whatever it is...although anything fresh from a garden is much better, in my mind. As long as you work hard on something it’s probably gonna taste good just because you worked on it, for that matter. (...) And memory, the more energy that goes into the memory, the more connections it has.

M “And what is it about certain tomatoes that makes that certain memory more powerful?”

T “Emotions.”

M “So, emotions, are they triggered by a chemical structure of this tomato versus this tomato [*points at the two different tomatoes on display*]? [Or,] me versus Grandma serving it?” (TTD4:01.10.09)

Indicated in the previous dialogue excerpt, Terry reasoned that a tomato taste good relative to one’s working to grow the tomato plant. In his mind a tomato

fresh from the garden is preferable. Terry is knowledgeable of the fact of garden-fresh tomatoes tasting preferably good because he has intentionally grown tomatoes himself. Because of previous positive experiences, Terry was able to register the fact that a tomato has remained a preferably good thing to eat throughout his life. Terry's tomato preference, however, does change relative to the season of eating it. In the previous dialogue excerpt, Terry indicated also that his choosing a "tomato" to eat is motivated by his learning.

Terry's taste experience was primed by the TTD research introduction. He expected to taste "tomatoes". His blind tasting of the tomatoes confirmed his "tomato" analog. Despite such verification, Terry's taste perception changed with the additionally effective visual stimuli and tomato identification during his TTD Part 2. Similar to other participants, Terry's TTD tomato "taste" evaluation happened through social and culturally conditioned memories of tomatoes. *That* Terry did associate a direct, practical type of knowledge of tomato growing, as well as memories of certain experiences of good tomato kinds, to his TTD was evident in dialogue analysis. *How* this cognition happens for Terry's taste perception is not necessary to make conclusions for the thesis. Distinguishing the tomato samples was Terry's perceptual experience and evaluation of their different tastes. Like other participants, Terry's TTD tests verified the hypothesis that multiple factors effect a complete perceptual experience of taste.

Downtown St. Louis YMCA

Participant **Thomas** made a cognitive factor of his taste experience explicit. Explaining his blinded test, Thomas noted "They both tasted like tomatoes. ...And I was thinking...the texture was like tomatoes. So I think they really were tomatoes" (TTD1:13.10.09). For Thomas, "tomato" value derived in thoughtful reflection for the familiar taste and texture he experienced in the tasting. He implicated an analog for "tomato"—the qualities of tomato-ness he collectively knows from previous experiences.

Thomas' attention was noticeably cued when the tomatoes were revealed for his TTD Part 2. Then, Thomas moved his body to peer closely at the display of labeled tomatoes. After tasting the two tomato kinds the second time and non-blinded, Thomas described his experience as follows.

The same one still tastes better. ...What you told me reinforces this to a certain extent, because, what I didn't say—on the blind test—but what I was thinking when I ate that (non-locally grown) tomato selection was 'It tastes like a perfectly ordinary grocery store tomato'. ...This [*points to the non-locally grown tomato on display*] to me is bland. It doesn't have a whole lotta taste, but it does taste like a tomato. It's prettier to look at, but it leads me to think that it's a mass-produced tomato, for mass sale and distribution. So it's a little less interesting. ...So visually, I might think that (NLG tomato) was gonna taste better, but then I'd think 'Well I dunno, that might be a little too perfect', so maybe this one [*peers closely at the LG tomato sample*] has more of a 'homegrown'... And sometimes those are more interesting. (TTD1:13.10.09)

For thesis-relevant analysis, I interpreted Thomas' words "more interesting" to mean "preferably good". Thomas indicated that the preferably good tomato taste he experienced blindly was reinforced by the added variables of his TTD Part 2. Seeing the tomato objects further stimulated Thomas' experience. The worded tomato labels also affected his perception of the tomatoes tested. His 65-year old physiology might affect participant Thomas' ability to differentiate the tomatoes, but this was not conclusive by the TTD as data. However, it can be concluded from his dialogue that physiological aging factors for a change of Thomas' taste for tomatoes. In the following dialogue excerpt, Thomas reveals the certain experiences that factor for his perception of a preferably good kind.

