Supplemental Material for:

**Five-Star Prices, Appealing Healthy Item Descriptions? Expensive Restaurants’ Descriptive Menu Language**

Bradley P. Turnwald\*, Kathryn G. Anderson, Dan Jurafsky, & Alia J. Crum

\*correspondence to: turnwald@stanford.edu

**Table S1.**

*All Words in All Themes*

| Theme | Words in theme |
| --- | --- |
| Traditional | **country**, **house**, **housemade**, **house made,** **classic**, **tradition1**, **traditional**, **home1**, **homemade**, **signature**, **famous**, **American1**, **buttermilk,** **applewood**, **farm**, **field**, **bourbon**, **hickory**, **recipe**, **hearth,** **old**, **kitchen**, **harvest**, **favorite**, **heritage**, **rustic**, **scratch**, **original**, **barrel**, **campfire**, **smoky**, **smokey**, **club**, countryside, farmhouse, smokehouse, fixin’, clubhouse, Southern, authentic, true, generations, corralled, Southern charm, soothed, comfort, homestyle, sawmill, classics, favorites, genuine, kitchens, old fashioned, homestead, roadhouse, tavern, home style, county fair, sack lunch, American standard, tribute, tried to copy, for over 35 years, Southern style, *classically, faithful rendition, traditionally, Amish, domestic, fisherman, butcher, butchers* |
| Fun & Engaging | **dip,** **dipping**, **toppings**, **finger,** **boneless**, **bite**, **bites,** **piece, pieces**, **stickers**, **slider**, **sliders**, **skewer,** **skewers,** **skewered**, **sampler**, **stack,** **bits,** **rings,** **medallions**, **puff**, **tips**, **wedge**, **strings**, **strips**, **tots, shooters**, **ring**, **spears,** **slices,** crispers, topping, fingers, crisps, stacker, stacked, bubbly, scoop, bite-sized, sticks, build, dips, dipper, dipped, dippable, create, skins, snacks, tanglers, chunks, chunk, chunky, dollop, triangles, twists, links, straws, tenders, fun, fritters, shooter,scoops, handful, petals, slice, minis, wrappers, cubes, dome, squares, *rolling, tableside, crispies, tuile, fritter, pillow, spiral, brittle, cracklins, snow shoe, peel n’ eat, sammie, tendrils, stix, cracklings, cubed* |
| Texture | **crisp**, **crispy**, **creamy**, **crunch**, **crunchy**, **juicy**, **velvet**, **velvety**, **powdered**, **crusted**, **coated**, **curly,** **firm,** **flakes**, **silk**, **smooth**, **soft**, **tender**, **tenderness**, **breaded**, **crumb**, **crumbs**, **crumbled**, **crumble**, **crumbles**, **silky**, crisply, consistency, moist, flaky, gooey, chunk, chunks, chunky, flakier,fluff, fluffy, fluffed, silken, wavy, *fine, brothy, texture, foam, puffed, crisped, juiciest, prickly* |
| Exciting | **infused**, **tropical**, **twisted**, **street,** **unique**, **adventure**, **inspired**, **limited**, **rainbow**, **zest**, **power,** **butterflied**, **crushed**, **smashed**, **fiesta, trip1,** knock, swirled, rockin’, splash, ripped, thunder, turbo, feature, secret, kick, crazy, shaken, shaking, sizzlin’, sizzling, rooty tooty, jallelujah-spiced, new level, not just your standard, spellbinding, ragin’, bang, buzz, firecracker, blasts, festival, luau, slam, swirl, meltdown, overdrive, sombrero, transform, upgrade, featuring, dive, deepest, debut, twist, fiery, creation, boost, bloomin’, packs a punch, corkscrew, jammin’, jump, kaleidoscope, kickin’, magic, mojo, banzai, primetime, action, build, create, go wild, steel-drum band, you won’t find, high gear, surfer, heck-yeah, roll up your pants, roped, upside-down, wave, yeah baby, *exotic, balloon, charisma, enhanced, extravaganza, surprise, Underwater Picnic Plate, deconstructed, inspiration, flaming sword, flamed, extremely rare, creations, discovered, rarest, fairy tale, spiralized, gold rush, 5 kinds, eskimo clouds, orange rush, flaming, tour, smash, duo, trio, hook, line and sinker, drum, modern interpretation, ultra rare, smoking, helium, safari, chinatown, lightning, change of pace, new recipe, snowflake-like, not bound by tradition* |
| Taste | **spicy**, **sweet1**, **sour**, **salted**, **tangy**, **flavor**, **flavorful**, **flavourful**, **flavored**, **flavors**, **taste**, **delicious** tasty, taster, scrumptious, salty, deliciousness, deliciously, garlicky, sweetness, *herbal, scented, bitter, earthy, briny, robust, fragrant, burnt, tasting, piquant, nutty, buttery* |
