Differences in the situated work of professional tasters and sensory scientists

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Abstract

Both the work of sensory scientists and the work of professional coffee tasters involve using taste descriptors, lexicons, and tasting protocols; however, a twelve-year study of tasters in fourteen countries revealed that scientists and professional tasters do different things with them. Sensory scientists are oriented to fixing and maintaining unities of identity for the taste descriptors they use, and they seek to establish a universal applicability for them. Professional tasters use taste descriptors to help intensify their contact with a given coffee, and they give equal importance to the singularity and the universality of the flavors they are assessing. Both cohorts of tasters are concerned with objectivity, but sensory scientists pursue a universal objectivity whereas professional coffee tasters are content with a practical objectivity so long as it successfully leads to discoveries about what tastes the coffee is presenting. In recent years, the idea has grown among purveyors of coffee that scientific tasting can remedy the intrusion of subjectivity into tasting; however, close examination reveals that subjectivity is a required component of an objective understanding of a coffee's taste. This decisive separation pivots around competing understandings of the resources of taste descriptors in their situated usages.

INTRODUCTION

Alfred Schutz and Harold Garfinkel taught us that the practices of scientific inquiries and those of common sense inquiries have a good deal in common. In the global world of coffee purveying, the practices of professional tasters and sensory scientists also share many features. Both cohorts of tasters are addressing a similar task, which is to convert what is the essentially subjective experience of tasting coffee into objective knowledge about tastes. They use similar tools for accomplishing this: both employ taste descriptors; both use tasting protocols that feature tasting forms that organize their inquiries into flavor; and both use some form of what Garfinkel has called metrology, that is, the numeration of gustatory features.

Here are a few taste descriptors in common use: Bitter, Sweet, Acidic, Round, Balanced, Fruity, Nutty, Earthy, Malt, Berry Lime, Chocolate, Vanilla, Cinnamon, Almond, Papaya, Citric, Sour, Buttery, Grassy, Hay-like, Smoky, Butterscotch, Fermented. These descriptors refer

to tastes, and since the relevance of indexicality and reflexivity is ubiquitous, there is no doubt that both of these apply centrally to the work of both cohorts of coffee tasters.

Take "lemon" for example. We can certainly develop a clear-cut dictionary definition for lemon, but there are many lemons, and it is not until we drink a specific cup of lemon-tasting coffee that we can really know what the taste descriptor "lemon" will mean here and now. This is that descriptor's natural indexicality. We might prefer that we define each flavor in a clear and distinct way in advance of our tasting, but the particular circumstances of tastes inevitably influences the itinerary of any taste descriptor. This is especially true for descriptors that are somewhat ambiguous, like "bright," "woody" or "skunky."

THE INDEXICALITY AND REFLEXIVITY OF TASTE DESCRIPTORS

A foundational discovery of ethnomethodological research is that the meaning of any word, term, descriptor, category, etc. is indexical, which means that no matter what sense it has prior to the occasion of its use, its meaning will depend upon how persons actually use it to index a local intelligibility associated with a local course of action. Its meaning is therefore affixed to a specific time and place of its use, places where the terms and glosses afford the parties who operate with them opportunities for adjustments and realignments. Dictionaries provide settled meanings, but efforts to apply them require further adjustment to the situation; even on those occasions where one rigorously applies a dictionary definition, it will be transformed by the situation, by parties who face a perpetual phalanx of local exigencies about which dictionaries know nothing.

When someone tells me that the coffee we are drinking has a woody taste, and I'm unsure just what is a woody taste, my tongue will dive into my cup with the label "woody" riding on its tip, search for it, and what it collects under that guidance becomes a candidate for what "woody" is. This is the reflexivity of taste descriptors at work. And when I then discuss with my fellow tasters a coffee's woodiness, we each may think we know what we mean, and yet it will come down to us determining the effective meaning of woodiness together. While we seek objective knowledge, the basis of objectivity lies in intersubjectivity.

To help guide tasters, the Specialty Coffee Association has designed a colorful Flavor Wheel that includes 108 flavors. A question arises regarding whether each of these flavors must be predefined and whether their sense and reference can be affected by any of the coffees to which they are being applied. Sensory scientists are more literal minded about their descriptors, whereas professional tasters understand that descriptors must be kept flexible. Take for instance the category for "floral" from the Taster's Wheel (see Figure 1).. The Wheel offers three divisions for "floral": chamomile, rose, and jasmine.

