**PSA007 (SPAM-L) ETHICS INFORMATION PACK**

This information pack contains what you will need to apply for ethics approval from your review board. If you have any questions, please contact the PSA007 project lead (at 007spaml@gmail.com) or ethics monitor ([k.peters@uq.edu.au](mailto:k.peters@uq.edu.au)). The remainder of this document provides the following supporting documentation to help you prepare your submission to your review board:

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### OSF Page:

<https://osf.io/wrpj4/>

### Project Lead’s IRB:

<https://osf.io/tcxk2/>

* The modified IRB is provided above to ease confusion on what to submit. We updated the instructions between V1 and V2 files. Both approvals are provided if you need it.
* We suggest you use the V2\_IRB\_HU\_modified.docx file (this information is what is provided below) to prepare your information.

### Participant Information:

Number of participants proposed/anticipated: 50,000

Type(s) of participants:

☐ Children (17 or younger) X Adults (18 years of age or older)

☐ Patients in institutions X HU students (18 years of age or older)

☐ Prisoners X Faculty or external collaborators

☐ Pregnant women X Other:

This project is in collaboration with the Psychological Science Accelerator. Each team that contributes to data collection will obtain their own exemptions (i.e., some countries do not have IRB regulations), reliance on the HU IRB, or their own IRB review. Here we are indicating that we will have external collaborators who will select participants in many different ways (their classrooms, paid samples, social networks, etc.).

### Review Type:

**Exempt** **Review** (based on the following categories):

☐ Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

X Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, **unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.**

☐ Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available **or** if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Less likely types in the exempt category include the following:

☐ Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

☐ Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

### Project Description:

Semantic priming has been studied for nearly fifty years across various experimental manipulations and theoretical frameworks. Critically, the understanding of semantic priming relies on reliable, well-studied stimuli with defined similarity values. In the last twenty years, the publication rates of normed stimuli databases and corpora (i.e., large bodies of text) has exponentially increased. Further, newer computational models of concept representation have been detailed using these databases. Using these newer models, we can define similarity between concepts to create reliable stimuli for study in semantic priming. This research project will meet the need for a database of semantic priming values, particularly in non-English languages that are cross linguistically complete. Large-scale data in this area is sparse, unlike the other published databases found in Buchanan et al. [(2019a)](https://paperpile.com/c/d09zVa/NVFy/?noauthor=1). Therefore, this study aims to provide data that complements and extends the published data, which would encourage research on methodology, item characteristics, models, cross-language consistency in priming, and other theoretical areas that semantic priming has been applied to previously. The global aims of this project include:

1) Create an online framework to collect semantic priming data, modeled after the success of the Small World of Words project [(De Deyne et al., 2019)](https://paperpile.com/c/d09zVa/Sp2f). The online framework would allow data collection from any internet capable computer, thus lowering the burden on research labs to collect data of this nature. The online framework can then be used to deliver updates to the data, even after the conclusion of the initial data collection.

2) Provide a large dataset of response latencies and priming scores for prime and target words in up to 55 languages, as available on the Open Subtitles Project. Further, these prime and target words will be supplemented with variables that are theoretically important for research in cognitive architectures to provide a dataset with less missing data. The dataset provided allows researchers to continue to use these datasets to select carefully controlled stimuli, as well as investigate questions about items, participants, reliability, and language.

### Project Methodology:

**Participants**

Data from the English Lexicon Project [(Balota et al., 2007)](https://paperpile.com/c/d09zVa/o46g) and the Semantic Priming Project [(Hutchison et al., 2013)](https://paperpile.com/c/d09zVa/mfwo) were used to estimate the minimum sample size necessary for the study. The aim of this study is to provide a large dataset, rather than test a hypothesis, so traditional ways to estimate sample size via power and effect size were not applicable. Therefore, an accuracy in parameter estimation approach was employed using the previous data as a metric. In this approach, one focuses on finding a confidence interval around a parameter that would be “sufficiently narrow” [(Kelley, 2007; Kelley, Darku, & Chattopadhyay, 2018; Maxwell, Kelley, & Rausch, 2008)](https://paperpile.com/c/d09zVa/J8iv+vG6z+ZIrT)**.** Both the English Lexicon Project and Semantic Priming Project used a lexical decision task, which will be employed in this study. These data were used to estimate the likely standard errors of lexical decision data for individual words. These values were used as the rubric of accurately measured lexical decision response latencies.

Given proposed standard error value, the data was then sampled with replacement to determine the sample size that would provide that standard error value. One hundred words within the data were selected, and samples starting at *n* = 5 to *n* = 400 were selected (increasing in units of five). The standard error for each of these samples was then calculated for the simulation, and the percent of samples with standard errors at or less than the estimated population value was then tabulated. From this calculation, *n* for each target concept was estimated at 100-320 participants. The design of the study, the number of words per session, expected data loss due to incorrect answers, number of target words desired, and number of required conditions were all taken into account and the final estimate for sample size per language is 741 to 4741. The complete code and description of this process is detailed at: [here](https://github.com/doomlab/SPAML/tree/master/parameter_estimation).