| Spicy | **zesty**, **mesquite**, **chipotle, habanero,** **spicy**, fiery, buffalo1, firecracker, ragin’, kick, burnin’, seriously spicy, *atomic* |
| Fresh | **fresh**, **freshly,** *freshest*  |
| Social | **family,** **popular**, **granny**, everyone, people, smile, grinning, daddy, grandma, mom, mama, *grandmother, for two, to share, wife, gramma* |
| Thinness | **lean**, **light1**, **petite**, **lightly**, lighter, enlightened, skinnylicious, leanest, lighten, lites |
| American regional | **Southwest**, **southwestern** , **western**, **California**, **Maine**, **Hawaiian**, **NY**, **New York**, **Atlantic**, **Carolina**, **Napa,** **Texas**, **Boston**, **Wisconsin**, **Alaska**, **Alaskan**, **Louisiana,** **Pacific**, **Colorado**, **Kansas City,** **Nantucket,** **East coast,** **American1**, **Cajun,** Americana, Sedona, Daytona Beach, Idaho, Sierra, Baltimore, Bayou, Cali, New Orleans, Dakota, Southern, Hollywood, Nashville, Californian, Smoky Mountain, St. Louis, Brooklyn, northern1, Philly, North Beach, Key West, Bourbon Street, Santa Fe, coastal, *San Francisco, Oregon, Sonoma, New Jersey, New Bedford West coast, Seattle, Florida, Aspen, Ellensburg, Nebraska, Northwest, Pennsylvania, Wyoming, Houston, Skagit, Tacoma, USA, Washington, Waynesburg, Willamette, Hudson, Washburn, Point Reyes, Barron Point, Point Judith, Omaha, Chicago, WY, CA, NV, MA, MT, New England, Monterey Bay, Charleston, Long Island, Manhattan, Lake Erie, Maryland, Totten Inlet, Casco Bay, Neah Bay, Rhode Island, Dutch Harbor, Humboldt, Rocky Mountain, Kauai, Arizona, Petaluma, Miami beach, Waco, Santa Barbara* |
| Indulgent | **prime**, **sweet1**, **crispy**, **creamy**, **melted**, **full of,** **buttery**, **crunchy**, **glazed**, **glaze**, **juicy**, **rich**, **smothered**, **velvety**, **stuffed**, **loaded**, **caramelized**, **filled**, **thick**, **powdered,** **savory**, **aromatic**, **bliss**, **buttered**, **succulent**, **treat, ultimate,** **enjoy,** **candied**, **lover**, **creamed**, **battered**, **marinated**, **specialty**, **everything1**, **love**, **supreme,** cheesy, chocolaty, marbled, trimmings, crowned, dream, feast, fluffed, galore, meaty, hungry, mouthful, indulge, moist, flaky, gooey, indulgent, layer, overstuffed, fill, filling, layered, layers, pile, piled, hearty, chunky, covered, richest**,** enjoying, melting, mouthwatering, cravers, decadent, gobble up, both at once, why settle, the works, king would approve, *delicacy, essence, brandied, complete happiness, sumptuous, depth, marbling, fullest, king of steaks, elysian, caramelzed, carmelized, fall off the bone, the Rolls Royce, juiciest* |
| Artisan | **artisan**, **craft,** **hand-cut,** **hand-breaded,** **hand-folded**, **organic**, **aged**, **grade**, **premium**, **delicate**, **natural1**, **finest**, **handmade**, **slow**, **slowly**, **fancy**, **imperial**, **certified**, **market**, **thinly**, **gourmet**, **peak**, hand-made, culinary, pure, handbreaded, refined, hand-crafted, hand-chopped, hand battered, hand dipped, hand tossed, hand-wrapped, hand-rolled, by hand, hand-pressed, hand-prepared, hand-twisted, hand-shucked, crafted, handcrafted, hand-carved, hand seasoned, *hand-torn, artisans, hand shaved, gently, overnight, house picked, royale, hand harvested, hand filleted, hand selected, hand formed, selected, delicately, foraged, imported, expertly, higher level, distinctive, reserve, royal, house cured, micro, flown in, custom* |
| Provocative | **dynamite**, **sharp**, **insane**, **explosion**, **flame,** **dirty,** **goddess, velvety,** **love**, **mad, cowboy**, dark, volcano, extreme, molten, fiery, thunder,lava, ninja, piranha, vampire, wildfire, ghost, renegade, wild west, outlaw, naked, decadent, gooey, moist, temptation, dangerous, bold, boldly, sinful, envy, burnin’ love, diavolo, crazy, brace for the stampede, dare ya, beat of your heart, icy waters, garden of eatin’, gloves not required, aren’t wearing gloves, could get messy, see if you can hang on, heart throb, not for the weak of tongues, lip-smoking, masquerades, ooh-la-la, outrageous, no rules, have you seeing things, the usual suspects, tuxedo, *beyond, forbidden, kissed by the grill, ugly, volcanic, flaming sword, crack crack crack, intense, evil, pitchfork, grazing vegetarians, killer, moody, angry, what’s the dill yo, dragon, spider, peewee, unknown, serious, prickly, atomic* |