There is no way that these three categories can exhaust the possibilities of floral flavors, so the descriptors that are provided must be able to extend their reference to cope with such possible flavors. In fact, we discover here that the sense of a descriptor is not simply to be deduced positively from a name and its definition; rather, its meaning is grasped by considering the differences among the three descriptors and attending to the semiotic interaction among the three. Rose is not chamomile and also not jasmine; hence, it collects its meaning in part by virtue of what it is not. A range of meaning is set up by the differences among them, and what

is between them occupies a greater scope than each one individually. That is to say, negation plays as much a role in creating the sense and reference of descriptors as does any strictly positive derivation. As Mexico's senior taster Manuel Diaz observes, "Most of the sensory attributes are metaphors." Perhaps this is why both sensory scientists and professional tasters also share respect for keeping an open mind when they are tasting. No doubt, keeping an open mind is a sound policy for inquiries of any kind, including scientific ones.

SCIENTIFIC AND NONSCIENTIFIC TASTING

Michael Lynch (1993, 112) is rightly suspicious of "the discrimination of 'science' from nonscience," and it is evident that sensory scientists and professional tasters employ a number of similar practices and arrive at many similar impasses, which is probably why in truth they are constantly learning from each other. However, my ethnomethodological research has exposed some important differences in their work practices, and these differences begin with the way that the methods of sensory science are pointed at limiting the influence of the indexicality and reflexivity of taste descriptors. Sensory scientists view them as adversaries, while professional tasters have learned how to use indexicality and reflexivity as resources. That is, while the lability of taste descriptors is a problem for sensory scientists, it is not a major obstacle for professional tasters. In order to understand this difference, we need to make a careful examination of the situated work of coffee tasters.

Taste works up-close with its object, while sight is more distal and so is more easily given to a dualism that seeks to make the objects of the world clear and distinct. Aristotle and Kant prioritized sight and demoted touch and taste to second-class status because these senses were more prone to ambiguity. This is typically a Western European approach to indeterminacy: rule it illegal from the outset. Sensory scientists work mostly in a distal fashion, placing coffees at a distance and relying upon sight while they remain preoccupied with filling in forms. Professional tasters work more with their noses and tongues right inside the coffee—they even try to turn their minds off in order to make closer contact with the taste. In their work calculating the additions, multiplications, and numerations demanded by their tasting forms, both sensory scientists and professional tasters devote as much time to being accountants as they do to tasting coffee; however, professional tasters resent their work as accountants. Sensory scientists have more enthusiasm for it and less skepticism about their numerated results, even though their enumerative tasks may hamper their tactile and gustatory engagement. Importantly, professional tasters pay more attention to what is indeterminate in a taste or what is still working alongside, or beyond, the boundary of a definition. In fact, they are riveted by what is indeterminate because they understand that there is always more to the taste in a cup of coffee than their descriptors have been able to capture; they are in continual pursuit of this "what more."

As a consequence of this, professional tasters more readily recognize the local contingencies and practical limitations of the tasting protocols they are using, and they characteristically eschew absolutist accounts of a coffee's taste. This runs counter to the tendency of some in the coffee industry to make sensory science's protocols foundational systems that are able to ground true knowledge. A motivation here may be the lucrative marketing of these systems

to coffee purveyors who seek foundational and objective knowledge about the coffees they are purveying in order to reduce their financial risks. Both sensory scientists and professional taste use tasting forms (see Appendix).

These forms are affiliated with a protocol designed to ensure that each coffee will be treated similarly, and each one is the result of the divide-and-measure policy of science that has been in force since Descartes (1983, 11), whose second rule of methods states, "To divide each of the difficulties I would examine it into as many parts as possible and as was required in order to better resolve them." Aron Gurwitsch (1964, 114) takes issue with divide-and-measure policies: "What is given in immediate experience is not adequately described when it is characterized as an aggregation of independent elements." He argues that for elements that are indifferent to each other, "the only relationship that may obtain between such elements is of a quite extrinsic nature; however, "that which presents itself in direct and immediate experience is structured and organized" by gestalt wholes that provide them with their sense. Surely, a coffee tastes as a whole, and dividing up the aspects of flavors may miss synergetic effects, positive or negative, of how these elements work together.

Dividing the properties of the coffee into constituents and then reconstituting a unity for the coffee afterward risks missing the coffee in the very way a drinker naturally appreciates it. Gurwitsch (1964, 116) elaborates, "It is not as though a constituent was determined first by certain nuclear properties." Rather, each constituent receives its fullest significance, its phenomenal identity, from the whole that has its life as a synergy of all the constituent properties. Some tasting protocols afford little opportunity for measuring or appreciating these synergies, except for the single category of "Overall," which is the very category that receives the most criticism of sensory scientists. Enrique Meschini of Livorno was apologetic about including the "Overall" category on his tasting form, which is used in Europe to certify espresso coffees as officially "specialty" grade; however, he explained that he was reluctant to remove it.

Hegel (1977, 10) concurs with Gurwitsch's more dynamic view of reality when he writes, "The living Substance is being which is in truth Subject, or, what is the same, is in truth actual only in so far as it is the movement of positing itself." As the American taster Scott Conary has summarized, "Cupping is an exercise in trying to be objective about moving target." Professional tasters are more prepared to capture a taste that is on the move, and to recognize that coffee is a living thing, whereas sensory scientists labor painstakingly to transform flavors into taxidermy.