T "I have a daughter who grows tomatoes. I have a couple of daughters who grow tomatoes. Yeah, and one...is a serious vegetable gardener. So she's very proud of the tomatoes she grows. So that affects me. ...I think when I was a child we probably grew tomatoes at one point or

another, I know I picture the stakes that people put in the ground...the tomatoes grow on the vine, and keep ‘em off the ground. Um, it seems to me that when I was a kid, my parents and aunts and uncles and adults who went with ‘em, spent entire summers talking about how good the tomatoes were. And if the tomatoes weren’t good, the whole summer was just a bust, was just ruined.

M “The meaningfulness of the tomato drama was sort of put on you, did that carry over into your adult years so that there’s some importance to the tomato...”

T “No. I thought it was funny. Why would you put all this importance on a tomato? But now, I think as I’ve gotten older, my tastes have been *developed*. I always liked to eat, but I think I’m *more interested in good food* now—whether, tomatoes for instance, are really even worth buying and worth eating. So if I go to a restaurant that has, ya know, a really good heirloom tomato salad or something, I think that’s where it’s good. I don’t generally buy tomatoes from grocery stores because to me they’re so often just color in food. To me there isn’t much taste.” (TTD1:13.10.09)

Thomas has direct knowledge of the tomato growing process given that he witnessed growing tomato plants. While not a *practical* understanding, such experience contributes to his perception of a good tomato fruit quality. Thomas’ TTD evaluation of the tomatoes was enabled by certain memorable experiences. Though he said that the seasonal tomato dramas of his youth do not affect his thinking a tomato is a good food, he acknowledged that the tomato growing of his two daughters affects him. And, because of the social conditioning of his tomato perception from the influence of his daughters’ growing them, Thomas positively values a “homegrown” kind of tomatoes. Thomas preferred the taste of one tomato in the blind test and said this was reinforced after he was visually cued, informed, and tasted them again. Thomas perceived the taste of the *locally grown* tomatoes preferable from interpreting social meaning of the label. Thomas has unchangeable anatomy that enables him to experience tomato object differences, but Thomas’ judgment of a meaningful tomato kind necessitates a changeable,

learned factor of his taste. As Thomas has gotten older, his taste has been *developed* in order for him to know “*good food*”. If the preferably good tomato, for Thomas, continues to be a kind that is more interesting because it signifies homegrown tomato qualities, then he may be motivated by cues that he perceives to mean homegrown (e.g. a tomato labeled “locally grown”).

Tony was the only other participant at the final Tomato Tasting Dialogue location. His recorded taste test experiences were similar to Thomas’. Tony, as Thomas, said to prefer the locally grown tomato after both tests. Also similar to Thomas, Tony differentiated the two tomato samples by perceiving their mouth-touch during the blind taste test. He described one saying “it seemed like a cross-cut”, while the other he said “was a bigger piece or just felt like a wedge” (TTD2:13.10.09).¹⁰ Both St. Louis YMCA site research participants Thomas and Tony were recorded as experiencing a multi-sensual and processual “taste”.

After seeing the two tomato samples and their differentiating labels for Part 2 of his TTD, Tony again tasted them. He stated reaffirmation for tasting the two differently as well as preference for the “locally grown” kind of tomato. Tony described his experience of this in the following dialogue excerpt.

The (locally grown) one on the left tasted better, and there was flavor throughout. The (non-locally grown) one on the right tasted kind of cardboard-y and metal. It felt like it was structurally superior for taking weight and transportation, ‘cause it seems like it was firmer. The one on the left was like ‘This tomato is ready to eat now, eat it now’. (...) The (LG) one on the left was more of my ideal of what a tomato should be. (TTD2:13.10.09)

According to Tony’s testimonial, it was the locally grown tomato that he tasted to be “what a tomato should be” (TTD2:13.10.09). Tony perceived the locally

¹⁰ All the tomato samples of the TTDs were cut into “wedge” shapes. Tony’s sensual-seeming of the sample as “cross-cut” was, therefore, a mistake. Although effort was made to cut the two different tomato kind samples similarly, it may be that some samples were not equal in wedge *size*.

grown tomato sample, in other words, as more closely representing an exemplary “tomato” taste value.

During his TTD Part 2, Tony explained his perception of qualitatively different food available at a St. Louis grocery store (e.g. Aldi’s) and a Farmers’ Market. The following dialogue is excerpted not only because it supports the general thesis claim that taste perception motivates food choices, but also because it serves data useful to understanding why this may be so.