| Vague Positive | **great1**, **perfect**, **perfectly**, **perfection**, **favorite**, **wonderful**, **love**, **special**, **best,** **prized**, **popular**, better, specially, exceptional, iconic, legendary, amazing, bravo, championship, fabulous, good1, unforgettable goodness, grinning, perfected, sensation, super, groovy, loved, nice, tremendous, worthy, can’t be beat, can’t be messed with, tough to beat, five-star, five stars, wow, *delight, winner, extraordinary, never forget, remarkable, champion, impressive* |
| Simple | **simple**, **dry1**, **mild**, **simply,** plain, mildly |
| Deprivation | under1, non-fat, fat free, low-fat, sugar-free, no sugar added, fat-free, less than, low carb, reduced-fat, *non-sweet* |
| Size | **double**, **thick**, **deluxe**, **giant**, **extra1**, **grand1**, **tower**, **monster,** **jumbo**, **big**, **large1**, **more1**, full of1, brawny, buff, mammoth, grande, towering, maximum, plump, portion, pile, huge, larger, Big Poppa, king-sized, piled, lots, triple, decker, hearty, enormous, plenty, loads, gigantic, biggest, mega, generous, heaping, bottomless, unlimited, even more, fully loaded, lumberjack, hearty man, stacked to the rafters, the works, full half-pound, exxxxtra, enough for two, enough of a mouthful, *bounty, as big as you like, colossal, gigantes, chock full, bucket of, hanging off the plate, cannot eat another bite* |
| Vague Positive | **great1**, **perfect**, **perfectly**, **perfection**, **favorite**, **wonderful**, **love**, **special**, **best,** **prized**, **popular**, better, specially, exceptional, iconic, legendary, amazing, bravo, championship, fabulous, good1, unforgettable goodness, grinning, perfected, sensation, super, groovy, loved, nice, tremendous, worthy, can’t be beat, can’t be messed with, tough to beat, five-star, five stars, wow, *delight, winner, extraordinary, never forget, remarkable, champion, impressive* |
| Choice | **choice1**, **choose,** **your own**, **your liking,** **your favorite,** **you like,** **variety**, **request**, **requested,** alternative, choosing, way you want, any style, substitute, specifications**,** options, pick, your way, choices, select1 |
| Farm | **farm**, **farms**, **farmer**, **farmers**, **farm raised**, **field**, **harvest**, **organic**, **country**, **natural**1, **ripe**, **raised**, **seasonal**, **free-range**, **wild**1, **garden**, **root**1, **sprouted,** farmhouse, vine-ripened, countryside, smokehouse, sawmill, cage free, cage-free, groves, *creek, locally, grown, local, valley, harvested, marina, grass fed, caught, sky, prairie,*  |
| Foreign | **Asian**, **Italian**, **French**, **Tuscan**, **Thai**, **Mexican**, **Belgian**, **Baja,** **Mediterranean**, **Mongolian**, **Korean**, **Jamaican**, **Sichuan**, **Mandarin**, **Greek**, **Chinese**, **Danish**, **Caribbean**, **Canadian**, **Montreal**, **Bolognese**, **Chilean**, **Cuban**, **Dutch1**, **English**, **Fuji**, **Italy**, **Milanese**, **Moroccan**, **Norwegian**, **Spanish**, **Swiss**, **New Zealand,** **Arctic**, **Marsala**, **Yukon,** **Calabrian**, **Florentine**, **Madeira**, **Toscana**, Saigon, Swedish, Sydney, Oriental, Aussie, Argentinean, Sicilian, German, Hunan, Bavarian, Italiano, British, Vietnamese, England1**,** Paris, Shanghai, Siciliani, Cantonese, Singapore, Westminster, Toscano, *Mexico, Belgium, Berkshire, Peruvian, Russian, Tokyo, Japanese, Oaxacan, Venetian, Welsh, Arcadian, South American, South Africa, South African, Japan, Persian, France, Mexicana, Australian, Brazil, Brazilian, Hungarian, Israeli, Madagascar, Parisian, Argentina, European, Icelandic, Nicoise, Normand, Siberian, Tasmanian, Turkish, Nova Scotia, Veneziana, Yucatan, Scottish, BC, Manila, Mexicano, Sevilla, Szechuan, Roman, Portuguese, Lyonnaise, Parisienna, Dauphinoise, Jurassienne, Bruxelles, Hokkaido, Mayan, Shetland Island, Capetown, Faroe Island, Osaka, Bay of Fundy, Yemenite, Burgundy, Ecuadorian, Cubanas, Provencal, Provencale, Malaysian, Tahitian, San Marzano, Hong Kong, Kyushu Island, Kumamoto, Chihuahua, Himalayan, Parisienne* |
| Macronutrients | **whole wheat, whole-grain, three grain, monounsaturated fats,** carb, fiber, fat1, grain1, grains1, grained, multigrain, protein |
| Nutritious | wholesome, nutritional, fit1, fit-fare, healthy, *superfood, health* |