Here we discover another importance difference between sensory scientists and professional tasters: sensory scientists believe that their measurements of divided categories of tastes will give the truth of the matter and that all one needs to do is add up the scores to achieve an objective result. By themselves, the numerical renderings present the aura of objectivity, or in Simmel's description (2009, 246), "Objectivity functions as noblesse." On the other hand, after adding their scores professional tasters frequently discover that the resulting measurement does not tell the truth about a coffee. When that happens, they "game the form" by readjusting the numerical results in several categories until they produce a total score that reflects

the coffee's quality. Sensory scientists will never do this; however, I wonder which of the two practices produces the more objective result. It depends upon what one means by objectivity.

Simmel (2009, 270–71) seems to agree with the professional tasters' skepticism when he observes that "mathematical calculation frequently fails our understanding" and "is so incomplete that the subjective impulses must complete the choices in their stead." However, there is a reason for scientific protocols and for what Garfinkel (2002, 270) has called "situated metrological work" or numeration besides simply appearing to be more "objective." In my ethnomethodological research of Tibetan logical debating as well as coffee tasting, I have discovered that one motive for rationalist ethnomethods is paramount: organizing the orderliness of a situation. Situated metrological work provides readily available solutions for making a local situation orderly and for improving the communication among cooperating parties, even though it may also introduce results to which the parties may not subscribe. Whatever else they may be, the procedures of numeration are superior means for organizing people so that their interaction can proceed in predictable ways. But these numbers must be "pragmatized" (Lynch 1991, 94) if they are to have practical value. In the end, "'Measurement' is a hopelessly vulgar competence, and it is no less vulgar when encountered in the scientific laboratory" (1991, 98). Microinteractional studies of social order reveal that local orderliness and rationality are closely related, with rationalities frequently being highly convenient means that members use for achieving orderliness.

Further, because of insecurities that plague people when they work in concert with their peers, there is a preference for objective forms because objective standards and objective methods make it evident what each person needs to do in order to move through the local interaction without getting into trouble. Ratiocination plays a vital role in producing and maintaining any local orderliness. Suffice it for now to observe that clarity is a benefit that sometimes comes at the cost of restricting understanding.

USING TASTE DESCRIPTORS

If we move in more closely and examine the worksite activity of using taste descriptors, we discover that descriptors are used not only for the purpose of defining the tastes but also for finding the tastes. Sensory scientists confer priority to defining while professional tasters will use descriptors for aiding their work of finding tastes:

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A  It has a sort of bergamot flavor.
B  Is that bergamot flavor at the end or the beginning?
A  Right off the bat, right in the beginning, and then it's just gone.
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Here the professional tasters are working collaboratively, and they can even work with descriptors that are vaguely defined or that the tasters may have little or no experience with, like "cigarette ash" for someone who has never smoked or "blueberries" for a Central American. Nevertheless, an indeterminate descriptor can facilitate that collaboration that leads tasters to probe collaboratively upon a single region of flavor and teach each other just what that flavor is. Properly understood, taste descriptors are tools for discovery within a process of instruc-

ted action. An evolving taste in the cup is explored along with assistance from the likewise evolving significance and specificity of descriptors, a reflexive phenomenon that is always in progress. Experiences and accounts evolve together, and "getting it right" competes with the task of discovering what more there is to the taste than one has been able to identify. For this reason, professional tasters pay close attention to the itinerary of any taste descriptors that are introduced.

Professional tasters use descriptors in order to learn what they mean, while the procedure of sensory science is to begin by developing foundational definitions of taste descriptors that are made to stand autonomously, independent, and in advance of any coffees. The result is that their descriptors are less probative than the ways professional tasters treat descriptors. There is a fundamental reflexivity to the situation: descriptors direct the interrogation, and the taster, with his or her nose close to the tasting spoon, searches for what it is that the descriptor can be specifying. What the taster finds with the aid of the descriptor reflexively informs the taster what that descriptor means. The descriptor and the taste it describes mutually elaborate each other (cf. Garfinkel 1967, 40). What the Italian philosopher Nicola Perullo (2016) suggests for wine holds for coffee: "This wine will create its own language ... I learn the language while I create it, meeting the wine I drink."

Any perceived taste is entangled with what we know. How people make sense of taste—what they notice, what categories they apply, and what is the organization of their preferences—influences the tastes that they sense. This is a huge topic, and the study of the ways that people organize their taste, and the influence it has upon what they enjoy, is a project of research that should be developed. It is the lay project of every barista.