T “When I go to Aldi’s I don’t go there for produce.
...Anything that I’d expect to have taste, I’d get somewhere else.

M “Why is that?”

T “...At a farmers market—particularly if I go to the same stall with any regularity—it behooves them to let me know that they have some exceptionally good tasting tomatoes. Aldi’s doesn’t give a damn about me, I’m just a number. ...it’s basically industrial shopping. I mean everything is on flats...versus, behind each...pile of tomatoes at the farmers market is a person.” (TTD2:13.10.09)

Tony suggested that his food shopping at **both** St. Louis groceries and Farmers’ Markets informs his perception of tomato quality. The information Tony gains face-to-face from a Farmers’ Market tomato vendor has factored for his positive tomato taste experiences more so than grocery stores, which he suggested are impersonal. Tony expects from *industrial shopping* an industrial kind of tomato associated with certain taste qualities.

Indicated here, Tony has direct, practical knowledge of tomato plant growing.

I’ve grown...I grow...I’ve got tomatoes growing in my yard. They’re not peak taste because it’s getting cold, and the sugars don’t develop the same way, and they don’t have the same acidic bite. So, yeah, I grow tomatoes. I talk to people who sell tomatoes. ...I’ve been growing, maybe five years. (TTD2:13.10.09)

His statement represents simply that Tony eats his own grown tomatoes and knows how the growing process effects changes in the taste of his tomatoes. Tony asserts optimal, “peak taste” is achieved by a tomato’s sugar development in a warm environment. His assertion is verified because Tony has perceived different tomato tastes cognate to his direct, practical learning of their growth process. Additionally, Tony indicated that an *indirect* source of knowledge factors for his perception of a peak tomato. Tony claimed to speak to people who sell tomatoes, e.g. at a Farmers’ Market. Such experience may indirectly inform him about the tomato growing process. And so I reason, if Tony purchases tomatoes from a person who informs him about the plant growing conditions, then he associates the tomato tastes experienced in the process of eating such to the knowledge indirectly learned about the tomato plants.

In the following dialogue, Tony reveals how his perception of “tomato” has changed with different taste experiences.

M “Have you always liked eating tomatoes?”

T “I didn’t really care for tomatoes until I started getting fresh tomatoes when I was a kid.

M “But what do you mean by ‘fresh tomato’?”

T “Fresh tomato is like right off the vine locally. ...The biggest problem with growing tomatoes at my house is I have to grow enough so that when I’m out in the garden I don’t eat too many of the partially green ones, so there’s never any that are ripening. I really like fresh tomatoes.

M “Do you remember when you got to try a different tomato that was like ‘Whoa! That’s a fresh tomato!’”

T “Um, I think I was at my uncle’s and they had some fresh tomatoes that they had grown, and there was a big difference in taste. (...)I just *learned* (...) if I really want tomatoes (...) when they’re in season, and local, they’re best.”
(TTD2:13.10.09, emphasis added)

Tony explicitly attributed a *learning* to his perception of most preferred tomato taste. He has learned—by various direct, practical experiences—“best” quality is an effect of growing season and locale. Tony’s direct, practical knowledge of the tomato growing process affects his learned taste preferences for “locally grown” tomatoes and, proven with the following dialogue excerpt, this taste preference influences Tony’s food choice.

M “Do you continue to buy [tomatoes] in the wintertime?”

T “Not as much. I might buy a few, but I’d rather have a salad without a tomato. It’s not gonna be a real tasting tomato, ya know?” (TTD2:13.10.09)

Tony’s preference for a certain tomato taste motivates his goal-directed behavior. Tony eats fewer tomatoes in the wintertime because he expects them to taste *not* as real tomatoes. In the case that wintertime tomatoes available at St. Louis groceries are the kind that are “non-locally grown”, Tony’s choice to eat fewer then is the less negative ecologically affecting one.

“Tomato” quality

Naturally, a tomato fruit is a seasonal phenomenon, since it grows according to annual weather patterns and effected by particular climatic conditions of place. Naturally, the *good* quality tomato fruit is caused by optimal plant growing conditions. I did not learn how optimal the 2009 St. Louis season was for growing the plants, but the locally grown tomatoes sampled for the taste tests were late-tomato-season fruits since they were obtained in September and October.