This sample size estimation represents a major improvement from previous database collection studies, as many have used the traditional *n* >= 30 as a way to guess at minimum sample size. As indicated, it’s often unclear how to exactly estimate a sample size for these types of studies, and this study will detail that procedure to provide guidance for future work. The upper range of estimated participants is high because of the uncertainty in estimating an “accurate” parameter. Because the variability of the sample size is quite large, we will employ a stopping procedure to ensure participant time and effort is maximized, and data collection is minimized. The minimum sample size will be 50 participants per concept or 741 total participants, and the maximum will be 320. After 50 participants, each concept will be examined for standard error, and data collection for that concept will be stopped when the standard error reaches an average of the two metrics found in this exploration (0.06, 0.012; see supplemental material) or 0.09. This process will be automated online and checked in a daily subroutine. From the current simulations, this approximates to 100-150 participants per word, and 1482-2223 participants per language total.

**Materials**

Semantic priming focuses on word-pair relatedness or similarity, and therefore, prime-target pairs are often chosen for their similarity in the related condition. The unrelated condition pairs are then created by shuffling the prime-target pairs so that the prime word is combined with a target word it has no relationship to. Non-words are created by changing one to two letters in a prime or target word to create a nonsense word (*nurse* → *lurse*), with the stipulation that they must be pronounceable and not pseudo-homophones (i.e., wherein the pronunciation sounds like a real word, *keep* → *keap*). Consequently, the choice of related words is key for the study. There are multiple measures of semantic similarity including the cosine between overlapping features [(Buchanan et al., 2019b)](https://paperpile.com/c/d09zVa/eXKH), free association probabilities [(De Deyne, Navarro, & Storms, 2013)](https://paperpile.com/c/d09zVa/C1nC), and local/global coherence values from network models [(Siew & Vitevitch, 2016; Vitevitch et al., 2014)](https://paperpile.com/c/d09zVa/jKpT+6ExH). However, the underlying data for these calculations is spotty across languages. Therefore, one solution is to use the Open Subtitles and subs2vec projects to calculate lexical co-occurrence as a measure of semantic similarity (Lison & Tiedemann, 2016; van Paridon & Thompson, 2020). With the subtitle data, we will take the first 10000 most frequent nouns, adjectives, adverbs, and verbs from each language, and these will be cross-referenced using the *translateR* package [(Lucas & Tingley, 2014)](https://paperpile.com/c/d09zVa/5RQM). Next, a distributional space model for each language will be used from the subs2vec project to identify concepts related to the 10000 most frequent words and to calculate their respective similarity values [(Mandera et al., 2017)](https://paperpile.com/c/d09zVa/hhqi). The top five most related words will be selected, and these will be cross-referenced across languages. Native speakers will be recruited to ensure the accurate translation of word pairs. The related word pairs (*n* = 1000) will be selected from the list using each concept only once, favoring pairs with translations in most languages. If a selected pair does not exist in a language, translation from a Native speaker will be used to create that pair. Words will also be cross referenced for polysemy (i.e., multiple meanings) and these will be restricted when possible. Lastly, concepts will be examined for their relative statistics on lexical measures (length, part of speech, neighborhood, phonemes/morphemes) and subjective measures (age of acquisition, imageability, concreteness, valence, dominance, arousal, and familiarity) because of their known associations with concept representation. Psuedowords will be created by replacing a random letter in the selected words while ensuring this letter matches potential bigrams found in the language. The code for this selection procedure and current wordlist can be found: [here](https://github.com/SemanticPriming/SPAML/tree/master/stimuli).

**Procedure**

A small demonstration of the experiment can be found at: [here](https://open-lab.online/code/PSA%20LDT%20Example/?generate=true). The study will be programmed using lab.js [(Henninger, Shevchenko, Mertens, Kieslich, & Hilbig, 2019)](https://paperpile.com/c/d09zVa/6aux), which is an online, open-source study creation project. Precise timing measurement is required for this study, and the lab.js team has documented the accuracy of measurement within their framework [(Henninger, Shevchenko, Mertens, Kieslich, & Hilbig, 2018)](https://paperpile.com/c/d09zVa/3a8Q), and previous work has shown no differences between lab and web-based data collection for response latencies [(Hilbig, 2016)](https://paperpile.com/c/d09zVa/1857). In addition, SPALEX, a large lexical decision database in Spanish was collected completely online [(Aguasvivas et al., 2018)](https://paperpile.com/c/d09zVa/JEZ6). We will recommend that research labs use Chrome as their browser, however, meta-information about the browser and operating system are saved when participants take the experiment to control for implementation differences. Participants will be directed to an online web portal to take the study, and all data will be retained in the online platform with nightly backups to GitHub. They will be asked to indicate their gender (male, female, other, prefer not to say), year of birth for age, and education level (none, elementary school, high school, bachelors, masters, doctorate) for demographic variables. To continue in the study, they will select their primary language, which will direct them to the appropriate stimuli set. The research lab ID will be collected (to track external collaborators) but no identifying information will be collected about participants (i.e., IP address or other information than listed here for demographics).