Here is an illustration where "floral" is made a socially shared object for tasters even before its meaning has been settled. This is a practice that is common for mundane tasting, and it is common because it is productive for sensory understanding. For sensory science, the meaning of descriptors must be a settled matter before tasting can commence, but many tasters are capable of using an indeterminate descriptor for discovering flavors. Here are two occasions where the descriptor "floral" is used:

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Alice:   Do you think it's floral, or-?
Sami:    "Floral." I'll have to try it again.
Cherise: Maybe there is a slight floral finish.
Sami:    Oh, "a slight floral finish."
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On another occasion:

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Paula: I like 32 the best.
Alice: Yahh. Yahh.
Donna: And you think it is the ^floral^?
...
Alice: This one is really good, I can't put my finger on what
       it is, but- I didn't taste ^floral^. To me it's not souurrr...
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They are working out the meaning of "floral" as they are using it to probe the coffee, and the critical thing about "^floral^" is that it provides a focal point for the collaboration of the parties, who can progressively make it more coherent, understand it, refine it, collect more examples, and eventually use it for exploring subsequent coffees.

Something similar is happening with "ferrous" in this collaborative tasting by lay coffee drinkers in Italy:

Silvio: *Lo sto sentendo ancora adesso che sono passati minuti.*
I'm still feeling it now that minutes have passed.
e anche un vago sentore di ferroso, non so perché.
and even a vague hint of ferrous, I do not know why.
Host: *Ferroso?*
Ferrous?
Silvio: *Ferroso, sì...*
Ferrous, yes...
Ilaria: *Senza zucchero è un po' troppo amaro e ho ritrovato la sensazione*
Without sugar it is a bit too bitter, and I found the feeling
del ferroso in effetti, anche adesso a distanza di minuti
of ferrous in fact, even now minutes later.

Here the descriptor "ferroso" is being used collaboratively to locate a taste, and the parties here are using the descriptor effectively to guide each other's tasting. "Ferrous" is supplied with its objective sense only following a local course of collaboration.

INSTRUCTED ACTION

We have here a perspicuous illustration of instructed action. Garfinkel (2007, 36) speaks of "the congregationally produced and concertedly accountable structures of the mutually instructable actions of ordinary society." Professional tasters continually teach each other what they are discovering, how to notice flavors, what a taste descriptor can mean for a particular coffee, and especially how to use a descriptor to explore a coffee they have in hand. That is, they are teaching and learning "the observability of those things" (Garfinkel 1993, 8).

A It's got a back flavor.
B I would consider that to be "woody."

As Garfinkel (2002, 186) proposes, "Hopelessly and without possibility of avoiding it, they are engaged in working out what we'll call 'teaching's work sites.'" Sensory scientists are unable to teach other much because their methodology requires that people taste alone, usually in isolated booths (often painted white) and not speak, so that they can taste without bias or influence. But professional tasters are trying to discover what they do not know, and so they must rely upon collaboration. As Trieste's most distinguished taster Franco Schillani once declared to me, "I never taste alone," and Marcio Hazan, one of the leading tasters in Santos,

Brazil, reported that he depends upon the different perspectives he gains by consulting other tasters, even novices.

Much sensory scientific research is based upon laboratory tastings of lay or professional tasters who are given a flight of coffees, a finite collection of taste descriptors, and scoring sheets to rate numerically the coffee by categories (see Appendix). While the sensory scientists themselves are quite clear about the meaning of each descriptor provided, their research subjects may not be so clear. These subjects will fill in bubbles or squares with their numerated assessments, but the scientist will never come to know what the subjects think each category really is. It is possible, even likely, that each subject has a differing notion of what each category represents; some notions may be idiosyncratic since differences in understanding are inevitable. Moreover, one subject's "*6*" (on a ten-point scale) may reflect a value that is different from another subject's "*6*." Just because it is the identical number does not make it an equivalent fact. The problem with most research designs is that the research subjects are never provided an opportunity to explain just what their scoring means.

Professional tasters rely heavily upon their formal "calibration" sessions, which follow each flight of tasting coffees, and it is here that they come into synch with each other regarding how they are using descriptors and numerated assessments for the day's coffees. These calibration sessions, which are a regular part of the protocol of the tasting sessions of professional tasters, offer them opportunities to establish an alignment of understanding and are occasions when criticism and social confirmation assist in establishing objectivity. Calibration sessions are mostly lacking in the experimental designs of sensory scientists. This leaves the scientist free to interpret the resulting averages and totals in any way the scientist is inclined because by that time the research subjects are absent from the scene. They are never provided an opportunity to talk back to the researcher, which transforms much sensory science into monologues. All of those sixes, etc. can be given a final average to which only the scientist holds the key, but the link to any subject's actual thinking is severed, which can render the data sterile.