1 words that had at least one occurrence that was not representative of the theme context and therefore excluded from the frequency

2**Bold** = Occurred in both Expensive and Inexpensive Restaurants

3Non-italics = Occurred in Inexpensive Restaurants only

*4Italics* = Occurred in Expensive Restaurants only

**Table S2.**

*Inexpensive Restaurants Sample*

| Restaurant | 2015 Sales Rank | Total Sales (billions $) | Restaurant Type |
| --- | --- | --- | --- |
| Applebee's | 10 | 4.6 | American |
| Panera Bread | 11 | 4.3 | Sandwich, Salad, Soup |
| Olive Garden  | 16 | 3.8 | Italian |
| Chili's  | 17 | 3.6 | American/Tex-Mex |
| IHOP | 23 | 2.9 | Breakfast and Brunch |
| Denny's | 25 | 2.5 | Breakfast and Brunch |
| Outback Steakhouse | 26 | 2.5 | Steakhouse |
| Red Lobster | 28 | 2.4 | Seafood |
| Cracker Barrel | 30 | 2.1 | Breakfast and Brunch |
| Cheesecake Factory | 35 | 1.8 | American |
| Longhorn Steakhouse | 39 | 1.5 | Steakhouse |
| Red Robin | 41 | 1.4 | American |
| Ruby Tuesday's | 45 | 1.2 | American |
| Bob Evans | 49 | 0.96 | Breakfast and Brunch |
| PF Chang's | 51 | 0.88 | Asian Fusion |
| BJ's Brewhouse | 53 | 0.85 | American |
| Hooter's | 55 | 0.84 | American |
| Carrabba's | 60 | 0.71 | Italian |
| Logan's Roadhouse | 61 | 0.71 | Steakhouse |
| Cheddar's | 63 | 0.67 | American |
| California Pizza Kitchen | 69 | 0.63 | American |
| Perkins | 70 | 0.63 | Breakfast and Brunch |
| Yard House | 91 | 0.48 | American |
| Joe's Crab Shake | 94 | 0.43 | Seafood |
| Maggiano's Little Italy | 97 | 0.41 | Italian |
| Big Boy | 100 | 0.39 | American |