I have learned by growing tomato plants myself that cooler temperature in St. Louis during those months slow and gradually stunt the full ripening of tomato fruits. This was further verified by the TTD participant who was exceptionally experienced on the matter—since being a local farmer of 500+ tomato plants in 2009. Suggesting correlation between the months of research fieldwork and the

quality of the tomatoes presented for testing, she stated that “it’s hard to get ripe tomatoes at this time of year. It’s just too cool” (TTD1:23.09.09). Since this project focused by phenomenology of *tomato* taste, it is important to assess how specific local conditions affected quality of the representatives sampled for testing taste perceptions of St. Louisans.

According to the Farmers’ Market vendors who had worked with the locally grown tomatoes, they were allowed to remain on the tomato vines until the fruits were perceived to be the ripest. I was also told they were grown without the application of synthetic chemicals to the plants. Because the grocery stores were not providing farm-direct information, the growing methods and/or environmental conditions of tomatoes available there could not be known. Neither could it be ascertained at what phase of plant growing the tomatoes were picked and transported to the stores. Stickers attached to the tomato fruits, plastic box tomato packaging, and a grocery store tomato display sign informed me about the non-locally grown tomatoes. To test as “non-locally grown” tomato samples for the TTDs, I chose those “grown in the USA”, “vine-ripened”, and “pesticide free”. Though labeled differently, these were regular tomato varieties as the locally grown ones were too. Furthermore, “pesticide free” and “vine-ripened” signified qualities similar to the locally grown tomatoes. This consideration was important for isolating variables of taste differences for the two tomato kinds. What should have been obvious then during fieldwork planning, but came as a surprising discover during the course of the TTDs, was the fact that these labels were doing the very perceptual cueing that I was studying as a factor of taste. (Rather, I used the labels “locally grown” and “non-locally grown”.) And, in dialogue with participant Ted it was pointed out how the “vine-ripened” label misrepresents those tomatoes that are not locally grown.

M “I know about this vine-ripening thing. And so, when I was shopping for a store-bought tomato, I noticed that they sold these clustered tomatoes on vines.

T “Yes. Yeah, I’ve seen that too.

M “And, are claiming that they are ripened on the vine.

T “The small ones as well as the large ones.

M “Right. And so, it seemed like a good one to try in this comparison. Because these ‘locally grown’ ones, according to the farmer who grows them, they are allowed to, kind of come to full term on the vine. And they pick them...

T “On the vine, yeah. So even if you have the vine connected to the one that’s in the store, if it’s been cut a few days before, well, it’s not ripening anymore.

M “It’s not attached to the roots, which are growing.”

T “Exactly so, exactly said.” (TTD1:1.10.09)

The grocery store’s vine-ripened tomatoes were sold as a cluster of five or six individuals attached together by a piece of the tomato vine severed from the plant. The vine-piece was shriveled and obviously not living plant tissue. If it is by virtue of a marketing display that they are “vine-ripened”, not for a method of plant growing that allows for the fruits to remain attached to the tomato plant yet growing in soil, then the label implies a quality of tomato wrongly.

With additional analysis of the TTDs, I found that multiple participants shared a different understanding of the meaning of “*vine-ripened*” tomatoes. As Ted told, this normally means the tomatoes remain on the plant until *ripeness* is perceptible. And so, it’s not a description only for an eater to think the fruit is good-to-eat. It normally signifies a fruit development that is only part of the tomato plant’s whole physiological process. It is my thesis that different, or lacking, understanding of this process, however, may change perception of a good-to-eat tomato

In the months September and October, “vine-ripened” tomatoes grown locally to St. Louis were yet available for the research project. Tasteable qualities of those tomatoes were proven to be affected by the local weather patterns of the

year. Participants Ellen, Wade and Tony acknowledged that the cooler St. Louis temperatures caused the lack of “ripe tomato flavor” in the locally grown tomato samples (TTD1/TTD4:23.09.09, TTD2:13.10.09). These three participants could taste two different tomato kinds because all three have practical knowledge of tomato plant growing, and have directly experienced a tomato ripening process in St. Louis. They learned by direct experiences—to know a locally grown tomato’s “ripeness”. That the three shared preference for the locally grown tomato despite its lacking full, vine-ripeness, simply points out how far from vine-ripened the non-locally grown tomato must have tasted to them.