Participants will be required to complete the study on a computer, rather than a mobile or tablet device. This requirement allows for tracking of the display of the device which will indicate important aspects about screen size, browser, and timing accuracy. In order to enforce this requirement, participants will be asked to hit the spacebar to continue the study. Instructions on how to complete a lexical decision task will be shown on the next screen, followed by 10 practice trials. Each trial starts with a fixation cross (+) in the middle of the screen for 500 ms. The concept will then be displayed in the middle of the screen in uppercase San-Serif font (i.e., NURSE). On the bottom of the screen the answer choices will be shown as the traditional keys next to the *shift* key depending on the common keyboard layout for that language (i.e., Z and / on a QWERTY keyboard or > and - on a QWERTZ keyboard). These choices will be reversed in half of the subjects, which will be randomly selected at the start of the study to counterbalance word/nonword selection. Participants will enter their choice for each concept, and then the next word will appear with an intertrial interval of 500 ms (i.e., the time between the offset of the first concept and onset of the next concept, when the fixation cross is showing). Responses will time out after 5 seconds and move on to the next trial. After ten trials, participants will see the instruction screen again with a reminder that they will now be doing the real task.

After 100 trials, the participants will be shown a short break screen with the option to continue by hitting the spacebar after 10 seconds. After six blocks of 100 trials (600 words), the experiment will end with a thank you screen. On this screen, participants will indicate what type of credit they are receiving for the study (course credit, payment), and they will be given instructions on how to indicate they have completed the study to the appropriate lab. Participants will be allowed to take the study multiple times (see below). These values will be customized based on data collection type (i.e., Mechanical Turk, participant pool, etc.). An estimate for the amount of time required for the study is approximately twenty to thirty minutes including practice trials, instructions, and breaks. We will pilot test the number of stimuli to keep the study under 30 minutes and will lower the number of trials accordingly.

A primary goal of this project is to provide a complete dataset of priming and other important related linguistic variables. Lexical measures, such as length, frequency, part of speech, and the number of phonemes (i.e., sounds in a word) are easily created from the concept or the SUBTLEX projects. Subjective measures are concept characteristics that are rated by participants, such as age of acquisition (approximate age you learned a concept), imageability (how easy the concept is to imagine), concreteness (how concrete is the concept), valence (emotion), arousal, dominance (controlled versus dominated), and familiarity. For concepts that are missing these values in a target language, participants will be asked to provide ratings on a single metric (i.e., they would only see instructions for familiarity or arousal). Each participant will be asked to provide 25-50 ratings of concepts, given the need for a particular language, while also controlling for the length of the task to prevent fatigue in the experiment. These will only be presented at the end of the experiment to prevent interactions with priming effects. We will use the available large databases of these variables to estimate sample size necessary for these ratings using the same simulation procedure detailed above.

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**Specific Study Materials:**

**Demographics:**

**基本情報（デモグラフィック）：**

What is your native (first) language? (this choice will direct them to the full study in their native language).

あなたの母国語（第一言語）は何ですか？（この選択により、研究全体が参加者の母国語で表示されるようになります）。

Please tell us a little bit about yourself.

あなた自身のことについて教えてください。

Please tell us your gender: male female other prefer not to say

あなたの性別を教えてください： 男性 女性 その他 回答したくない

Which year were you born? Please enter a four-digit year:

あなたは西暦何年生まれですか？4桁の数字（年）を入力してください：

Please tell us your education level: less than High School diploma, High School, Associates or two year degree, University or four year degree, Masters Degree, Doctoral degree (please note these will be made culturally relevant for each language)

あなたの教育歴（最終学歴）を教えてください：高卒未満、高校卒業、短期大学卒業（あるいは2年間の専門課程）、4年生大学卒業（あるいは4年間の専門課程）、修士号、博士号（これらは各言語における文化的背景を考慮して作成）

**Semantic priming task:**

**意味プライミング課題：**

This experiment is concerned with how people process words. You will be asked to view words and judge them. The words will be presented in the middle of the screen. You should ask yourself if the word on the screen is a real word or a fake word. If you recognize the word on the screen like **COLD**, please press the **KEY** key for real word. If the word is made-up nonsense, like **WERM**, please press the **KEY** key for fake word. During practice, we will give you feedback. We would like to ask you to respond as quickly as you can while remaining accurate. You have five seconds to respond to every word. Please press the **SPACE BAR** to try a few for practice.

この実験では、人がどのように単語を処理しているかを検討します。単語が画面（ディスプレイ）の中央に提示されますので、提示された単語が本物の単語なのか、それとも偽物の意味を成さない単語なのかを考えてください。もし、画面上の単語が**COLD**のように意味のある本物の単語だと思えば、**KEY**キーを押してください。一方、もし　**WERM**　のような意味を成さない単語であれば、**KEY**キーを押してください**。**練習試行では、キー押しに対して正解・不正解のフィードバックをします。またこのキー押しは、できるだけ早く、また正確に行うよう心がけて欲しいと思います。なお、すべての単語に対して5秒以内で反応する必要があります。 **SPACE BAR** を押すと練習試行が始まります。

(note the **KEY** will be manipulated between participants and based on the traditional keyboard for that language placing it by the Z and ? keys on a traditional QWERTY keyboard).