Numbers and words are tied to the work that people do with them, which supersedes dictionary definitions. Professional tasters coordinate their inquiries with the help of descriptors, and so for them the value of descriptors rests in how they are used to facilitate discovery. What tasters do with descriptors is more important than the semantic content that descriptors bear, no matter how carefully they have been defined. As Merleau-Ponty always insisted, the "can do" exceeds the "is" of any category. A descriptor is not merely a definition but an instruction about the in-the-course, worldly ways of using the descriptor to taste some coffee; further, most extensions of knowledge about the pertinence of a taste descriptor are collaborative accomplishments. Lynch and Lindwall (2023) explain that actions are instructive "in the way they display what to do or what to say in an immediate situation." Since sensory scientists are not using descriptors as tools for instructive interaction, their taste descriptors have a different status. Although they may share the same names, they are not the same things. The difference

lies in how each is treating taste descriptors: professional tasters are interested in discovery, and sensory scientists are interested in fixing definitions.

Examine the Sensory Lexicon (Figure 1), which has been praised widely as a contribution of sensory science to coffee tasting:

Figure 1. Small part of the Sensory Lexicon (World Coffee Research 2016).

Operating under the model of mechanical objectivity—which according to Daston and Galison (2016, 121 and 325) arose in science during the late 19th century but was abandoned by most scientists by the middle of the 20th century in favor of trained judgement (which prioritized accuracy over objectivity)—World Coffee Research has labored extensively to predefine taste descriptors in a "scientific" way. For instance, relying upon this outdated mechanical objectivity, the sensory scientists of the Sensory Lexicon ground their "blueberry" in a particular canned blueberry (with added blueberry syrup) manufactured by Oregon Fruit Products. This predefined taste is then imposed upon all coffees; by being grounded in this way, a scientific taster will lack capacity to be sensitive to much that is original in a coffee. One cannot simply apply a methodology, even one about which one is confident, and subsequently coast through one's investigation confident that one is on the correct path; rather, one must remain open to learning what one does not know and constantly sustain self-critical evaluation.

This is well illustrated by the way the Italian taster Dr. Enrico Meschini samples winners of the Cup of Excellence competitions from around the world, in order to keep abreast of world trends. Meschini considers it inadequate to simply cup the winning coffee or even to cup it using his own firm's form; instead, he always uses the very same tasting form that the judges of the competition themselves used, in order to reproduce the right context in which their assessments had their sense and reference. That is, he revivifies the quantified scoring and inspects each aspect using those judges' scorings to guide him through his thorough exploration of the tastes. In Garfinkel's terminology (1996, 6), he is transforming the documented account into the procedural account that it was for the judges at the time.

Professional tasters consult the formal tools of tasting, but they evade being commanded by them. The perspective of one coffee purveyor from the San Francisco Bay area is instructive: "I want to know all the information and the numbers, but I don't feel under any obligation to be directed by them." Typically, professional tasters will voice multiple candidate-descriptors, and each descriptor can cause tasters to direct a fresh inquiry to a coffee. These inventive tastings are the most serious part of a taster's work. Weaker descriptors may get ignored and drop out, while stronger descriptors receive some corroboration, re-exploration, and usually

accrue some emendation, as tasters collaborate in pinning down precisely the sense and reference of a correct descriptor, such as

1. Fruity.
2. Citrus. Orange.
3. Lemon in it.

Descriptors must be flexible, and so some indeterminacy is a benefit for tasting by helping descriptors be adept enough to adapt to a wide range of coffees. In some cases, flavors can escape the descriptors altogether. Surely, tastes are more diverse than the supply of descriptors.

Sensory scientists seek a different objectivity than the one professional tasters pursue; they seek a universal objectivity, one that is unchanging and occupies a place in a world of stable facts. The lability of taste descriptors can be a problem for sensory scientists, but it is not a problem for professional tasters; rather, it is a resource for skilled tasters who work in concert. As Michael Lynch (1993, 22) observes, "Members manage to make adequate sense and adequate reference with the linguistic and other devices at hand."

Professional tasters strive to achieve a practical objectivity, which is something different than universal objectivity. Lynch (1993, 300fn) has criticized scientists who unreflectingly consider what they observe to be something that inevitably can "provide a basis for making universalistic statements about observation." In other words, their meanings for taste descriptors pre-exist the coffee, and their priority is to fix correct descriptors by imposing static unities of identity. As Georg Simmel (2010, 20) has observed astutely, "Sheer unity is an utterly feeble abstract concept." Simmel argues (2010, 37) that what guides the scientist's interest is not "the significance for life" but "the possibility of applying the forms of cognition, now seen as values in themselves, to the contents." Sensory scientists are less capable of exploring, identifying and describing the singularity of any coffee under examination, because their priority remains reaffirming their forms of cognition. Professional tasters are skeptical of inflexible definitions and are more interested in teaching each other what they need to know most, which is what it is that they do not know. For sensory scientists, the point of tasting protocols is to produce independent "objective" objects that are able to transcend any subjectivity, while the point of tasting protocols for professional tasters is to help them intensify the contact they make with the object, which is objectivity of a different sort. The senior Mexican taster Manuel Diaz observes perceptively, "Protocols make an important contribution to developing objective knowledge when they heighten our relationship with objects, instead of making the coffee more remote." There is no inherent objectivity to scores; what matters is how the forms are being used and what further local hermeneutic work a numerated descriptor may prompt. Accordingly, a score is not necessarily where the value of numeration lies; rather, its contribution may rest in *how the scores produce saliencies that attract parties' attention and further collaboration*.