*Note*. Sales data based on 2015 top 100: Growth in chain U.S. systemwide sales. (2015, June 19). *Nation’s Restaurant News*. Retrieved from http://www.nrn.com/us-top- 100/2015-top-100-growth-chain-us-systemwide-sales

**Table S3.**

*Theme Differences in Healthy vs. Standard Item Descriptions in Inexpensive Restaurants*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Theme | Odds ratio [95% CI] | Log likelihood | Frequency in healthy items (% of words) | Frequency in standard items (% of words) |
| Words more likely to occur in standard item descriptions |
| Exciting | 2.91 [1.54, 5.51] | 15.05\*\*\* | 0.17 | 0.50 |
| American region | 2.03 [1.36, 3.04] | 14.88\*\*\* | 0.44 | 0.90 |
| Fun & engaging | 2.00 [1.53, 2.61] | 32.09\*\*\* | 1.00 | 2.01 |
| Traditional | 1.99 [1.58, 2.51] | 42.23\*\*\* | 1.35 | 2.68 |
| Texture | 1.93 [1.48, 2.51] | 28.61\*\*\* | 1.02 | 1.97 |
| Spicy | 1.73 [1.18, 2.54] | 9.35\*\* | 0.49 | 0.86 |
| Artisan | 1.68 [1.10, 2.56] | 6.82\*\* | 0.41 | 0.69 |
| Taste | 1.48 [1.08, 2.03] | 6.84\*\* | 0.75 | 1.11 |
| Indulgent | 1.35 [1.12, 1.62] | 11.11\*\*\* | 2.21 | 2.98 |
| No difference in standard items vs. healthy items |
| Provocative | 1.55 [0.78, 3.09] | 1.79 | 0.15 | 0.24 |
| Size | 1.32 [0.92, 1.88] | 2.45 | 0.58 | 0.76 |
| Vague positive | 1.19 [0.71, 1.97] | 0.46 | 0.29 | 0.34 |
| Choice | 1.17 [0.84, 1.63] | 0.87 | 0.68 | 0.80 |
| Farm | 0.86 [0.62, 1.19] | 0.85 | 0.73 | 0.63 |
| Foreign | 0.82 [0.66, 1.03] | 2.85 | 1.62 | 1.33 |
| Social | 0.33 [0.11, 0.95] | 3.59 | 0.09 | 0.03 |
| Words more likely to occur in healthy item descriptions |
| Fresh | 0.74 [0.58, 0.94] | 5.64\* | 1.41 | 1.05 |
| Simple | 0.33 [0.17, 0.63] | 9.32\*\* | 0.22 | 0.07 |
| Macronutrients | 0.11 [0.07, 0.17] | 83.71\*\*\* | 0.75 | 0.08 |
| Thinness | 0.10 [0.07, 0.15] | 128.16\*\*\* | 1.11 | 0.11 |
| Deprivation | 0.02 [0.01, 0.07] | 83.56\*\*\* | 0.46 | 0.01 |
| Nutritious | 0.01 [0.00, 0.03 | 180.31\*\*\* | 0.85 | 0.01 |

*Note*. Odds ratios were calculated by dividing the normalized frequency of the standard corpus by the normalized frequency of the healthy corpus. Values for inexpensive restaurants in this table differ slightly from those published in Turnwald, Jurafsky, et al (2017) because 158 dessert items were removed. CI = Confidence interval. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