It can be logically argued: a person perceives a preferably good food in the cognitive process of associating previous taste experiences to the food *as it’s identified*. Thus, an urban eater with no type of knowledge of tomato plant growing **can** think the tomato labeled “vine-ripened” is truly such. Without understanding the tomato plant growing process, this person chooses the tomato from a grocery store yet by cognitive response. When tomatoes are identified (e.g. with a label) as “vine-ripened”, and these kinds are available at the grocery store throughout a year, an urban eater may learn to know a vine-ripened-tomato only by such experiences of the thing. A tomato, in this case, could certainly taste good and **not** be an ecologically irresponsible food choice. And yet, the tomato, which is labeled “vine-ripened” and available in the local grocery store during a season of weather not conducive to vine-ripening locally grown tomatoes, is an ecologically irresponsible food because it is the kind grown non-locally. (And, given that non-locally grown foods pose more of an ecological problem than a locally grown kind.) The argument has become clarified, and thus can the urban eater’s tomato choice be problematic when his/her personal taste lacks knowledge of tomato plant growth.

CHAPTER 6: RESEARCH CONCLUSIONS

Taste is not a simple sensation for a food that is sweet, salty, bitter or sour. Taste is a perceptual experience and happens for multiple factors. Personal anatomy—a rather unchangeable factor—grants unique sensory experience. Also unchangeable for taste, a food object is uniquely replete of chemical qualities that stimulate a personal experience of it. And, as eating happens, how a food does taste is the effect of various stimuli as well as the eater’s knowledge of such. Personally historic experiences are associated in order to perceive a “food” taste, and thus know it is, for example, a good “tomato”.

Memories factor significantly for evaluating a food by taste. Since the majority of research participants told stories about prior tomato eating experiences during the TTD sequences, this suggested a remembered tomato eating experience was a reference point for their TTD evaluations of the tomatoes. And, for this reason, their personal analog of “tomato” is continually shaped by a changeable, learned factor of taste. Socially shared eating experiences and culturally specific “food” values also condition personal taste and influence changing personal perceptions of food kinds.

“TASTE” TEST RESULTS

The results of the Tomato Tasting Dialogues in St. Louis can be basically understood as an account of urban eater preferences for either the two taste-tested tomato kinds. **Table 4** diagrams participant preferences following both blind and non-blind taste tests. As conclusive distinctions of tomato taste experienced, thirteen of the seventeen St. Louisans said to prefer the “locally grown” tomato to the “non-locally grown” tomato. Simple data analysis indicates a food value shared by the majority of TTD participants: the preferably good tomato is the “locally grown” kind, which was verified by St. Louisans who directly perceived its taste quality.

Table 4. The Tomato Tasting Dialogues: taste test data

Tested taste preferences of two tomato kinds amongst 17 St. Louisans			
	“Locally grown” tomato	“Non-locally grown” tomato	No preference
TTDs 1	Ellen, Age 67, Type 1, >34 papillae		
	Shirley, Age 56, Type 1, 20 papillae		
	Tom, Age 50, Type 1, 23 papillae		
	Wade, Age 44, Type 1, 10 papillae		
TTDs 2	India, Age 5, Type 1-2, 11 papillae		
	Gloria, Age 8, Type 1, 20 papillae		
		Nadine, Age 3, Type 4, 11 papillae	
	Anastasia, Age 9, Type 1, 24 papillae		
		Charles, Age 6, Type 2, 12 papillae	
	Pearson, Age 26, Type 1, 19 papillae		
			Euylan, Age 40, Type 2, 17 papillae
TTDs 3	Ted, Age 82, Type 1, 10 papillae		
	Janet, Age 57, Type 1, >35 papillae		
	Greg, Age 43, Type 1, 21 papillae		
TTDs 4	Thomas, Age 65, Type 2, 18 papillae		
	Tony, Age 50, Type 1, 12 papillae		

Cells that are bordered by --- dashed line indicate the TTD participants who made explicit their changes of tomato perception after both Parts 1 and 2 taste tests.

It is tempting to generalize a St. Louis food norm from such an account, and thus conclude that a locally grown tomato is the correct kind for urban eaters there to choose. This may be encouraging for readers who wish to simply reason that all

such kinds of food are the correct choice for us eaters. In fact it would be a specious research conclusion since the Tomato Tasting Dialogues provided limiting—albeit, authentic—data.