Professional tasters suggest that learning to use the tasting form consists of much more than learning how to use it to define a coffee; rather, it can be employed to carry the taster more deeply into a coffee, thereby enhancing one's understanding of that cup of coffee. During the initial stages of drinking, a form can get in the way of the tasting, but after some

time it will become part of the agency of the taster, much in the way a blind person comes to integrate a cane into one's body. The form, the descriptors, and the lexicon of taste descriptors have their life as tools-in-use, and their value rests upon whether they facilitate discovering flavors. For this reason, tasting forms should be evaluated not by the convenient final abstracted results they produce but by the affordances they provide the taster, and this will depend upon how a taster uses the form.

In order to achieve their aims, professional tasters need to work collaboratively, and for them every tasting is a teaching worksite. Sensory scientists are individualists in their tasting. They work alone in isolated booths. This misconstrues how objectivity is created since objectivity is commonly the result of an intersubjective project. Further, any compulsory passivity can work against sensory aptitude. Sensory scientists' methods are aimed at reducing (if not outlawing) the indexicality and reflexivity of the descriptors, while professional tasters rely upon these properties. That the isolated booths are often painted white suggests a demotion of affective participation, which is a peculiar way to taste coffee. Professional tasters labor to enhance their sensory acumen, and their objectivity cannot be reduced to a practice of removing subjectivity and replacing it with a mechanical objectivity. Such an orientation assumes an incorrect ontology of tastes, one that considers tastes to be static even as the flavor is changing all the time. There is a bias among all tasters that favors coffees that are consistent; however, the specialty coffee industry that purveys the higher-end coffees enjoy being surprised by new or changing flavors. For them, developing fixed definitions for a coffee (read: already knowing everything) is not their only aim, and they display more humility about what they know, since their priority is discovering new tastes.

UNIVERSAL OBJECTIVITY AND PRACTICAL OBJECTIVITY

Sensory scientists are content to assign quantified results "to fundamental attributes of an object" (Lynch 1991, 77). And as Lynch describes, "Once such a correspondence between numbers and objective properties is established, the numbers can be manipulated via mathematical operations and the results assigned back to the measured phenomena." According to Simmel (2010, 37) scientific knowledge can redeem itself by causing whatever is discovered by the scientific method to be extracted from the formal apparatus and made again to "plunge into the teleological life-stream." Sensory scientists work from the outside-in, while most professional tasters work from the inside-out. While both apply metrological techniques, they apply them in different ways. Professional tasters are more cynical about numeration, but they still find them useful as indicators of where to begin probing a coffee. When they announce their scorings during their calibration sessions and any scorings differ radically, a salience appears that may be made the focal point for productive collaboration among the professional tasters.

Numerated evaluations that emerge from the discussions during calibration sessions, or that emerge from one's palate gradually discovering a taste's properties and increasing one's appreciation, will have an itinerary in the hands of knowledgeable tasters. As one identifies and grasps some flavor more clearly, it can happen that a taster's esteem for that flavor will grow, and its numerated values will rise. In this manner, the objectively numerated flavor of a

coffee can fluctuate according to the increasing acumen of the taster. Is this a subjectivity-free objectivity? Is there such a thing? Should there be such a thing?

Simmel (1978, 481) concludes that "the calculating character of modern times" has as its cognitive ideal "to conceive of the world as a huge arithmetical problem, and to conceive events and the qualitative distinction of things as a system of numbers." This is well demonstrated by the way the worldwide coffee industry adjusts its cupping forms by means of an arbitrary design process directed to producing a 100 figure as an artifact of the form, even though few of the standard cupping forms offer numerations that actually reach a total of 100. Generally, a score below 80 is considered sub-quality, while a score above 86 is considered very good, and these numerical values hold throughout the world, no matter which tasting conventions and schedules has generated the numbers. The Cup of Excellence form uses eight categories that receive eight points each, for a total of 64 points, to which 36 points are added arbitrarily to make the even 100 (the final score can be reduced by penalties for defects). The Espresso Cupping Form (ECF), used by the Specialty Coffee Association in Europe for certifying espressos as "specialty" coffees, evaluates eleven categories each of which can earn seven points each, for a total of 77 points, to which 23 points are added to make the 100 points. The Specialty Coffee Association form offers a selection of between 6 and 10 for each of seven categories (presumably coffees unable to earn a score of 6 would never make it as far as SCA's cupping tables) plus an additional fifteen points are possible for sweetness, clean cup, and uniformity for a potential total of 85, which then also requires the arbitrary addition of points to reach the 100 total. Accordingly, each form affords the coffees under assessment a different starting premium (up to 36 points); however, this discrepancy is rarely mentioned. The standard basis of an even 100 points offers the appearance of objective precision, but this is a human artifact, and the resulting scores are dependent upon the contingencies of local procedures.