**Table S4.**

*Menu Item Composition in Inexpensive and Expensive Restaurants*

|  |  |
| --- | --- |
| Inexpensive Restaurants | Expensive Restaurants |
| Item type | Freq. | Percent |  | Item type | Freq. | Percent |
| Sandwich | 340 | 14.2 |  | Seafood | 821 | 24.9 |
| Seafood | 307 | 12.8 |  | Steak/Beef | 466 | 14.1 |
| Breakfast | 243 | 10.2 |  | Vegetables  | 462 | 14.0 |
| Salad | 228 | 9.5 |  | Salad | 453 | 13.7 |
| Chicken/Poultry | 224 | 9.4 |  | Pastas/Grains | 240 | 7.3 |
| Vegetables | 180 | 7.5 |  | Other | 213 | 6.5 |
| Pastas/Grains | 176 | 7.4 |  | Chicken/Poultry | 183 | 5.6 |
| Other | 164 | 6.9 |  | Sushi | 109 | 3.3 |
| Steak/Beef | 147 | 6.2 |  | Pork | 106 | 3.2 |
| Soup | 88 | 3.7 |  | Lamb | 82 | 2.5 |
| Pizza | 75 | 3.1 |  | Soup | 48 | 1.5 |
| Tex-Mex  | 59 | 2.5 |  | Sandwich | 44 | 1.3 |
| Pork | 54 | 2.3 |  | Pizza | 33 | 1.0 |
| Asian small plates | 37 | 1.5 |  | Steak & Seafood | 27 | 0.8 |
| Dips and chips | 35 | 1.5 |  | Tofu | 8 | 0.2 |
| Steak & Seafood | 23 | 1.0 |  |  |  |  |
| Sushi | 10 | 0.4 |  |  |  |  |

*Note.*Frequencies represent combined frequencies from both healthy and standard items, and do not include desserts.Total number of items for inexpensive restaurants = 2,390, expensive restaurants = 3,295. Categories with fewer than 8 items were included in Other. Items categorized as Other at inexpensive restaurants included combination plates, sampler plates, cheese sticks, pot pies, appetizers, and yoghurt. Items categorized as Other at expensive restaurants included antelope, escargot, goat, poutine, foie gras, sampler plates, and “choose your own” combinations. Asian small plates refers to items such as dumplings, spring rolls, lettuce wraps, wontons, and egg rolls. Tex-mex includes items such as tacos, burritos, nachos, and enchiladas.

**Table S5.**

*Theme Differences in Standard vs. Healthy Item Descriptions at Expensive Restaurants*, *Separately for Healthy Salad and Healthy Vegetable Dishes*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Theme | Standard Items vs. Healthy Salads OR [95% CI] | Standard Items vs. Healthy Vegetables OR [95% CI] | Frequency in Healthy Salads (% of words) | Frequency in Healthy Vegetables (% of words) | Frequency in Standard Items (% of words) |
| Exciting | 3.74 [1.52, 9.19] | 1.79 [0.79, 4.09] | 0.11 | 0.22 | 0.40 |
| Vague positive | 3.59 [0.87, 14.88] | 1.38 [0.42, 4.46] | 0.04 | 0.11 | 0.15 |
| Size | 3.44 [1.40, 8.46] | 1.65 [0.72, 3.77] | 0.11 | 0.22 | 0.36 |
| American region | 3.38 [2.15, 5.31] | 19.46 [4.84, 78.15] | 0.42 | 0.07 | 1.43 |
| Spicy | 2.75 [1.28, 5.92] | 1.58 [0.74, 3.41] | 0.15 | 0.26 | 0.41 |
| Thinness | 2.55 [0.61, 10.73] | 1.47 [0.35, 6.17] | 0.04 | 0.07 | 0.11 |
| Artisan | 1.50 [1.08, 2.09] | 1.82 [1.14, 2.90] | 0.85 | 0.70 | 1.27 |
| Provocative | 1.35 [0.58, 3.18] | 2.34 [0.57, 9.65] | 0.13 | 0.07 | 0.17 |
| Foreign | 1.33 [1.00, 1.77] | 1.56 [1.05, 2.31] | 1.16 | 0.99 | 1.54 |
| Choice | 0.85 [0.39, 1.83] | 0.65 [0.27, 1.55] | 0.17 | 0.22 | 0.14 |
| Texture | 0.80 [0.61, 1.06] | 0.78 [0.55, 1.09] | 1.31 | 1.36 | 1.05 |
| Farm | 0.79 [0.59, 1.04] | 0.53 [0.39, 0.72] | 1.26 | 1.87 | 1.00 |
| Fresh | 0.57 [0.37, 0.89] | 1.43 [0.62, 3.29] | 0.55 | 0.22 | 0.32 |
| Fun & engaging | 0.38 [0.27, 0.53] | 1.69 [0.79, 3.64] | 1.14 | 0.26 | 0.43 |
| Traditional | 0.51 [0.40, 0.66] | 1.78 [1.04, 3.05] | 1.77 | 0.51 | 0.91 |
| Indulgent | 1.34 [1.06, 1.70] | 0.64 [0.51, 0.79] | 1.67 | 3.52 | 2.24 |
| Taste | 3.42 [1.86, 6.28] | 0.72 [0.49, 1.06] | 0.23 | 1.10 | 0.79 |
| Macronutrients | 0.57 [0.11, 2.81] |  | 0.04 | 0.00 | 0.02 |
| Nutritious | 0.09 [0.01, 1.04] |  | 0.04 | 0.00 | 0.00 |
| Simple | 0.76 [0.16, 3.56] |  | 0.04 | 0.00 | 0.03 |
| Social | 0.79 [0.30, 2.10] |  | 0.11 | 0.00 | 0.08 |
| Deprivation |  |  | 0.00 | 0.00 | 0.00 |