The data collected from the seventeen participants justified studying “taste” as a multi-factored phenomenon, in order to investigate how an eater perceives a preferably good kind of food. But the TTDs cannot be used for concluding the tomato kind that is the correct choice for St. Louisans. This is not simply because perceptions of a good tomato vary per individual, but the “locally grown” kind of tomato may not in fact be the preference for a different sampling of eaters. Assessing the categorization of the participating St. Louisans by the knowledge typology, it is clear why concluding the normally good tomato kind is limited by the data. The majority of research participants represented Types 1 and 2 knowledge categories. No participants were categorized as Type 3, with indirect knowledge of tomato plant growing. And, only one participating individual could be categorized as Type 4. Therefore, only one of seventeen total research participants tested taste perception of the two tomatoes without any knowledge about the tomato plant growing process.

Although the data is limited, the TTDs do prove correlation between knowledge of food plant growing and an urban eater’s taste perception. All participating St. Louisans with direct, practical knowledge of tomato plant growing verified that such contributed to experiencing taste preference for the locally grown kind of tomato in both blind and non-blind tests. Dialogue of participants with Type 2 knowledge of tomato plant growing also indicated that their previous direct experience of tomato growing was a strongly influential factor for preferring the taste of the locally grown tomato in both tests. But, further research is needed for studying how a St. Louisan’s non-knowledge of a tomato’s growing process affects her/his perception of different tomato kinds. This was an important finding for the study that claims such a case of non-

knowledge relates to an urban eater's choice of a tomato kind that incurs more negative ecological effects.

A Continuum: Knowledge types of tomato plant growing

Several of the informants told me about their directly experiencing growing tomatoes however the amount of experience between them varied. Ellen, the tomato farmer, has considerably more practical knowledge of tomato plant growing than others, such as the young woman, Pearson, who only once grew a potted tomato plant on her apartment stoop. The participants testified to differing degrees of "direct, practical knowledge" of tomato plant growing. This discovery was more note-worthy for further researching the theme than cause for invalidating the types of knowledge. The categorization remains useful for the thesis, but the originally conceived knowledge typology might be best visualized as a *spectrum*. As a spectrum there is gradation in between, but the four knowledge types remain distinct. Most vivid are the extreme types: a person has the "Direct, practical knowledge" of growing tomatoes, or a person has "No knowledge" of a tomato's growth process. Representing knowledge differentiation as a spectrum of types is more sensible with understanding that personal knowledge of plant growth accrues in a continuum of learning through varied real-life experiences.

In addition to differences of direct, practical knowledge types it was also found that a person learns about food plant growth through various experiences and therefore qualifies multiple knowledge types. For example, the participant Pearson was ascribed direct, practical knowledge of tomato plant growth because she told to once have grown a tomato plant in a pot. But after dialogue analysis, I concluded her taste-relevant knowledge of tomato plants' growing derived in her Type 2 "Direct, non-practical knowledge". That type was gained from her many summers of eye-witness experience to the backyard gardens of her friends'

parents, where “(...) they had *great* tomatoes, and they grew a lot of them” (TTD6:26.09.09).

Blinded to the tested samples, Pearson perceived taste of the locally grown tomato not only as good, but as better than the non-locally grown tomato. She confirmed this with the non-blind taste test, for which she learned that the preferable was a sample of a “*locally grown*” kind. Pearson, herself, remarked conclusively about her experience, that “[The tomato taste tests] just sort of confirmed (...) my preference for homegrown tomatoes” (TTD6:26.09.09). Having a taste preference for a locally or home, grown tomato is not the effect of Pearson’s one effort to grow a tomato plant. Pearson’s confirming the “locally grown” kind of tomato as preferably good to taste was enabled by her direct yet non-practical knowledge of the tomatoes grown in Pearson’s friends’ backyards. Pearson perceived taste of the tested tomatoes in relation to the “*great*” kind she experienced while eye-witness to backyard plant growing.

FUTURE TASTES

Concluded on a general level, this project points to the need for developing awareness of the significance of food choices for the resilience of cultural and natural environments. After coming to understand that “food” is evaluated through perceptual learning, future taste experiences in the Maplewood and Old North St. Louis neighborhoods will continue to reveal what factors as significant to food preferences there.

Both Maplewood and Old North St. Louis offer, for residents and neighborhood visitors alike, opportunities to develop Types 1, 2, and 3 knowledge of tomato plant growing. The 13th Street Community Garden and the Schlafly restaurant garden both present opportunity for direct, practical experience with growing food plants. The gardens also function as environmental cues for a person’s learning of the food things there. This instills direct, non-practical knowledge of some facts about the food’s natural growing processes.

The Farmers' Markets in those two neighborhoods provide urban eaters who shop there the access to informative market vendors. Due to usual Farmers' Market guidelines, vendors of the foods sold there often have direct, practical knowledge of how and where these are grown, and attest to this in conversation there. In this way, an urban eater has the opportunity to indirectly learn the growth processes and/or environmental conditions of the foods available to choose at a farmers market.

Two recent initiatives of these neighborhoods have potential to inform the taste of St. Louisans and offer opportunity for further studying the themes. A school garden in Maplewood and the Old North Food Cooperative are new components to the food systems of the neighborhoods respectively. These will serve the two St. Louis neighborhoods with cues of food norms, or St. Louisans' shared meanings of the foods that are the valuable kinds of eatable things. In the process of eating the certain kinds of foods available from the school garden and the food cooperative, taste preferences will be learned, reaffirmed, or changed.

HOW: I AM WHAT I EAT

It has been famously quipped: Tell me what you eat and I will tell you who you are. This aphorism remains relevant as certain objects continue to mean "food". And another analysis of phenomenology is useful for my summation here.

Phenomenology teaches us that the beginning and end of all knowledge is a horizon of meaning. Meaning is cultivated within this horizon through our agitated and tireless senses, who cannot help but set out into the world, return with tidings, and set out once more. All the while we live, and grow, and change, and all the while we reflect our changing meaning back onto the world. We act and reenact in endless succession. And the knowledge we thus gain of the world is a function both of our carnal experiencing and of external 'reality', at any one moment simultaneously limited *and* enabled by our horizons. (Mueller 2008:120)

Taste functions as a bridge between our personal subjectivity and the “food” objects learned from our external reality. For taste, we can evaluate *what matters most* amongst perceptible environmental stimuli in order to know good food-ness. It could be that food stimuli matter to us most when we are feeling hungry for lacking nourishment. Research indicates that we are compelled for a kind of food when it satisfies more than nutritional needs.

We develop identity through acts of eating because food objects are replete of social and cultural meaning. This project contributes data for concluding “food” reinforces behavior because it is relatively nourishing **and** because it is relatively replete of social and cultural meaning. Not only do we eat food to survive. We also eat food things to feel alive, as humans. Foods are meaningful things whereby a person sustains him or herself as meaningful. Telling what it is that one eats, a person recognizes a kind of knowledge achieved by the action. That is, he/she admits an understanding of a kind of meaning-full object. Food—variously replete of nourishing qualities—has been eaten. But, while “food” may be explicit upon eating, it is only by taste that one can recognize the implicit social and cultural meanings. The perception of taste qualifies and quantifies the knowledge gained by eating the food. Because of the contextual variability of personal experiences, a food object is only kept implicitly meaning-full because of accumulated personal food *choices*. A food choice admits a taste discovery. Since these discoveries are constant with the regularity of eating, personal identity is shaped by continued experiences of taste perception. Objects made socio-culturally meaningful imply morality. However, a food choice only becomes a person’s ecologically responsible act with her/his direct types of knowledge how and where a food is grown.

My study began by considering how St. Louisans evaluate tomatoes. Generally, I posited that different understandings of food plant growth correlate to different perceptions of good kinds of food. The data collected from

researching this proved St. Louisans evaluate tomato differences in knowledgeable taste experiences, and gave reason to support different ways of achieving knowledge of plant food growth. For the urban US population—removed from much of food production—certain initiatives directly expose us to how and where foods grow. My research illuminates the significance of any practical effort to grow food in urban places: from potted plants on building stoops and yards of tended edible plants, to city lots of fruit-growing trees and urban farms raising plants and animals. These condition us to sustain social and culturally defined good, “food” things. And, this affects perceptual understanding of these things as ecological objects.

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Table 5. Tomato Tasting Dialogue (TTD) citation references

<u>IN-TEXT REFERENCE</u>	Tomato Tasting Dialogue #	Participant's Name	Date	Tomato Tasting Dialogue SITE
(TTD1:23.09.09)	1	Ellen	23 Sept 2009	Maplewood Farmers' Market
(TTD2:23.09.09)	2	Shirley	23 Sept 2009	Maplewood Farmers' Market
(TTD3:23.09.09)	3	Tom	23 Sept 2009	Maplewood Farmers' Market
(TTD4:23.09.09)	4	Wade	23 Sept 2009	Maplewood Farmers' Market
(TTD1:26.09.09)	1	India	26 Sept 2009	North City Farmers' Market
(TTD2:26.09.09)	2	Gloria	26 Sept 2009	North City Farmers' Market
(TTD3:26.09.09)	3	Anastasia	26 Sept 2009	North City Farmers' Market
(TTD4:26.09.09)	4	Nadine	26 Sept 2009	North City Farmers' Market
(TTD5:26.09.09)	5	Charles	26 Sept 2009	North City Farmers' Market
(TTD6:26.09.09)	6	Pearson	26 Sept 2009	North City Farmers' Market
(TTD7:26.09.09)	7	Euylan	26 Sept 2009	North City Farmers' Market
(TTD1:01.10.09)	1	Ted	01 Oct 2009	Maplewood/Richmond Heights Library
(TTD2:01.10.09)	2	Janet	01 Oct 2009	Maplewood/Richmond Heights Library
(TTD3:01.10.09)	3	Greg	01 Oct 2009	Maplewood/Richmond Heights Library
(TTD4:01.10.09)	4	Terry	01 Oct 2009	Maplewood/Richmond Heights Library
(TTD1:13.10.09)	1	Thomas	13 Oct 2009	St. Louis Downtown YMCA
(TTD2:13.10.09)	2	Tony	13 Oct 2009	St. Louis Downtown YMCA

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APPENDIX 1: Phenomenological Interview Protocol

Research Project: A Phenomenology of Taste as it relates to a Knowledge Typology of tomato plant growth

Tomato Tasting Dialogue Date & Time:

Tomato Tasting Dialogue Location:

Participant information:

Name: _____ Age: _____

Home Location: _____ Profession: _____

(MV: briefly describe academic affiliation and research project to informant. Assures confidentiality of responses, and that informant is free to stop at any time during the tests and interviewing process.)

PART 1: BLIND TASTE TEST and DIALOGUE

[MV gives, simultaneously, one piece each of a locally and non-locally grown tomato. Eyes closed, participant tastes unlabeled/unseen tomato samples.] *Note which is tasted first!!*

1. Is there a taste difference? Will you describe it (flavors, textural...)? Is one good? Does one taste better than the other?

PART 2: NON-BLIND TASTE TEST and DIALOGUE

[Eyes open, participant tastes the two labeled/seen tomato samples and MV continues dialogue.]

2. Is there a taste difference? Will you describe it (flavors, and any additional sensual qualities—visual, textural...)?

Is one good or not good?

Does one taste better than the other, and why?

3. Will you tell me what you know about tomato growing? And, how that knowledge was acquired? (E.g. tomato gardening, seeing tomato plants in neighborhood, school teaching, media type, friend/family word-of-mouth...)

Informant's knowledge type: _____

Knowledge type 1 (direct/practical) experienced with hands, and other senses

Knowledge type 2 (direct/non-practical) not with hands, but other senses

Knowledge type 3 (indirect) not experienced with hands or directly sensed, but learned

Knowledge type 4— (no knowledge) no knowledge of tomato plant growth

4. Do you think that when you taste these tomatoes you're relating some understanding of tomato growing to recognizing it as good or bad?

5. Why do you choose one tomato over another? (What motivates tomato type preference...e.g. between "locally grown" and non-local?)

4. Have you eaten tomatoes throughout your life? Taste change?

5. What is your favorite way to taste tomatoes?

PART 3: TASTE BUD TEST

MV will direct informant in "dye+count" test for determining number of taste buds on tongue.

>>Informant's taste bud count: _____

<15 insensitive, non-taster 15-35 average, taster >35 super-taster

*(MV thanks participant, and offers contact information for further questions, comments, concerns...
... Tomato recipes to share??)*