

Supplemental Table S1. Japanese word stimuli (transliteration).

| Word list 1 | Word list 2 | Word list 3 | Word list 4 |
|-------------|-------------|-------------|-------------|
| ヌヨ (nuyo) | ワユ (wayu) | ヌセ (nuse) | ヌニ (nuni) |
| ネケ (neke) | ヘオ (heo) | ムヌ (munu) | メフ (mefu) |
| ルエ (rue) | ルヨ (ruyo) | ロユ (royu) | ケネ (kene) |
| ツセ (tsuse) | テハ (teha) | ヌチ (nuchi) | ヌネ (nune) |
| ネユ (neyu) | ヘネ (hene) | ヘヨ (heyo) | ホヒ (hohi) |
| ムワ (muwa) | メヘ (mehe) | メワ (mewa) | ラヘ (rahe) |
| ラユ (rayu) | リワ (riwa) | ルモ (rumo) | ルラ (rura) |
| レヌ (renu) | レメ (reme) | ロワ (rowa) | エウ (eu) |
| ケメ (keme) | セヘ (sehe) | ソヌ (sonu) | テヨ (teyo) |
| ナネ (nane) | ヌオ (nuo) | ヌテ (nute) | ヌヤ (nuya) |
| ネセ (nese) | ノヌ (nonu) | ヘカ (heka) | ヘニ (heni) |
| ヘミ (hemi) | ホユ (hoyu) | ミメ (mime) | ムエ (mue) |
| ムユ (muyu) | メヌ (menu) | ユム (yumu) | ラヌ (ranu) |
| ラヨ (rayo) | ラレ (rare) | リヒ (rihi) | リヘ (rihe) |
| ルヘ (ruhe) | ルロ (ruro) | レソ (reso) | レロ (rero) |
| ロモ (romo) | ワソ (waso) | エオ (eo) | エヨ (eyo) |
| サウ (sau) | シヒ (shihii) | スヌ (sunu) | セア (sea) |
| セネ (sene) | ソミ (somi) | チオ (chio) | チニ (chini) |
| チメ (chime) | テヤ (teya) | ニネ (nine) | ニヨ (niyo) |
| ヌト (nuto) | ヌム (numu) | ネア (nea) | ネホ (neho) |

These pseudowords associated with meaningless were selected from a previous psycholinguistic study of Japanese pseudowords [37]. The meaningfulness in the selected meaningless words ranged from 30 to 79 [37], while the non-association values in the selected meaningless words ranged from 35 to 85 [37].

Supplemental Table S2. Manufacturers and flavors of gustatory stimuli.

| Stimulus | Manufacturer | Flavor |
|----------|-------------------------------|--------------------------------|
| 1 | Ogontoh Co., Ltd. | kiwi |
| 2 | Asahi Group Foods, Ltd. | lemon |
| 3 | Meiji Sangyo Co., Ltd. | vinegar |
| 4 | Oshizaka Seika Co., Ltd. | Japanese bekko (pure caramel) |
| 5 | Meito Sangyo Co., Ltd. | white peach |
| 6 | Kanro Co., Ltd. | Japanese citrus |
| 7 | UHA Mikakuto Co., Ltd. | strawberry milk |
| 8 | NOBEL Confectionery Co., Ltd. | Lemon, including vitamin c |
| 9 | Meiji Co., Ltd. | dark chocolate |
| 10 | Sakumaseika Co., Ltd. | apple |
| 11 | Ribon Co., Ltd. | brown sugar, honey, and ginger |
| 12 | Pine Co., Ltd. | pineapple |
| 13 | NOBEL Confectionery Co., Ltd. | muscat including vitamin c |
| 14 | UHA Mikakuto Co., Ltd. | milk |
| 15 | Meiji Co., Ltd. | milk chocolate |
| 16 | Osakaya Seika Co., Ltd. | soy sauce radish |
| 17 | Asahi Group Foods, Ltd. | calpis |
| 18 | First Japan Co., Ltd. | butterscotch |
| 19 | Ribon Co., Ltd. | plum |
| 20 | Chikuho Seika Co., Ltd. | caramel |

These gustatory stimuli were used in the evaluation phase and learning phase of G condition.

Supplemental Table S3. Results of correlation analyses ($n = 13$).

| | SW | H | C | SO | AS | F | P | AR | D | SR | RT | SFR |
|-----|---------|---------|--------|--------|---------|---------|---------|---------|-------|--------|-------|-----|
| SW | 1 | | | | | | | | | | | |
| H | -0.23** | 1 | | | | | | | | | | |
| C | -0.13* | 0.19** | 1 | | | | | | | | | |
| SO | -0.18** | 0.10 | 0.56** | 1 | | | | | | | | |
| AS | -0.34** | 0.02 | -0.11 | 0.02 | 1 | | | | | | | |
| F | 0.56** | -0.29** | 0.07 | -0.02 | -0.39** | 1 | | | | | | |
| P | 0.60** | -0.25** | 0.04 | -0.02 | -0.45** | 0.81** | 1 | | | | | |
| AR | -0.35** | 0.13* | 0.27** | 0.52** | 0.32** | -0.33** | -0.34** | 1 | | | | |
| D | 0.56** | -0.29** | 0.08 | 0.01 | -0.45** | 0.79** | 0.85** | -0.32** | 1 | | | |
| SR | -0.07 | -0.01 | -0.04 | -0.04 | 0.09 | -0.10 | -0.08 | -0.09 | -0.03 | 1 | | |
| RT | -0.01 | -0.06 | 0.09 | 0.07 | 0.07 | 0.08 | 0.04 | 0.00 | 0.02 | -0.08 | 1 | |
| SFR | -0.14* | -0.02 | 0.03 | -0.05 | -0.02 | -0.04 | -0.09 | 0.00 | -0.09 | 0.17** | -0.02 | 1 |

SW: sweetness; H: hardness; C: coolness; SO: sourness; AS: astringency; F: familiarity; P: preference; AR: arousal; D: deliciousness; SR: successful recognition; RT: response

time of recognition memory phase; SFR: successful free recall.

** $p < 0.01$; * $p < 0.05$.