*Note*. Odds ratios (OR) in column 2 were calculated by dividing the normalized frequency of the expensive restaurant standard corpus (total words = 25,059) by the normalized frequency of salads that were coded as healthy (*n* = 431 items, *n* = 4,733 words). Odds ratios (OR) in column 3 were calculated by dividing the normalized frequency of the expensive restaurant standard corpus (total words = 25,059) by the normalized frequency of vegetables that were coded as healthy (*n* = 416 items, *n* = 2,724 words). CI = Confidence interval.

**Table S6.**

*Theme Differences in Seafood Item vs. Red Meat Item Descriptions at Expensive Restaurants*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Theme | Red Meat Items vs. Seafood Items OR [95% CI] | Log likelihood | Frequency in Seafood Items (% of words) | Frequency in Red Meat Items (% of words) |
| Words more likely to occur in red meat dishes (less healthy) |
| Choice | 8.53 [1.94, 37.54] | 12.65\*\*\* | 0.02 | 0.21 |
| Social | 4.26 [0.30, 2.10] | 4.02\* | 0.02 | 0.10 |
| Artisan | 2.81 [2.10, 3.77] | 53.44\*\*\* | 0.79 | 2.22 |
| Vague positive | 2.30 [1.03, 5.17] | 4.34\* | 0.11 | 0.25 |
| Traditional | 1.94 [1.32, 2.86] | 11.79\*\*\* | 0.51 | 0.99 |
| Indulgent | 1.64 [1.06, 1.70] | 22.62\*\*\* | 1.95 | 3.19 |
| No difference in red meat versus seafood dishes |
| Thinness | 2.09 [0.61, 10.73] | 2.50 | 0.09 | 0.18 |
| Fun & engaging | 1.47 [0.86, 2.53] | 1.98 | 0.29 | 0.43 |
| Provocative | 1.42 [0.58, 3.18] | 0.80 | 0.15 | 0.21 |
| Macronutrients | 1.22 [0.11, 2.81] | 0.04 | 0.02 | 0.03 |
| American region | 1.12 [0.89, 1.42] | 0.92 | 1.81 | 2.03 |
| Farm | 1.02 [0.72, 1.45] | 0.01 | 0.83 | 0.85 |
| Texture | 0.99 [0.73, 1.35] | 0.00 | 1.11 | 1.10 |
| Exciting | 0.69 [0.38, 1.25] | 1.53 | 0.37 | 0.25 |
| Deprivation | NA | 1.20 | 0.01 | 0.00 |
| Nutritious | NA | 1.59 | 0.00 | 0.01 |
| Size | 0.65 [0.39, 1.10] | 2.68 | 0.50 | 0.33 |
| Simple | 0.24 [0.16, 3.56] | 2.18 | 0.06 | 0.01 |
| Words more likely to occur in seafood dishes (healthier) |
| Foreign | 0.61 [0.46, 0.80] | 13.37\*\*\* | 1.90 | 1.16 |
| Taste | 0.55 [0.38, 0.81] | 10.04\*\* | 1.05 | 0.58 |
| Fresh | 0.39 [0.19, 0.80] | 7.53\*\* | 0.38 | 0.15 |
| Spicy | 0.27 [0.14, 0.50] | 22.05\*\*\* | 0.67 | 0.18 |

*Note*. Odds ratios (OR) were calculated by dividing the normalized frequency of the expensive restaurant red meat dish corpus (steaks, pork, and lamb; total words = 6,745) by the normalized frequency of seafood dish corpus (total words: 8,219). CI = Confidence interval. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

**Table S7.**

*Theme Differences in Standard Item Descriptions at Inexpensive vs Expensive Restaurants*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Theme | Odds ratio [95% CI] | Log likelihood | Frequency in inexpensive restaurants (% of words) | Frequency in expensive restaurants (% of words) |
| Words more likely to occur in inexpensive restaurants |
| Choice | 5.53 [3.91, 7.83] | 141.06\*\*\* | 0.80 | 0.14 |
| Fun & engaging | 4.62 [3.78, 5.66] | 313.06\*\*\* | 2.01 | 0.43 |
| Macronutrients | 3.36 [1.39, 8.08] | 9.22\*\* | 0.08 | 0.02 |
| Fresh | 3.33 [2.61, 4.25] | 119.42\*\*\* | 1.05 | 0.32 |
| Traditional | 2.93 [2.54, 3.39] | 260.15\*\*\* | 2.68 | 0.91 |
| Vague positive | 2.27 [1.57, 3.26] | 22.06\*\*\* | 0.34 | 0.15 |
| Simple | 2.26 [1.02, 4.98] | 4.59\* | 0.07 | 0.03 |
| Spicy | 2.10 [1.68, 2.63] | 47.25\*\*\* | 0.86 | 0.41 |
| Size | 2.10 [1.65, 2.66] | 41.83\*\*\* | 0.76 | 0.36 |
| Texture | 1.87 [1.63, 2.16] | 82.35\*\*\* | 1.97 | 1.05 |
| Taste | 1.40 [1.18, 1.66] | 15.50\*\*\* | 1.11 | 0.79 |
| Indulgent | 1.33 [1.20, 1.48] | 31.06\*\*\* | 2.98 | 2.24 |
| No difference in expensive vs. inexpensive restaurants |
| Deprivation | 2.78 [0.31, 24.85] | 1.00 | 0.01 | 0.00 |
| Provocative | 1.39 [0.96, 2.00] | 3.19 | 0.24 | 0.17 |
| Nutritious | 1.39 [0.13, 15.31] | 0.07 | 0.01 | 0.00 |
| Exciting | 1.26 [0.98, 1.61] | 3.36 | 0.50 | 0.40 |
| Thinness | 1.03 [0.63, 1.68] | 0.01 | 0.11 | 0.11 |
| Words more likely to occur in expensive restaurants |
| Foreign | 0.86 [0.75, 0.99] | 4.64\* | 1.33 | 1.54 |
| Farm | 0.63 [0.52, 0.75] | 25.73\*\*\* | 0.63 | 1.00 |
| American region | 0.63 [0.54, 0.73] | 36.26\*\*\* | 0.90 | 1.43 |
| Artisan | 0.54 [0.46, 0.64] | 52.97\*\*\* | 0.69 | 1.27 |
| Social | 0.33 [0.16, 0.70] | 9.03\*\* | 0.03 | 0.08 |

*Note*. Themes are organized by odds ratio from overrepresentation in descriptions of standard menu items at inexpensive restaurants (top section) to overrepresentation in descriptions of standard items at expensive restaurants (bottom section). Themes in the center section showed no significant difference by restaurant type. Odds ratios were calculated by dividing the normalized frequency of the inexpensive restaurant standard corpus by the normalized frequency of the expensive restaurant standard corpus. CI = Confidence interval. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

**Figure S1.**

*Valence and Arousal Ratings for Descriptive Themes*

**

*Note.*Points represent the mean valence and mean arousal rating for each theme, based on the valence and arousal ratings of all words in that theme from expensive restaurant menus. Valence and arousal ratings were drawn from the National Research Council Canada (NRC) Valence, Arousal, and Dominance lexicon (Mohammad, 2018). This database contains a valence and arousal rating for over 20,000 English words ranging from 0 (lowest) to 1 (highest). In the present research, the 16 themes that scored above the mid-point for valence are referred to as appealing themes.