No matter how tidy sensory science's predefined descriptors are, a unique coffee can rip that sense right out of the taster's hands and turn familiar descriptors into novel, unanticipated but nevertheless specified things. Professional tasters reserve more scope for directing each other to witnessable saliencies of taste, and numerical assessments can play a role in this hermeneutic task. New species of *Coffea* are being discovered where they grow naturally in the Ethiopian, Kenyan, and Ugandan forests; there are new hybridizations that agronomists are breeding in laboratories in Africa and Latin America, so there is no need to freeze flavors in their definitions. I had the good fortune of attending an early tasting of Panamanian gesha coffees at a Best of Panama competition. These were coffees that tasted like a basket of flowers or fruits like papaya and ripe pineapple. Competent tasters attempted to lasso such wild flavors with their predefined descriptors but most gave up on the attempt. A senior taster complained about "that crazy table" of coffees. Another taster reported, "It got harder to distinguish them after tasting them all on a revisit." Such crazy coffees can pose a challenge to a sensory science that is reluctant to leave its categorizations behind.

This character is evident in the way that the Sensory Lexicon (World Coffee Research 2016: 6) directs its definitions of taste descriptors to measured features. For example, the Sensory Lexicon boasts, "When the sensory lexicon is used properly by trained sensory professionals, the same coffee evaluated by two different people—no matter where they are, what their prior taste experiences are, what culture they originate from, or any other differences among

them—will achieve the same intensity score for each attribute. An evaluation in Texas will get 'blueberry flavor: 4' just the same as one in Bangalore." This is a positivist's dream. Coffee tasters I have met in Bangalore and Mysore have complained to me that they feel coerced to make their sensory assessments and coffees conform with a predefined set of descriptors that was developed in Europe and America.

Professional tasters everywhere recognize that while their protocols can produce quantitative measures that offer some assistance, it is filled with blind spots. The thing about blind spots is that one may not know one has them. It is necessary to be organized when tasting, in order to recall all the necessary inquiries one must sustain, as well as to apply the same standards to each coffee being assessed. And it is important is to record one's insights before they are forgotten, to employ the form in ways that facilitate the probing of a coffee, and to be consistent about one's tasting. The requirement that one be organized reveals that rationality and local orderliness are close cousins, with the former frequently being a convenient means for the latter's success. There is a preference for objectivity not simply because of a concern for truth, or on behalf of "science," but because objective standards and objective methods can make it clear what each person needs to do in order to move through the local interaction without getting into trouble. However, one also needs to avoid dominating (and thereby predetermining) the possibilities of tastes by too much a priori regulation.

The point is to taste the coffee, not to dominate it. For this, one requires openness as much as organization. Too much discipline can lead to blindness instead of knowledge. Professional tasters constantly need to exceed their measurement tools in order to fully reckon with what is unexpected, whereas sensory scientists can be more imprisoned within their metrological regimes. It is the ambition of most sensory scientific methods to establish epistemic instruments that can operate independently of the user and without further adaptation to any coffee being examined, in the hope that such an epistemic instrument can establish the object truly. Part of the praxis of scientific investigations is to turn a methodologically-induced objectivity (Liberman, 2022, 79) into "facts" that can stand on their own independently of the methods used; however, facts are tied to those methods. Lynch (1993, 94) explains that an important step in science is to free data from the circumstances of its production, cut loose from its generative local origins. But this only injects amnesia into the research and risks losing the phenomenon.

CONCLUSION

Bringing matters under control is good for communication and for organizing the orderliness of a course of interaction, but it may not be the best way to make discoveries, nor the best way to enjoy coffee. Sensory science may have both the epistemology and the ontology wrong; and even while some professional tasters seem ready to defer to sensory science, they experience a discomfort which makes them hesitate. Professional tasters begin and end with the coffee, while most sensory scientists begin and end with their methodology. It is part of proper science to be continually preoccupied with one's practice of science; this is in order to neutralize any bias that may keep creeping into one's analyses. A concern with methodology is to be commended so long as one does not lose the phenomenon. The most important difference that my research has revealed is that professional tasters are less likely to lose the phenome-

non. The irony here is that despite the professional tasters' significant accomplishment, they are mostly apologetic about it. An ethnomethodological examination of their situated work reveals that they do not need to be.