**（ KEY** は参加者間で操作され、その言語のキーボードに基づき、QWERTYキーボードのZと?キーが割り当てられます）

Please press **KEY** for a real word, and **KEY** for a fake word. (shown while competing the priming task wherein words are shown on the screen)

本物の単語である場合は **KEY** を**、**偽物の単語である場合は　**KEY**を押してください。(画面に単語が表示されるプライミング課題中に表示）

Great job! Remember you should use the **KEY** key for real words, and the **KEY** key for fake words. You will now complete the real task. Remember to go as quickly as possible while getting the correct answer. You will not see any feedback during this section. Please press the **SPACE BAR** to continue. (shown after practice and before the real trials).

お疲れ様でした。本物の単語である場合は **KEY**、偽物の単語の場合には　**KEY**を押すことを忘れないでください。では、これから本番を行います。できるだけ早く正確に反応することを心がけてください。なお本番では、正解・不正解のフィードバックは行われません。**SPACE BAR**を押すと本番が始まります（練習後、本番前に表示）。

Please take a short break on this screen. You may press the **SPACE BAR** when you are ready to continue. (shown after each 50-100 pairs to combat fatigue).

少し休憩してください。続行するときは**SPACE BAR**を押してください**。**(疲労対策として50～100組ごとに表示されます）。

Thank you for completing the first part of the experiment. On the next screen, you will judge words for some of their properties to help us measure how these words are understood by native speakers. (a random section below will be shown).

ありがとうございます。これで本研究の最初の課題が終了しました。次の画面では、単語の持つ特徴について判断していただきます。この作業は、単語がネイティブスピーカーにどのように理解されているかを知るために行うものです。（以下のセクションがランダムで表示されます）。

**Word meaning task: (McRae et al., 2005)**

**単語意味課題：（McRae et al., 2005）**

We want to know how people read words for meaning. Please fill in features of the word that you can think of. Examples of different types of features would be: how it looks, sounds, smells, feels, or tastes; what it is made of; what it is used for; and where it comes from. Here is an example:

人々が単語の意味をどのように理解しているのかを調べています。そこで、以下の例のように、単語が示すものの特徴を思いつく限り記入していただきたいと思います。例えば、見た目、音、香り、感触、味、材質、用途、原産地などです。アヒルを例にとって説明します：

duck: is a bird, is an animal, waddles, flies, migrates, lays eggs, quacks, swims, has wings, has a beak, has webbed feet, has feathers, lives in ponds, lives in water, hunted by people, is edible

アヒル：鳥である、動物である、よちよち歩く、飛ぶ、移動する、卵を産む、鳴く、泳ぐ、翼がある、くちばしを持つ、水かきを持つ、羽毛を持つ、池に住む、水に住む、人が狩る、食用である

Complete this questionnaire reasonably quickly, but try to list at least a few properties for each word. Thank you very much for completing this questionnaire.

この課題では、それほど時間をかけずに（思いつくまま）回答してもらいたいのですが、各単語について少なくとも2-3個は特徴をリストアップするようお願いします。どうぞよろしくお願いします。

**Age of acquisition task: (Kuperman et al., 2012)**

**獲得年齢課題：(Kuperman et al., 2012)**

Please indicate (in years) the age at which you learned each of the words on the list. An approximate age is good enough for this rating. If you do not know the meaning of a word, please enter the **X** key. By “learning a word” we mean the age at which you would have understood that word if somebody had used it in front of you, EVEN IF YOU DID NOT use, read or write it at the time.

リストに示された単語を覚えた年齢を教えてください。おおよその年齢で十分です。もし単語の意味を知らない場合は、**X**キーを押してください。なお「単語を覚えた年齢」というのは、誰かがあなたの目の前でその単語を使ったとしたら、その意味が理解できたであろう年齢のことを意味します。あなた自身がその単語を使ったり、読んだり、あるいは書いたりできなかったとしても構いません。

**Concreteness task: (Brysbaert et al., 2014)**

**具体性課題: (Brysbaert et al., 2014)**

Some words refer to things or actions in reality, which you can experience directly through one of the five senses. We call these words concrete words. Other words refer to meanings that cannot be experienced directly but which we know because the meanings can be defined by other words. These are abstract words. Still other words fall in-between the two extremes, because we can experience them to some extent and in addition we rely on language to understand them. We want you to indicate how concrete the meaning of each word is for you by using a 5-point rating scale going from abstract to concrete. A concrete word comes with a higher rating and refers to something that exists in reality; you can have immediate experience of it through your senses (smelling, tasting, touching, hearing, seeing) and the actions you do. The easiest way to explain a word is by pointing to it or by demonstrating it (e.g. To explain 'sweet' you could have someone eat sugar; To explain 'jump' you could simply jump up and down or show people a movie clip about someone jumping up and down; To explain 'couch', you could point to a couch or show a picture of a couch). An abstract word comes with a lower rating and refers to something you cannot experience directly through your senses or actions. Its meaning depends on language. The easiest way to explain it is by using other words (e.g. There is no simple way to demonstrate 'justice'; but we can explain the meaning of the word by using other words that capture parts of its meaning). Because we are collecting values for all the words in a dictionary (over 60 thousand in total), you will see that there are various types of words, even single letters. Always think of how concrete (experience based) the meaning of the word is to you. In all likelihood, you will encounter several words you do not know well enough to give a useful rating. This is informative to us too, as in our research we only want to use words known to people. We may also include one or two fake words which cannot be known by you. Please indicate when you don't know a word by using the letter N (or n).

単語の中には、五感を通して直接体験できるような具体的な事物や行為を意味するものがあります。そうした単語をここでは「具体的な単語」と呼びたいと思います。一方で、直接体験することはできないけれど、言葉として意味を理解できるような単語もあります。こうした単語を「抽象的な単語」と呼びたいと思います。さらに、両者の中間に位置するような単語、つまりある程度経験することができ、同時に言葉を通じても理解しているような単語も存在します。さてこの課題では、以下の提示する単語が、あなたにとってどのくらい具体的な単語であるのかを、5段階で評価していただきたいと思います。現実に存在していて五感で体験できたり（嗅ぐ、味わう、触れる、聞く、見ることができる）、実際に行動できたりするような具体的な何かを意味する単語ほど、高いスコアをつけるようにしてください。よくわからなくなった場合には、その単語が意味する対象を指差したり、実演できるかどうかを考えてください（例えば、「ソファ」は指差したり、その画像を見せたりすることで説明できます。「ジャンプ」は、自分でジャンプしてみせたり、誰かがジャンプしている動画を見せたりすることで説明できます。また「甘い」は、誰かに砂糖を食べさせて体験させることができます）。一方で、抽象的な単語は、直接体験できなかったり、行動できなかったりする何かを示す単語のことで、こうした単語には低いスコアをつけてください。抽象的な単語は、言葉を通じて理解できるものなので、他の言葉で説明し直すことができるかどうかを考えてみてください（例えば、「正義」を実演することは難しいですが、「公正」のような似た意味の言葉を使うことで、その意味を説明しやすくなります）。なお、我々は辞書に載っているような多くの単語（全部で6万語以上）について調査を行っていますので、皆さんは様々な種類の単語を見ることになります（1文字の単語も含む）。ただ、考えてほしいことは、その単語の意味があなたにとって具体的であるか（経験できるか）だけです。また多様な単語が登場するので、あなたがよく知らず、スコアがつけられないようなケースも出てくるでしょう。それはそれで重要な情報になります。加えて、意味をなさない偽の単語も登場することがあります。もしあなたが意味を知らない単語や、意味をなさない単語が出てきた場合には、「N」のキーを押してください。

So, we ask you to use a 5-point rating scale going from abstract to concrete and to use the letter N when you do not know the word well enough to give an answer.

整理すると、皆さんには、「抽象的」から「具体的」までの5段階の評価、あるいは「N」を使って単語にスコアをつけてもらいたいと思います。Nは、自分がその意味をよく知らない単語が登場した時に使います。

Abstract (language based) Concrete (experience based)

1 2 3 4 5

N = I do not know this word well enough to give a rating.

抽象的（言語ベース）　具体的（経験ベース）

1                  2                  3                  4                 5

N = この単語をよく知らないので、評価できない。

**Valence, Arousal, and Dominance task: (Bradley & Lang, 1999)**

**幸福感・覚醒感・統制感課題: (Bradley & Lang, 1999)**

**Diagram

Description automatically generated with medium confidencevalence　幸福感**

**Diagram

Description automatically generatedarousal　覚醒感**

**Diagram

Description automatically generated with medium confidencedominance　統制感**

The study being conducted today is investigating emotion, and how people respond to different types of words.

この研究では、感情について、また色々な種類の言葉に人がどう反応するかについて、調べています。

We call this set of figures SAM, and you will be using these figures to rate how you felt while reading each word. SAM shows three different kinds of feelings: Happy vs. Unhappy, Excited vs. Calm, and Controlled vs. In-control. You will use these scales to make all 3 ratings for each word that you read. Please notice that each of the three feelings are arrayed along a different scale. The left panel shows the happy-unhappy scale, which ranges from a smile to a frown. At one extreme of this scale, you are happy, pleased, satisfied, contented, hopeful. When you feel completely happy you should indicate this by selecting the 1 on the left. The other end of the scale is when you feel completely unhappy, annoyed, unsatisfied, melancholic, despaired, or bored. You can indicate feeling completely unhappy by selecting the 9 on the right. The figures also allow you to describe intermediate feelings of pleasure, by selecting any values in the middle. If you feel completely neutral, neither happy nor sad, select the 4 in the middle.

この図をここではSAMと呼んでいます。この図を使って、単語を読む時にあなたがどんな感情を経験するかを教えてください。SAMは、幸福感（幸せ vs 不幸せ）、身体の覚醒感（興奮した vs 落ち着いた）、そして統制感（制御している vs 制御されている）の3種類の感覚を表しています。そしてこのSAMを使って、各単語を読んだ時に3つの感覚をどの程度感じたかを回答していただきたいのです。3つの感覚は、それぞれ異なる尺度で回答していただきます。左のパネルは幸福感の尺度で、左から、笑顔の人からしかめ面の人までが並んでいます。笑顔の極は、あなたが幸せや喜び、満足感、充足感、希望を感じている状態を示しており、こうした気持ちを感じたら左端の1を選んでください。一方、しかめ面の極は、あなたが不幸せやイライラ、不満、憂鬱、絶望、退屈を感じている状態を示しています。こうした気持ちを感じたら右端の9を選択してください。これらの中間の気持ちを感じる場合には、中間の数値（2〜8）を選択するようにしてください。もし喜びも悲しみもない、完全にニュートラルな気持ちであれば、真ん中の4を選んでください。

The excited or calm scale is the second type of feeling displayed here. At one extreme of this scale you are stimulated, excited, frenzied, jittery, wide-awake, or aroused. When you feel completely aroused, select the 1 on the left. Now look at the other end of the excited-calm scale, which is the completely opposite feeling. Here you would feel completely relaxed, calm, sluggish, dull, sleepy, or unaroused. Indicate feeling calm by selecting the 9 on the right. As with the happy-unhappy scale, you can represent intermediate levels of excitedness or calmness by selecting any other number. If you are not excited nor at all calm, select the 4 in the middle.

覚醒感（興奮した vs 落ち着いた）の尺度は、2つ目のタイプの感覚についてのものです。この尺度の一方の極は、あなたが活気づき、興奮・熱狂・神経の高ぶりを感じたり、あるいは意識や身体が覚醒していたりする状態を示しています。そうした覚醒を感じたら、左端の1を選択してください。もう一方の極は、これとは逆の状態で、あなたが完全にリラックスして落ち着いていたり、活力がなくなっていたり、眠くなっていたりしているような状態を示しています。こうした気持ちを感じたら右端の9を選択してください。幸福感の尺度と同様に、これらの中間の気持ちを感じたら、2〜8の数字を選択してください。もし興奮も落ち着きも、どちらも感ない場合には4を選んでください。

The last scale of feeling which you will rate is whether you felt controlled or in control. At one end of the scale you have feelings characterized as completely controlled, influenced, cared-for, awed, submissive, or guided. Please indicate feeling controlled by selecting the 1 on the left. At the opposite end of this scale, you would select the 9 if you feel completely in control, influential, important, dominant, autonomous, or controlling. You can indicate feeling dominant selecting the 9 on the right. Note that when the figure is large, you feel in control, and that it will be very small when you feel controlled. If you feel neither in control nor controlled you should select the 4.

最後の尺度は、統制感についてのものです。尺度の一方の極は、あなたが何かに制御され、影響を受け、管理され、導かれているように感じている状態、あるいは何かに畏敬の念を感じ、服従しているように感じている状態を示しています。こうした気持ちを感じたら、左端の1を選んでください。もう一方の極はその逆で、自分で何かを制御し、影響力を持ち、支配している用に感じたり、あるいは有力さや自律性を感じている状態を示しています。こうした気持ちを感じたら、右端の9を選んでください。なお、この統制感の尺度では、統制感を覚えている状態では図が大きくなり、その逆では図が小さくなっていることに注意をしてください。そして統制しているとも、されているとも感じていない場合には、4を選択してください。

Please work at a rapid place and don’t spend too much time thinking about each word. Rather, make your ratings based on your first and immediate reaction as you read each word.

最後に、一語一語についてじっくり考えるというより、むしろスピード感をもって取り組んでもらえればと思います。それぞれの単語を読んだときの最初の直感を大事にして、回答してください。

**Familiarity task: (Gilhooly & Logie, 1980)**

**親近性課題: (Gilhooly & Logie, 1980)**

This is an experiment to find out how often you have come in contact with certain words. You will be given a list of words and you are to rate each one as to the number of times that you experienced it by simply writing down a number according to a 1 to 7 scale. In this scale, 1 represents “NEVER,” that is, you have never seen or heard or used the word in your life; the number 2 represents “RARELY,” that is you have seen or heard or used the word at least once before, but only rarely; and so on until 7, which represents “VERY OFTEN,” that is, you have seen or heard or used the word nearly every day of your life.

これは、あなたがある単語にどれくらいの頻度で接したことがあるかを調べる実験です。提示されたリストに載っているそれぞれの単語について、あなたがどのくらい経験したことあるかを1〜7の数字で回答してください。この尺度では、１が「全く無い」を表します。つまり、あなたの人生でその単語を見聞きしたり、使用したりしたことが一度もない場合、1を選択してください。2は「めったに無い」を表します。つまり、その単語を見聞きしたり使用したりしたことが少なくとも一度はあるけれど、ごくまれである場合には、2を選択してください。このような選択肢が7まであり、7は「とても頻繁」を表します。生活の中でほぼ毎日その単語を見聞きしたり使用したりする場合に、7を選択してください。

Do not be bothered if you are unable to give a definition of some of the words. Simply rate each one as to the number of times you have come in contact with it regardless of its meaning. There may be some words which you have used or heard more often than you have seen them. Or there may be other words which you have seen more often than you have used or heard them. In such cases, always give the word in the highest rating of the three. For example, you probably use or hear the word “cheers” often, but you may never have seen it in print. In this case, you would rate “cheers” as “OFTEN” and write down the number 6.

いくつかの単語の意味が分からなくても、気にしないでください。意味にかかわらず、その単語に接した回数を単に回答してくだされば十分です。見た回数よりも、使った回数や聞いた回数の方が多い単語もあるかもしれません。あるいは、使った回数や聞いた回数よりも、見た回数の方が多い単語もあるかもしれません。そのような場合は、いつでも3つ（使った・聞いた・見た回数）のうちで最も頻繁だったものを、そのまま回答としてください。例えば、「乾杯」という単語はよく使ったり聞いたりすると思いますが、印刷物では一度も見たことがないかもしれません。この場合、「乾杯」を「頻繁に」と評価し、「6」を選択してください。

Go to the list of words and begin rating them at your own speed. This is not a “speed” experiment, each participant will be given plenty of time to finish. On the other hand, do not spend too much time on each word. The important thing is for you to be as accurate as possible. Be as honest in your ratings as you can. Many of the words in this experiment are very rare, so you are not expected to have come in contact with all of them. Just make the best estimates you are capable of.

それでは、単語のリストに移動し、自分のペースで回答を始めてください。回答の速さを調べているわけではありませんし、回答には十分な時間を用意してあります。ただし、各単語への回答には、それほど時間をかける必要はありません。重要なのは、できるだけ正確に、またできるだけ正直に回答するようことです。というのも、この実験で出てくる単語の多くは珍しいものが多いので、あなたがすべての単語に触れているとは限りません。ですので、できる限り良い（正確・正直な）回答をするように心がけてください。

**Iconicity task:**

**象徴性課題：**

For this task, we want to know how iconic you think words are. Some words are considered to be iconic; the word somehow sounds like what it means. For example, haha sounds like the sound made when you laugh. You might be able to guess its meaning even if you did not know the language. Other words are not iconic at all; for example, there is nothing ‘occasional’ or ‘frequent’ sounding about the word. If you did not know the language, you would not be able to guess their meanings. For each word that you will see, rate on a scale of 1 to 7 how iconic you think the word is, with 1 as not iconic at all and 7 as highly iconic. Say the words aloud before making their rating. For example, haha is very iconic and would be a 7; tree not at all iconic and would be a 1. Words that are intermediate in iconicity, of course, should be rated appropriately between the two extremes, for example with 3 or 4. If you do not know the meaning of a word, put in X. Work fairly quickly but be as accurate as possible in your ratings. Feel free to use the entire range of numbers, from 1 to 7; at the same time, don’t be concerned about how often you use a particular number as long as you are honest in your ratings.

この課題では、あなたが単語をどの程度象徴的だと考えているかを調べます。象徴的な単語とは、単語の発音が、そのままその単語の意味になっているような単語のことです。例えば、「ハハハ」という単語の発音は、実際に笑ったときの音と同じです。こうした単語は、その単語自体を知らなくても意味を推測できることでしょう。一方で、象徴的ではない単語では、発音と意味とが一致しません。例えば、「時折」や「頻繁」のような単語の発音は、その意味（物事の頻度）とは何も関係がありません。こうした単語は、あなたが単語を知っていないと、意味を理解することはできないでしょう。それでは、これから見ていただく各単語について、その単語がどの程度象徴的であると思うかを、1から7の数字で回答してください（1：全く象徴的でない、7：非常に象徴的）。回答する前に、その単語を声に出してみてほしいと思います。例えば、「ハハハ」は非常に象徴的なので7点、「木」は全く象徴的でないので1点となるでしょう（「き」という発音と、その意味=樹木とは関係がないためです）。なお、象徴性が中程度の単語は、3点や4点など中間の数字を選んでください。また、単語の意味がわからない場合は×を付けてください。回答は、できるだけ素早くかつ正確にするよう心がけてください。1から7まで全ての範囲の数字を自由に使うことができます。何度も同じ数字を選択する事があるかもしれませんが、正直に回答しているなら、気にする必要は全くありません。

**Study Stimuli:**

**研究の刺激:**

<https://osf.io/m56z7/>

Note that the stimuli chart includes many blanks. These will be filled in with translators for the language listed in the column name (language code is the first two letters of each column). We want to ensure the stimuli selection procedure is approved before moving to this step because the process is slow to run if we need to do it again.

刺激の表には多くの空白があることに注意してください。こうした空白は、列名に記載されている言語の翻訳者によって埋められる予定です（言語コードは各列の最初の2文字です）。このステップに移る前に、刺激の選択手順が承認されていることを確認したいと思います。なぜなら、このプロセスを再度実行するのには、時間がかかるからです。

### Consent Form:

**CONSENT FORM**

Understanding Word Processing and Meaning

**同意書**

単語の処理と意味の理解

You are invited to be in a research study about how you read and process words, along with their meaning. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

この研究では、みなさんが単語をどのように読み、処理するか、またその意味をどのように理解するかについて調べます。ぜひご参加をお願いいたします。研究の参加に同意する前に、このフォームを読んでください。不明な点があれば質問をしてください。

This study is being conducted by Dr. Erin M. Buchanan, Professor of Cognitive Analytics at Harrisburg University of Science and Technology.

なお、この研究は、ハリスバーグ科学技術大学の認知分析学の教授であるErin M. Buchanan博士が行っているものです。

**Background Information:**

In this study, you will be asked to complete different questions about word concepts. For example, you may be asked to define a word’s characteristics, rate how familiar you are with a word, or simply judge if a string of letters is a real word.

**背景情報：**

この研究では、単語の概念に関するさまざまな質問に答えていただきます。例えば、ある単語の特徴を定義したり、ある単語にどれくらい馴染みがあるか評価したり、あるいは単純に文字列が本当の単語であるかどうかを判断したりしていただきます。

**Procedures:**

You will take this study entirely online from a desktop or laptop computer with a keyboard. You will be given instructions about the experiment sections which are randomly selected for each person. After you complete the experiment, you can learn more about the study and goals of the research. The entire study should take less than thirty minutes to complete.

**研究の手順：**

この研究は、キーボードのあるデスクトップ型パソコンまたはノート型パソコンを使って、すべてオンラインで受けていただきます。みなさんには、用意された課題の中からいくつかがランダムに選ばれて、その課題についての説明が表示されます。実験が終了すると、この研究の詳細と目的についてお知らせします。この研究は、すべて30分以内に終了するはずです。

**Risks and Benefits of being in the Study:**

No identifying information will be collected from you, and therefore, your responses should be anonymous. The current study is similar to an online game, which may cause some fatigue or boredom based on the task you are asked to complete.

**研究に参加することのリスクと利点：**

この研究では、個人を特定する情報は収集されません。またあなたの回答の匿名性は守られます。この研究はオンラインゲームに近いものです。取り組む課題によっては、疲労や退屈に感じることがあるかもしれませんので、ご理解ください。

There is no direct benefit to you for participating in this study. However, your responses will contribute to our understanding of language and cognitive memory processes.

この研究に参加することで、あなたに直接的な利益があるわけではありません。ただ、あなたが参加によって、言語と認知の理解が進展することが期待されます。

**Compensation:**

You may be compensated when taking part in this study through your local researcher.

**報酬：**

この研究に参加する際に、参加する地域の研究者を通じて報酬が支払われる場合があります。

**Confidentiality and Data Sharing:**

Measures are taken to ensure that all information you provide will be anonymous. The data from this project will be posted publicly for other researchers to use; however, no data will be directly linked to you. Your name or other identifying information will not be entered into the dataset and no references will be made in verbal or written reports that could link you to the study. In any publication, information will be provided in such a way that you cannot be identified.

**機密保持とデータ共有：**

得られた全ての情報に対して、その匿名性を保証するための措置がとられています。このプロジェクトのデータは、他の研究者が利用できるように公開されますが、データとあなたとが直接関連づけられることは一切ありません。あなたの名前や他の個人が特定できる情報はデータセットに含みません。また、口頭または書面による報告において、この研究とあなたを結びつけるような言及がなされることはありません。いかなる出版物においても、個人を特定できないような形で情報を提供します。

Before your data are shared outside the research team, any potentially identifying information will be removed. The anonymous data may be used by the research team or shared with other researchers, for both related and unrelated research purposes in the future. Your anonymous data may also be made available in online data repositories such as the Open Science Framework (which are free data repositories that require registration to have access), which allow other researchers and interested parties to access the data for further analysis.

あなたのデータが研究チーム外で共有される前に、個人を特定する可能性のある情報はすべて取り除かれますのでご安心ください。匿名化されたデータは、研究チームが使用するか、他の研究者と共有され、将来的に関連するもしくは関連しない研究目的のために使用される可能性があります。また、あなたの匿名化データは、オープンサイエンスフレームワーク（アクセスするためには登録が必要なフリーのデータリポジトリ）などのオンラインのデータリポジトリで公開され、他の研究者や利害関係者がさらに分析するためにデータにアクセスできるようになる場合があります。

**Please note that your data will be anonymous, which means you cannot ask for it to be removed once you have completed the study.**

**データは匿名化されるため、研究終了後にデータ削除を依頼することはできないことに注意してください。**

**Voluntary Nature of the Study:**

**Participation in this study is voluntary:**

Your decision whether to participate will not affect your current or future relations with Harrisburg University of Science and Technology or your local institution. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**研究参加の任意性：**

**この研究への参加は自由意志に基づく：**

この研究に参加するかどうかによって、現在または将来のハリスバーグ科学技術大学や日本で研究実施している教育機関との関係に影響を与えることはありません。参加すると決めたとしても、質問に答えたくない場合はそうすることができますし、参加自体を辞退することもできます。

**Contacts and Questions:**

The researchers conducting this study are Dr. Erin M. Buchanan in partnership with the Psychological Science Accelerator. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact Dr. Erin M. Buchanan at [ebuchanan@harrisburgu.edu](mailto:ebuchanan@harrisburgu.edu).

**連絡先と質問：**

この研究を実施している研究者は、Psychological Science Acceleratorと提携しているErin M. Buchanan博士です。質問があれば、何でも聞いてください。後で質問がある場合は、Erin M. Buchanan博士（ebuchanan@harrisburgu.edu）に連絡することを**お勧めします。**

**Questions or Concerns:**

This study has been reviewed by Harrisburg University of Science and Technology’s Institutional Review Board (IRB). The IRB has determined that this study fulfills the human research subject protections obligations required by state and federal law and University policies.

**疑問または懸念事項：**

この研究は、ハリスバーグ科学技術大学の研究倫理審査委員会（IRB）による審査を受けています。研究倫理審査委員会は、この研究が州法および連邦法、ならびに大学の方針によって要求されるヒトを対象とした研究参加者の保護義務を果たすと判断しています。

***A copy of this information to keep for your records will be provided upon request.***

***記録を保管するなどのご要望に応じて、この情報のコピーを提供いたします。***

### Recruitment Materials:

**募集要項**：

<https://osf.io/gp8nv/>