How does one keep oneself from distorting the taste by the way one is organizing one's understanding, while simultaneously using these analytic capabilities to gain an enhanced appreciation of the flavor? How does one make tastes, even ones that are elusive, intelligible, noticeable, and available for discussion and collaborative assessment, without burying the taste beneath a tasting protocol or rendering the tastes so tamed and hemmed in by the categories of identification one is applying to them that the taste will disappear from the scene? This is a version of the enduring anthropological question of how *Homo sapiens* should go about employing the formalization of rational analytic strategies—our eminent human trait—in the service of knowledge.

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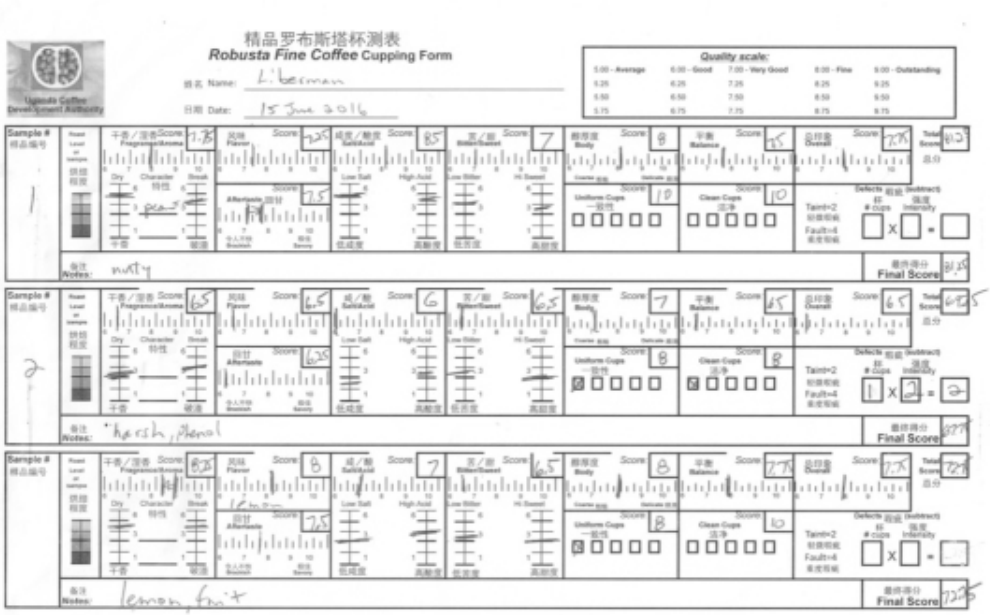
APPENDIX



精品罗布斯塔杯测表
Robusta Fine Coffee Cupping Form

Uganda Coffee Development Authority

Name: L. Iberman

Date: 15 Jun 2016

Quality scale:

5.00 - Average	6.00 - Good	7.00 - Very Good	8.00 - Fine	9.00 - Outstanding
5.25	6.25	7.25	8.25	9.25
5.50	6.50	7.50	8.50	9.50
5.75	6.75	7.75	8.75	9.75

Sample #	Fragrance/Aroma	Flavor	Aftertaste	Salt/Acid	Bitter/Sweet	Mouthfeel Body	Balance	Overall	Total Score	Uniform Cups	Clean Cups	Defects (subtract) Taint=2 Fault=4	Final Score
1	7.75	7.75	7.5	8.5	7	8	7.5	7.75	81.5	10	10		81.5
2	6.5	6.5	6.25	6	6.5	7	6.5	6.5	67.5	8	8	1 X 2 = 2	67.5
3	6.75	8	7.5	7	6.5	8	7.75	7.5	72.5	8	10		72.5

Notes: nutty

Notes: harsh, phenol

Notes: lemon, fruit

F00145 20-01-2015

Test af råkaffe

Dato: Ref. fra lev.:_____

Kvalitet: _____

Vareprøve: ☐ Afskibningsprøve: ☐ Andet: ☐

Smagere:			
Råbønne: 1(bad) 5 (good)			
Ristning: 1(uneven) 5 (fine)			
Syrlighed: G (good) F (fair) S (slight) N (none)			
Krop: F (full) GB (good) FB (fair) SB (slight)			
Aroma: SP(special) GF(good) N(nice) FF(fair) SF(slight)			

Renhed (beskrivelse):									

Offtaste	Fermented				Foul				Chemical			
	Fruity				Earthy				Oldish			
	Winey				Mouldy				Harsh			
	Sour				Mysty				Others			
Robusta	Neutral											
	Fairly Neutral											
	Moderate robusta taste											
	Normal robusta taste											
	Strong robusta taste											

Afvist: ☐ Godkendt: ☐ Andet: ☐

Bemærkninger:_____

Anvendelse: