A computational approach to classifying UKLO questions

System Created by Charles Massingham

This system was implemented for UKLO questions from Aug 2022 – July 2023.

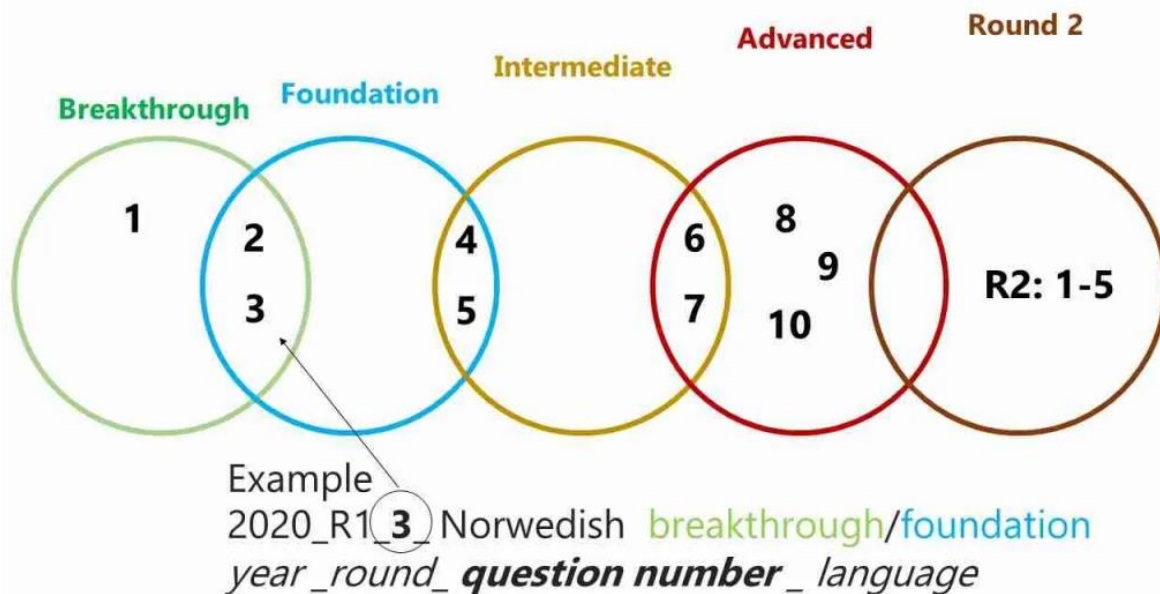*Written on 11/07/2023, v2.341*

Comments from the author:

I leave the work I've done to classify all UKLO questions below, with the latest appendices for historical record. From my recollection, this was the first complete system to classify all UKLO questions. Attempts at classifying UKLO questions before accounted for some questions but not others, leaving some questions unclassified. The classifications then were more labelling rather than a systemic approach that applied to all questions. As a result, this made it difficult for competitors and test development to find the questions they were looking for by subject area, and to find related questions. There was a need to provide an organised and clean system to classify not just some but all the questions in order to establish fundamental classification data, basic statistics, and enhanced usability for test development and competitors. The system is provided below and was displayed on the website under technical information. I've decided to leave the system unedited with further commentary and general thoughts about mistakes made, analysis of the scope of UKLO questions, and future projections. Further improvements are being made to the classification system for a greater user experience, but so far the system has been a huge success and is fully working and operational.

Contents:

Level System

Example
2020_R1 **3** Norwedish breakthrough/foundation
*year _round_ **question number** _ language*

Classification Theory

2023 Pronoun update: in the document, I use we and I interchangeably

Assumptions

After a long analysis of the over hundred questions at UKLO, we have developed a theory of classification that can logically and precisely sort and organise them. There are theoretical assumptions that have been made:

- Linguistics as a main subject can be divided into smaller subjects.
  - o We have observed this not only in linguistics, but in fact every teachable subject. These smaller subjects in linguistics are better known by their names: E.g. Morphology, Phonetics, Phonology, Pragmatics, Semantics and Syntax. They form the main branches (smaller subjects) of Linguistics.
  - o In its very fine details from original implementation, a few borderline cases had been observed where certain subject matter may sit in-between two smaller subjects or more. We had found these cases are not a theoretical consequence from the subject (which was originally hypothesised) but due to the constraints and construction of exam questions that allows for a borderline case. In such cases decision sorting trees have been proposed for each of the smaller subjects to run through each question. This results in a branching where borderline cases may be treated as belonging to all of those smaller subjects, or just some of them, or just one of them. We have found this to no longer be a problem anymore.
- The theory assumes that every question from UKLO is and will be related to linguistics. There are consequences from this:

- o Every question at least relates to one linguistics smaller subject. This follows from the previous assumption that linguistics is divisible into its smaller counterparts.
  - o Therefore every question may relate to more than one linguistics smaller subject

- A classification system should describe the unchangeable components of its members

  - o This makes the classification system a description of the question itself. It removes ambiguity and fluctuation of descriptions.

  - o If applied to this chair, the unchangeable components (without exterior alteration) of this chair is its height, width, weight (ignoring negligible natural decay), number of legs, its material (wood), time taken for completion. A classification system of this sort would not be interested in changeable components (e.g. age, the number of people who have sat in it) or changeable exteriors (e.g. public appeal, voting or ratings, 'shininess', 'how comfortable it is'). In the case of a physical alteration, it would be a permanent change, and a reclassification would be made, discarding its previous.

  - o We have found this sturdy-style classification system is most appropriate for UKLO questions that are stable, largely unchangeable, non-animate, and discuss logical and description-driven conclusions.

  - o It is possible that once all unchangeable descriptions and foundations are specified for UKLO questions (which is the current challenge), different classifications are possible, but at this stage of research and development, it would not be recommended. General maintenance of the classification system must also be taken into account, so that what remains is undebatable and ultimately helpful.

  - o This does not eliminate creative descriptors that would be outside the classification system

- Therefore a classification system for UKLO questions should include its linguistics subject, as well as other unchangeable aspects that are relevant enough to be helpful for selection.

  - o We have found 3 other unchangeable aspects: Question Format, Volume and Texture, as well as Theme

- Unchangeable aspects must have more than one feature to be considered for classification.

- Classification criteria should only describe features that differ between questions in an *unpredictable pattern / with undetermined parameters*. Only highlight distinctive features where questions differ. Therefore the classification system excludes

  - o Features that are the case for all questions (e.g. the question feature: they all have questions, the data feature: they all have data and translated content for problem solving). {*If F is the set of all UKLO questions and there exists a feature f that is a member of every question's feature set, f is not considered a feature for classification*}.

  - o Additional content/descriptors that is added to repetitive and predictable groups of questions that do not highlight their individual differences are not counted as features and thus are not part of the classification. {if Q is the set of questions (with set length greater than 1 and strict order) composing {Q1, Q2, Q3.. } within F with content q manually applied and added to every member of Q, q is not considered as a feature for classification. (e.g. levels Breakthrough- Advanced and Round 2, Question Numbers, Explanation questions in round 2)

Classification theory comments from the author:

<u>The problem with intermediary states</u>

In a computational system, it is imperative that we do not leave states unclassified and open to intermediary states. An intermediary state, as I define, is a state that composes of two different states, where the final state is stateless. Here is an example: In the room I have investigated there is a cat, but there is also not a cat. Here the state of the room is in limbo between two states, either the room with a cat or a room without a cat. Notice that this is not a probabilistic state as the room has been investigated. The final state of the room is stateless, it is either a room with a cat or a room without a cat. This essentially labels the room's 'cat state' as unclassified. Here is a more complicated example in the case of UKLO questions: The question is phonology-based and morphology-based, but it is also syntax-based and semantics-based. Here the final state of the question is undetermined, it is either phonology and morphology or syntax and semantics. Notice that by saying a question is syntax-based and semantics-based, it means it is not phonology-based and morphology-based or vice versa. This leaves the question open as to how to classify the question. I also clarify a difference between an intermediary state and an intermediary operator which is a selection process that is intermediary, but the final state is not intermediary.

One of the big problems with classifying UKLO questions, as I've discovered, are the grey boundaries between linguistics subjects which leads to intermediary states in its classification, where a question can be "either A or B or C or D" in its final state. This lack of clarity defeats the computational approach and leaves the system up for subjectivism. This is a problem for a few reasons:

- The computational process itself creates final intermediary states.
- The computational process cannot be objectively implemented
- The computational process itself doesn't fully work, and breaks at the end.

Part of the problem with intermediary states for UKLO questions is the lack of criteria that defines states. The definition of states therefore become paramount to avoid intermediaries.

One great success of this current system is the lack of intermediary states, where the parameters and criteria have been set. A disadvantage however is a lack of relevance or agreement of states (which will be discussed later). Unless there is some consensus on objective detail for states, this disadvantage cannot be solved without leaving open the possibility of intermediary states.

<u>Measuring unchangeable/changeable properties:</u>

The approach adopted in this system attempts to redefine the states that governed the labelling of UKLO questions in the past, so to give observational certainty on what state a UKLO question would be in. These in my view are 'unchangeables', which are states that are of objective truth and cannot be changed. 'Changeables' on the other hand refer to states that can change, for example 'the number of likes given to a UKLO question', would change as a function of time and the number of participants. Changeables have been strictly excluded in the UKLO classification for maintainability purposes, but they certainly can be implemented outside of the classification. One of the dangers of implementing changeables within a classification like UKLO questions are the following:

- Time lags between changes of state, where the state would be wrong until it is rectified. This can cause a lack of trust in the parameters set.
- The constant need for maintenance of states to check that they are being measured accurately, or focused/directed towards a sensible objective.
- The loss of grip on the reality of the problem. This is particularly unnoticeable once states all become changeable and there is no accepted criteria as to what a state is or isn't. This is a particularly dangerous consequence of changeables because it removes the necessity of goal-oriented objectives in, for example, finding the correct question in the search box; knowing what questions to attempt or not attempt; knowing what a question describes or its composition in order to find like-minded questions/subject areas, and will lead to a randomness that may tarnish competitiveness.

One of the consequences however of unchangeable aspects is the need to disclaim the barriers and parameters which are set. This is more in the realm of academic responsibility to ensure that anyone that uses UKLO questions and learns the classification by association of terms will understand that the terms which are used are relevant only to UKLO and the linguistics competition, and if they decide to pursue linguistics at university (for example), that they will need to redefine the terms according to their lecturer's academic discipline and take the terms given at UKLO as a stepping stone, rather than as objective certainty in those terms. On the other hand, UKLO has tried to bring as much accuracy into these terms as possible, but there will be small theoretical shifts and redefinition of terms for the clarity of our own systems and to bridge the gap with the terminologies of competition question styles and constraints whose semantics may not be appropriate for more serious academic pursuits. I therefore advise against the direct word-by-word reusability of terms and their definitions from UKLO in a university context due to minor shifts in semantics and small technical differences in applications.

Classification Process

To successfully classify a question, a judgement is made on 5 key **categories** found in every UKLO question in this order:

1. Linguistics Formula from the UKLO Periodic Table (63 features theoretically possible)

2. Question Format (7 features found)

3. Volume and Texture (4 features found)

4. Theme (9 features found)

5. Language (over 160 features)

1.Linguistics Formula

Every UKLO question has a linguistics formula which states the presence of (or application of) a linguistics subject(s) in its question. They are grouped together in alphabetical order e.g. MoPhePho = The question has applied Morphology, Phonetics and Phonology in its problem solving aspect. See the Glossary of Terms below for a full description of these subjects and how they have been classified for UKLO questions.

Some formulae will have a bolded section (e.g. **Mo**Phe), this means that the question mostly concerns application of the bolded section (in this example, the question is mostly focused on morphology).

For search box purposes, the formula has changed syntactically, so every linguistics subject must have an asterisk before it (*Mo*Phe), then an underscore is placed before and after it for direct searches (_*Mo*Phe_)

2. Question Format

There are three different question formats for UKLO, they ultimately fall into 2 different categories: (One where the answer is given on the question paper, and one where the answer is not given on the question paper). Note: Classifications for the final round 2 questions exclude explanation questions.

The answer is not given on the question paper:

Answer: This means that the student must write in their own answer to a question (usually in an empty box) using the data given to them. All knowledge required to answer the question is presented in the question paper

Answer (exo): An answer, but extra knowledge not presented in the paper itself is required to answer the questions fully. One example is general knowledge of English.

--note: answer(exo) was not fully implemented due to recent re-workings of the system.

The answer is given on the question paper:

Match-up: Questions that involve matching a known Set A with another known Set B. Here the answers are given, but jumbled up, the question asks you to match them up.

Multiple-Choice: Questions that involve ticking/crossing/selecting a correct answer out of a list of possible answers. It could also be selecting an option out of a variety of given options.

N.b. Match-up and Multiple-Choice Questions are different by design, a correctly answered match-up cannot have any unpaired elements (it is a bijection), a multiple-choice leaves out wrong answers.

Some UKLO Questions have a mix of these 3 question formats:

Mixed: Where the exam paper includes more than one question format (4 possible)

Answer and Match-up

Answer and Multiple-Choice

Match-up and Multiple-Choice

Answer, Match-up and Multiple-Choice

3. Volume and Texture

This answers two questions: The first answers the question of texture: Does the question data use the Latin alphabet (including IPA, and numerals in this classification) or not? The second answers the question of volume: If it's written using the Latin alphabet (including IPA, and

numerals in this classification), how long is the data set and the answers required by students to give?

It uses the latin alphabet (e.g. a b c), IPA, or numerals

These categories have no further embellishment in terms of its script use.

Words: The question data and the required Answer is 1 – 3 words long. This category also includes determiner phrases (e.g. your houses) and their translations. These also include affixes (e.g. answer: -s for plural). *As we define for UKLO questions purposes only: 1 word becomes 2 words when there is a space between them*.

Sentences: The question data and the required answer is sentences (3+ words). *N.b. the definition of a sentence is not discussed here, the word 'sentence' has been used to mean 'long string' where we define a string as long at 3+ words. This threshold is hypothesised and more meant to highlight the change in problem solving aspect as you approach past 3 words, problem solving becomes more sentential and more involved in different cognitive tasks, as well as when strings are generally recognised as sentences.*

Words & Sentences: The question and required answer has a mixture of both words and sentences n.b. if there were 20 instances of sentences and one word, it may be stated as sentences and not be picked up by the classification. It usually classifies a substantial mixture of both.

It does not use the latin alphabet, IPA, or numerals

Writing: Characterised by a foreign script. The question or the required answer is written in a foreign script. This is a sensitive measure, any data set with a foreign script gets assigned Writing.

So far, there has not been a need for a volume measure for writing questions, this may change in the future

4.Themes

Some UKLO Questions are characterised by a theme. A theme is another subject area or topic area being applied to the question. N.b. a theme must have some linguistic significance (e.g. a question about fishing won't have 'fishing' qualified as a theme, unless there was something linguistically relevant, e.g. fishing technique grammar by Narwhals (for argument sake)). It can be seen as a form of application to real-life circumstances. There are many:

Ancient: These questions feature extinct languages that have not been used for at least 1000 years. They resemble very old forms of human communication, and usually feature customs, traditions or topics of discussion that are no longer practiced in modern society. The approximate year of circulation (when it was mostly likely first used) is given in brackets.

Encrypted: These questions are thematic, involving decoding a secret message. These questions have been found to not easily fall into any other category.

Maps: Questions that deal with topological space, diagrammatical representation by relation or distance, networks and navigation. This is a cognitive category that deals with spatial reasoning and orientation in a topological map or space. This includes questions that have locational maps (like train maps, maps of cities), with varying degrees of involvement with spatial reasoning, given the general label 'Maps'. There are two other subcategories of Maps:

- **Maps (Grid):** Questions involving moving on a grid map (or topological grid) and deals with navigation and perspective
- **Maps (Family):** Questions involving family tree maps and networks (kinships), deals with relational reasoning up and down the tree, and the language terminology to represent them.

Numbers: Tasks that involve calculation or semantic matching of Numbers that are required in the question. These also include numbers in equations as well as number bases. The vast majority of Numbers questions are Sentences

Phonotactics: A unique category of questions based around the ordering of phonemes (groups of sounds) in a language. It's essentially a phonology jigsaw puzzle.

Senses and Feelings: Linguistic content to describe emotional concepts or senses (like smells, sounds)

Stories: Either the question has a storyline (a plot written in a narrative form) OR there are one or more made-up characters in the question. The linguistics significance is the embellishment of language to create creative narrative contexts or worlds to study language itself. The subject area is literary work.

No Theme (N/A): A question centered on the main subjects of linguistics

Other Classifications

There have been other terms and names given to certain types of UKLO questions. They have successfully identified important categories, and is found to be used as popular terms in some discussions of these questions. It may be confusing to read different classifications at the same time. They can all be translated into the current classification system. Here is a translation table for any other terms commonly found to describe UKLO questions. Please use the translation to search for key words using the column filters.

Other Popular Terms	**Translation (any question that has the following)**
Rosetta (Stone) Question	Answer-Sentences-N/A
Chaos and Order Question	Match-Up-Sentences – N/A
Phonetics Question	Either *Pho or *Phe
Numbers Question	Numbers
Compounding Question	*Se – Match-Up-Words
Script Question	Writing

Other Popular Terms	Translation (any question that has the following)
Kinship Questions	Maps: Family

We have found that 'phonetics' questions which deal generally with sounds, is not cuatrolinguistic (it does not highlight UKLO questions with a linguistics combination of 4 and above. The reason is due to the sensitivity of the current classification to pick out anything vaguely related to phonetics or phonology, but leaving out the general meaning of how a phonetics question would have been defined. For this reason there would be a cap in this translation.

Note these additional terms in the new classification which has shown to draw more finer distinctions between questions

Monolinguistic	1 (e.g. *Se)
Bilinguistic	2 (e.g. *Mo*Sy)
Trilinguistic	3 (e.g. *Mo*Se*Sy)
Cuatrolinguistic (or quatrolinguistic, or quadrolinguistic)	4 (e.g.*Pho*Mo*Se*Sy)

Updated Report

The new classification system offers a more dynamic and detailed classification of questions. It's also simpler and breaks the questions down to its most basic forms. It removes grey areas from the previous system (e.g. hybrids and hybrid mutation, Combination Tables have been removed, Multiple-choice not being given a volume etc..). We have tested the system and it has successfully classified all questions comfortably. Many holes in the previous system have been patched (e.g. the indeterministic C Class), and the system is now theoretically complete. It also drafts out all possibilities and gives room for question diversity expansionism.

03/03/2023: From light of evidence in Mongolian 2019, there are new research questions to test: Can a monolinguistic Pho category exist? Does a hierarchy of linguistic features exist in UKLO questions? Can we simplify the linguistic formula further?

Glossary of Terms

Linguistics Subjects:

Disclaimer: *definitions in " " are formal definitions of the subject, the following sentences is how they have been interpreted in the context of UKLO questions* and how they have been classified in the table.

Morphology (Mo): "the study of the forms of words, in particular inflected forms." . A question that involves working with **morphological rules or morpheme translation** to solve questions OR is totally thematic, apparent and based in the study of morphology either strongly or loosely.

Phonetics (Phe): "the study and classification of speech sounds.". A question that involves working with **the articulation of speech sounds** to solve questions OR is totally thematic, apparent and based in the study of phonetics either strongly or loosely.

Phonology (Pho): "the branch of linguistics that deals with systems of sounds (including or excluding phonetics), within a language or between different languages." A question that involves working with **phonological rules** to solve questions OR is totally thematic, apparent and based in the study of phonology either strongly or loosely.

Pragmatics (Pr) *discontinued* : "the branch of linguistics dealing with language in use and the contexts in which it is used, including such matters as deixis, the taking of turns in conversation, text organization, presupposition, and implicature.". A question that involves observing and formulating conclusions based on **the use of language in particular social contexts and scenarios** to solve questions OR is totally thematic, apparent and based in the study of pragmatics either strongly or loosely.

Update 06/07/2023: There are theoretical issues on the definitions of social contexts and scenarios that rejects the classification theory and requires a rework and clarity for the context of UKLO questions (critique: it is a changeable aspect) . A new definition for the 'pragmatics' section for UKLO questions is being drafted. The pragmatics category has been pulled from the UKLO classification as a result.

–> Pragmatics of a language X requires a socially and experientially relevant knowledge-base by which to create a pragmatics understanding. Without this general knowledge in the implicatures of a statement, pragmatics cannot be substantially represented in UKLO questions (for the simple reason being that question solvers are not native speakers or live in communities that speak the languages in question, on a vast majority of cases). There is a metaphorical definition that you can draw from UKLO questions, being the unchangeable aspect of intra vs extra-cognitive knowledge of a question. This case for the definition of pragmatics has been considered and ultimately rejected for being too broad of a definition for its own relevance. This aspect of UKLO questions will instead be placed in 'Question formats'. There are questions written in English that could potentially draw from pragmatics reasoning. This is now being investigated.

–> Pragmatic elements have been found in questions where the target language is English for UKLO. They draw from knowledge of the English language and are few in number, with specific inferences and meanings that would be implied by English speakers, but aren't explicitly stated in the question itself and is core to the problem solving aspect. Definition for Pragmatics has been restricted to English and redefined due to the explanations above. These restrictions are not universal across linguistics (English is not any special exception or a point of focus for the study of Pragmatics in general, pragmatics of all languages are studied widely).

Pragmatics (Pr) *for English questions* : "the branch of linguistics dealing with language in use and the contexts in which it is used, including such matters as deixis, the taking of turns in conversation, text organization, presupposition, and implicature.". A question that contains pragmatic elements as detailed in the formal definition above.

Syntax (Sy): "the arrangement of words and phrases to create well-formed sentences in a language.". A question that involves working with **syntactic/grammatical rules** to solve questions OR is totally thematic, apparent and based in the study of syntax expressed strongly or loosely.

Semantics (Se): "the branch of linguistics and logic concerned with meaning. The two main areas are *logical semantics*, concerned with matters such as sense and reference and presupposition and implication, and *lexical semantics*, concerned with the analysis of word

meanings and relations between them". A question that involves **word/ symbol-symbol translation, postulating set sizes of the meanings of words/morphemes, or rules that change the metaphysical meaning of a word** (this may include, but not exclusive to, word identity, changes in word extension or intension, cause-effect or actionable change)to solve questions OR is totally thematic, apparent and based in the study of semantics either strongly or loosely.

Specific Categorisations

Disclaimer: *in attempt to keep categories separate to ease classifications, certain adjustments have been made to accommodate independent classification of categories. We are confident that the classifications here do accurately resemble the common encounters and subject topics you will find in each linguistic subject, but some theoretical adjustments have been made to create a more vibrant and diverse classification. Some topic areas that come with the style of UKLO questions and cognitive reasoning have also been classified under these categories. Subject boundaries in linguistics are heavily discussed, and for more information on the theoretical accuracy of their boundaries in relation to the information below, please contact your local linguist.*

Phonology: Consonants, (Long/Short) Vowels, Syllable Stress, Diacritics, Nasalisation, Assimilation, Word Forming (through consonant-vowel-consonant deduction), Mutations, dissimilation, deletion, insertion, Tones and Tonal Patterns, Onset and Coda, Vowel Harmony, Phonotactics, Epenthesis, Allophony

Phonetics: Articulation of consonants and vowels from the IPA alphabet.

Pragmatics (for English questions): Scalar Implicatures, Inferences, Meaning derived from cultural knowledge and concepts in the English speaking world or more specifically to the UK. Language specific content that you would only know if you spoke English and not given in the question.

Morphology: Independent Affixes, Infixes, Reduplication, Noun Compounding, Affixal/Morphemes (a morpheme, as defined here, does not include singular consonants (or diphthongs)/vowels that do not have an associated semantic meaning or grammatical marking attached to it in the language, it is the simplest unit of grammatical meaning or other meaning exterior to its own marking). Word Formation (through morpheme compounding). Word segmentation. Picture segmentation (in scripts). N.b. if target language is presented in only single words with morphemes and semantic meaning attached, it is categorised as morphology and not syntax.

Semantics: Noun/Verb Translation, Morpheme Translation, Semantic Matching (e.g. symbol – IPA transliteration or tasks in match-ups/writing scripts), Decoding (Cryptography), Word Formation (through cognitive/pattern reasoning), Animate/Inanimate Nouns, Classifiers (Shape, Verb), Correspondences in meanings with English (either similar words or pronunciations), Polarity (positive/negative). Different types of Verbs/Nouns, inherent plurality, polysemy.

Syntax: Word Order, Grammatical Functions of Subjects, Objects and Verbs, Grammatical Case, Focus, Transitivity, Co-dependent affixes, Tense, Word formation (through grammatical affixes), Normalisation, Noun Phrases, Inflectional Rules, Grammatical Gender, Singular and Plural. Chunking, Clauses and Phrases, Focus Markers, Adjectives. Definite and Indefinite Articles n.b. if grammatical/morphological rules apply to more than one word, it's also classed as syntax.

Update 04/07/2023: From the evidence gathered on the scope of topics across the 200+ questions, UKLO questions in its entirety does cover all of the 6 main branches of linguistics,

and it focuses primarily on 4 of the 6: Syntax, Semantics, Phonology and Morphology. Phonetics and Pragmatics rarely appears (it has gotten a recent comeback in 2023). Phonetics has appeared in the theme of Phonotactics, and it mostly has appeared in combination with other subjects (like Phonology and Semantics).

Comments from the author:

The division of affixes:

One theoretical adjustment that I made, which is important to notice as it not commonly practiced, is the difference between co-dependent and independent affixes, and sorting co-dependent into syntax and independent into morphology.

Co-dependent affixes: When affixed are dependent on the state of other words in a phrase.

Example:

Phrase A			
	A (co-dependent)	**B** (co-dependent)	**C** (co-dependent)
I	buy**(∅)**	a**n**	umbrella**(∅)**
Phrase B			
	A (co-dependent)	**B** (co-dependent)	**C** (co-dependent)
Me	molest**an**	lo**s**	perro**s**

Here for example, the choice of buy over buys is co-dependent on the subject pronoun, and umbrella over umbrellas is co-dependent on the singular indefinite article, and the 'n' in 'an' is co-dependent on the vowel onset of umbrella. Similarly in Phrase B, in A 'an' is given to account for the plural expression, we see in B the affix 'o' is assigned by the gender of 'perro', and 's' in B or C (depending on how you see it) is dependent on plural assignment given to both words.

Independent affixes: When affixes are attached to a word, but do not dependent on the state of other words in a phrase.

Example:

Word A		
A/3 (in-dependent)	**A/3** (in-dependent)	**A/3** (in-dependent)
Ir	Respons-	-ible
Word B		
B/2 (independent)	**B/2** (independent)	
Butter	fly	
Phrase C		
		A (independent)
He	was	**ir**responsible

N.b. Butterfly is one word, composed of two separate words in English: Butter, and Fly.

As I have theorised, Morphology is more focused on the independent unit and its construction, and Syntax is more focused on the co-dependency of units and how they are constructed around each other. In UKLO questions, if one word (in the target language) is presented and not in a sentence, the affixes are immediately independent because there are no other words. If it is presented in a phrase, it is most likely syntax, but sometimes it can be morphology, e.g. 'Ir' in irresponsible, where the choice between responsible and irresponsible is independent.

Boundaries

Some questions sit in-between two question styles, here are decision processes that we've found help to categorise them (*N.b. research is ongoing and may change*)

Syntax or Morphology

Current working hypothesis for questions that are difficult to classify (only):

One word? Y >> Morphology

N: Look at the nature of the Affixes/Infixes:

Are the affixes co-dependent? i.e. being dependent on the markings of other words (masculine/feminine, agreement)? Y >> Syntax

N>> Do the affixes only change the nature of the meaning of the word it attaches to and is not dependent on other words(e.g. causative marking) Y >> Morphology

N >> Is there a mix of both? Y >> Morphology and Syntax N >> Not Morphology or Syntax

Sentences or Words?

Does the data set have both words and sentences? Y > Words & Sentences

N> Are the data set and the answers given words? Y > Words

N> Are the data set and the answers given sentences? Y > Sentences

N> Words & Sentences

Morphology or Semantics?

Is there any mention of word parts or working out the parts of words? N > Semantics

Y > Does each data set contain more than one word to translate? Y > Semantics and Morphology

N> Morphology

Phonetics or Phonology?

Is there any application of phonological rules? Y> Phonology (continue)

N>Are there detailed phonetic transcriptions (characterized by square brackets)? Y > Phonetics/Phonetics and Phonology (if 1st question Y)

N> Is there a mention of the IPA, or a drawing of the IPA Chart? Y > Phonetics /Phonetics and Phonology (if 1st question Y)

N> Is there a mention of the physical pronunciation usually accompanied with diagrams? (how to articulate sounds in the language, n.b. **not** simple descriptions like 'sh like in shoe' Y > Phonetics/Phonetics and Phonology (if 1st question Y)

N> not Phonetics or Phonology/ just Phonology (if 1st question Y)

New Discoveries

Ukology: /juˈkɒlədʒi/: the study of patterns and taxonomy in UKLO questions

This section is no longer referring to the problem solving aspect of the questions.

Existences and Hierarchies

From light of evidence in Mongolian 2019, there are new research questions to test: Can a monolinguistic Pho category exist? Does a hierarchy of linguistic features exist in UKLO questions? Can we simplify the linguistic formula further?

Questions like Aymara 2015, are questions that have no semantics at all, it is a purely monolinguistic Pho question. This means: a) a Pho monolinguistic category is possible b) there is no hierarchy of linguistics in UKLO questions, i.e. there is no derivation from Semantics as a central node c) previous analysis of PhoSe is incorrect and has been overestimated. One of the characteristics of Aymara is the lack of an english or any language – language translation, or a hint to meaning at all, which was assumed to be the case for all UKLO questions. That assumption has now turned out to be false. The question is focused on phonotactics.

The linguistics formula represents the main branches of linguistics, and cannot theoretically be condensed further. Combining linguistic subjects together to reduce the number below 6 wouldn't represent the subject of linguistics as widely as it should, and is advised against. Most forms of combining have resulted in a less condensed version than the current. It is possible to create nomenclature that can appear simpler, research is looking into that.

Balanced Vs Dominant Questions (for non-monolinguistic questions)

Balanced: A question is called *balanced* when the linguistic presence of its subjects are all about equally dominant. Note: This does not apply to monolinguistic questions that itself would be dominant/balanced in its own subject dominance. E.g. Ngkolmpu 2021 is balanced in Se and Sy. Tseltal 2022 is a great example of a balanced cuatrolinguistic question, we see more or less equal dominance in subject presence in Mo, Pho, Se and Sy. A balanced question is identified in the tables when it has no boldening. Lots of questions that are MoSeSy are balanced, because the three usually harmonise in sentence translation. Question solvers may choose balanced questions for its diverse spread and more or less equal dominance of different subjects.

Dominant: A question is called *dominant* when the linguistic presence of x subjects supersedes dominance over others. Note: This does not apply to monolinguistic questions that itself would be dominant/balanced in its own subject dominance. Not all UKLO questions are dominant. E.g. Maltese 2022 has Pho, Se and Sy presence, but they are not all equally dominant. The majority of the question is based on word semantics, therefore it is dominant in **Se**. A lot of questions focused on phonology are dominant in **Pho** with a Se sub-dominant, the reason being that the vast presence of the question and problem solving aspect is based in phonological rules, but there is some semantic element present. A dominant question is identified in the tables when there is boldening. Question solvers may choose dominant questions to focus on a particular linguistic subject e.g. some question solvers love Phonology and Phonetics questions, so would look for **Pho**.

Sub-Dominant: Dominant questions have sub-dominants, e.g. In the Maltese question, Pho and Sy are sub-dominants. They are less dominant than the dominant.

Twin-Dominant (for 3 or higher): Dominant in two subjects e.g. Taos 2022 is dominant in Mo and Sy

Triple-Dominant(for 4 or higher): Dominant in three subjects e.g. Hawu and Dhao is dominant in Pho, Se and Sy.

Equivalent vs Sibling Questions, patterns from dominant questions:

Equivalent: When two questions have the same linguistics formula with the same dominances, they are called *equivalent*. E.g. Taos 2022 and Paiwan 2020 both being **Mo**Se**Sy**.

Sibling: When two questions have the same linguistics formula, but their dominances are different. There are two main types of siblings:

Reverse Sibling: When two questions have the same linguistics formula, but their dominances oppose each other, they are called *reverses*. E.g. Zuni 2022 (**Mo**Se**Sy**) vs Harowai and Karuai 2022 (*Mo***Se**Sy).

Connected Sibling: When two questions have the same linguistics formula, not reverses, but their dominances and dominance counts are different. The dominances of both questions need at least one shared subject E.g. Nung 2016 (MoSe**Sy**) and Beja 2013 (Mo**SeSy**)

Dancing Sibling: When two questions have the same linguistics formula, not reverses, but their dominances and dominance counts are different. When the dominances of both questions do not have a shared subject, they are *dancing*. E.g. Mongo 2020 (Mo**Pho**SeSy) and Arapaho 2020 (**Mo**Pho**Se**Sy).

Meerkat Sibling: When two questions have the same linguistics formula and dominance count, but their dominances are different (but do not oppose), they are called *meerkats*. E.g. Niuean 2022 (MoSe**Sy**)and Choctaw 2017 (**Mo**SeSy)

Perfects

Perfect: When two questions are *perfect*, they have the same classification in all categories (except for their language and dominance). So it's possible to have perfect + [descriptors above]

Examples:

Perfect reverses: Polish 2015 and Kaqchikel 2016

Language Perfect: When two questions are perfect, they have the same classification in all categories (except for their dominance). So it's possible to have language perfect + [descriptors above]

Examples:

Language perfect dancing siblings: Dutch 2013 and Dutch 2012

Identicals

True Identical: When two questions are the same in all categories (including the classification and outer classifications)

Can a true identical exist?

No, it is metaphysically impossible. A true identical would have to replicate question number and level, and a duplicate of both these factors is only possible within different year sets, which would not make them identical.

However, identicals within the five part classification have already been found:

e.g. Dinka 2022, Daagare 2021, Ladin 2019, Watsonium 2016…

So we classify the general identical category:

Identical: When two questions have the same classification in all categories (this includes dominance).

Near-Identical: When two questions have the same classification in all categories (this includes dominance), but the languages are different

Example:

Near- Identicals: Taos 2022 and Paiwan 2020

What are the relationships between questions?

All Other Categories = Question Format, Volume and Texture, Theme and Language

	Formulas are equal with the same dominances	Formulas are equal with different dominances	Formulas are equal with no dominance	Formulas are not equal
All Other Categories are Equal	**Identical**	**Language Perfect**	**Identical**	**Language-Style Equivalent**
All Other Categories are Equal Except Language	**Near-Identical**	**Perfect**	**Perfectly Balanced**	**Style Equivalent**
All Other Categories are not Equal	**Equivalent**	Proceed to next Table	Proceed to next Table	If some of the categories are equal, you refer them as 'having the same X category(ies)', if none of them are equal, they are **Non-Related**

Note that for perfect formulas, the labelling can be optionally added to the labels given below as well for greater precision.

Language Style Equivalent = When all other categories, besides their formula, are equal. Some examples are English 2013 and English 2015; English 2014 and English 2010_7

Style Equivalent = When all other categories, besides their formula and language, are equal. Some examples are Rosetta-Stone Questions, Chaos and Order Questions, Jam Sai 2023 and Permyak 2023

Perfectly Balanced = Balanced Questions that are perfect. Examples include Ainu and Tawala 2021

Non-Related = By this classification only, the questions are considered to not have any similarity. Though they may share the same difficulty, level or question number (these factors are outside the classification)

Formulas are Equal, and all other categories are not equal

	Has dominance	Both do not have dominance
Have the same languages	Proceed to next Table	**Locally Balanced Pairs**
Doesn't have the same languages	Proceed to next Table	**Balanced Pairs**

Locally Balanced Pairs = Balanced questions that share the same language. Examples include English 2012_3 and English 2014_8

Balanced Pairs = When questions are balanced with the same formula. Examples include Braille 2019 and Ngkolmpu 2021

Dominant Pair Equivalent Tables

	Dominances are not the same
Dominance Count is the same	**Meerkat Sibling**
Dominance Count is not the same	Proceed to next Table

Dominances and Dominance Counts are not the same

	Has a shared subject	Doesn't have a shared subject
Dominances oppose	Impossible (N/A)	**Reverse Sibling**
Dominances don't oppose	**Connected Sibling**	**Dancing Sibling**

Comments from the author:

This is the distinction in research between the problem-solving/functional aspect of UKLO questions, and the observational differences between UKLO questions. So far there has not been any research of the latter, but there are important observations to be made.

- That the taxonomy of properties in UKLO questions is complex, rather than simply determined. All the terms stated have examples that fit into these cases. This is different to a product like buttons where the taxonomy of their properties are simple (either on or off).
- It is possible to conceive of UKLO questions as existing on a spectrum of a linguistics subject. A UKLO question can be 'more syntax' than another UKLO question that has syntax, rather than UKLO questions either having syntax or not.
- Dominance in UKLO questions is difficult to measure. The system that was used to measure dominance was in counting frequency of occurrences in the data set. This is objective, but the choice of counting is not.
- UKLO questions are a combination of many subjects, some more than others, and some more mixed than others. A perfectly balanced pair may not exist, but they are so close to each other it is difficult to work out which linguistic subject is more dominant.
- That some UKLO question pairs are similar in linguistics design, maybe more so than originally thought. Some unrelated pairs have been found to be similar in these measures. Some question pairs were deemed almost identical in linguistics design.
- That UKLO questions pairs can be compared by their linguistics make-up, rather than by how they are solved.
- That UKLO questions can be understood in pairs, which can improve user experience by personifying questions to be siblings of other questions.

History- The development of the classification system

I've tried to put together the history of this classification system and how it developed. All that we have are some remnants of previous classifications that we removed, and a log of the changes and consistencies during the development phase. Post v2.0 up to now (v2.341), most developments that took place built up to the system we see today (all available in the table logs in Appendix A). Dominants were a new idea placed in when users couldn't find a subject specifically for the subject categories, because the current system was combinatory and observational, which didn't pick out when a question was mainly Phonology (for example). Reference names were placed in v2.10 to give a unique reference for the questions. Details below show the classification before v2.

v1.33 - v2.0 (05/09/2022 – 19/12/2022)

Important Points:

- First coding system for UKLO
- Considered a huge simplification pre v1.33
- A combination table was tried to sort UKLO questions

	L1	L2	L3	L4
Single Words A (#SwA)	Semantics	Morphology, Semantics	Morphology, Semantics, Syntax	
Single Words B (#SwB)	Phonology	Morphology, Phonology	Phonology, Semantics, Syntax	
Single Words (#Sw)	Morphology or Syntax	Semantics + (or otherwise specified)		Morphology, Phonology, Semantics, Syntax
Sentences (#Se)	Any Combination	[Morphology], Semantics	Morphology, Semantics, Syntax	
Match-up (#M)/Multiple-Choice (#Mc)	[Semantics]	Semantics, [Syntax]	Morphology, Semantics, Syntax	Morphology, Phonology, Semantics, Syntax
Match-up A (#MA) /Multiple-Choice A(#McA)		Morphology, Semantics		
Hybrid A (#HA)	Semantics	Morphology, Semantics	Morphology, Semantics, Syntax	
Hybrid B (#HB)	Phonology	Phonology+	Phonology, Semantics, Syntax	
Hybrid (#H)	Any Other Combination	Any Other Combination		Morphology, Phonology, Semantics, Syntax

Comments from the author:

At the time it was considered a major milestone in the classification process, where all possibilities could be mapped onto one table. For clarity's sake, to use this table, you have to identify both the Question type (on the left column) and the linguistics combination (on the top row). For example, if the question was a match-up, and involved Morphology, Semantics and Syntax, You would find where that was on the table. So it would be at L3 (3 subjects), and Match-up (#M) with a linguistics code of #ML3. The pluses meant (plus anything else), so a #HBL2 would contain Phonology AND something else. The square brackets [] meant substitution, so the default linguistics subject for #ML1 is Semantics (but could be something else). So in the coding process, if the question was a match-up in semantics, the code would be "#ML1" and assumed to be semantics, but if it was a match-up in phonology, it would be "#ML1, Phonology", where the subject name is explicitly said.

The system worked, as I recall, however the major problem was that it was incredibly difficult to use and remember where the pluses were and which ones on the tables were substitutions. There was also an assumption that the question style and linguistics combination could predict the linguistics subjects. For example a Hybrid B (which is a mixture of different styles) that was monolinguistic must be Phonology. This theory was debunked after enough exceptions crawled in, and there was enough evidence to show that the hypothesis that the linguistics subjects could be predicted by question style was false (although there were many correlations). There was also a problem with intermediary states (explained earlier), for example the final state of #HBL2 was Phonology + anything else, so it was undetermined. Extra labels had to be placed on top of the system for it to not be intermediary.

Before v1.33

28/08/2022 – 05/09/2022

Old school analysis system (Zoom in)

Before the combination tables, the subjects and classifications were counted and verified (shown below). As you can see, the codes were far more complex and were a real headache (to put it mildly). This essentially shows how difficult this problem really was, and probably why nobody wanted to classify it. For example one question was labelled in its classification: "Hybrid (sentences, single words), Morphology, Phonology, Semantics, Syntax $#Hdl4mpSS". There was a class of hybrids, which at the time was considered a class that didn't have a home, so were labelled hybrids because we didn't know what to do with them. Here was the original definition given:

Hybrid (H): For a question to qualify as a hybrid, at least 2 different questions must come from different categories (e.g. Q1a) matchup, Q 1b) sentences n.b. one match-up question that involves single words/sentences is not a hybrid) OR more than 1 question has a consistent mixture of at least 2 different categories (e.g. Q1a) numbers/single words 1b) numbers/single words etc…) n.b. this does not include multiple questions with singular reference to match-up/writing.

"Question Data" is defined as at least one column of Question Data (57 theoretical)

Ha	Match-up, sentences
Hb	Numbers, single words
Hc	Single words, sentences
Hd	Match-up, single words
He	multiple choice, Sentences
Hf	Match-up, multiple choice
Hg	Single word, multiple choice
Hh	Match-up, Multiple choice, single words
Hi	Single Words, Writing

First check if a question qualifies as a single category, otherwise it is a hybrid.

Single Category Order: Writing > Match-Up > Sentences > Single Words

The problem with hybrids was the fact that the set was very large, and had no other recognisable pattern other than the fact that it didn't fit well into any established category at the time. Now I realise that in fact a hybrid category didn't actually exist in the first place and it was a categorical mistake. To draw back on the mistakes of the past, I do reject the notion of exceptions in the UKLO classification, because of the mistake of hybrids, that weren't exceptions at all. Another problem was that terms that belonged to different groups were being placed together as a single group, which confused the issue. For example we now recognise that Match-ups and the Single word category (now called Words) belonged to different groups. Match-up are question formats, and single words are volumes. But in this classification they were considered as part of the same group, so they were paired together. This was part of the reason why hybrids came up in the first place.

Classification	Code	Morphology	Phonology	Semantics	Syntax	Pragmatics	Phonetics	SS or SeS	mp or pm	mSy	mSe	pSy		mSS	I1	I2	I3	I4
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (sentences, single words), Morphology, Phonology, Semantics, Syntax $#Hdl4mpSS	#Hdl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Hybrid (match-up, single words), Morphology, Phonology, Semantics, Syntax $#Hdl4mpSS	#Hdl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Hybrid (sentences, single words), Phonology, Morphology, Semantics, Syntax $#Hcl4pmSS	#Hcl4pmSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Single Words, Morphology, Semantics, Syntax $#Swl3mSS	#Swl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (numbers, single words), Morphology, Semantics, Syntax $#Hbl3mSS	#Hbl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics, Syntax $#Swl3mSS	#Swl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Syntax $#Swl2mSy	#Swl2mSy	TRUE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (multiple-choice sentences), Morphology, Phonology, Semantics, Syntax $#Hel4mpSS	#Hel4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Match-Up, Morphology, Semantics $#Ml2mSe	#Ml2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Writing, Morphology, Semantics $#Wl2mSe	#Wl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Match-Up, Morphology, Semantics, Syntax, $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (sentences, multiple choice), Morphology, Syntax $#Hel2mSe	#Hel2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Morphology, Phonology, Semantics, Syntax $#Swl4mpSe	#Swl4mpSe	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE		FALSE	FALSE	FALSE	FALSE	TRUE
Sentences, Morphology, Phonology, Semantics, Syntax $#Sl4mpSS	#Sl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Numbers, Morphology, Semantics $#Nl2mSe	#Nl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (sentences, single words) Morphology, Semantics $#Hcl2mSe	#Hcl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology, Syntax $#Sl3wmpSy	#Sl3wmpSy	TRUE	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE		FALSE	FALSE	FALSE	TRUE	FALSE
Hybrid (multiple choice, sentences) Morphology, Semantics, Syntax $#Hel3mSS	#Hel3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology, Semantics, Syntax $#Swl4mpSS	#Swl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Match-up, Morphology, Semantics $#Ml2mSe	#Ml2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Phonology, Morphology, Syntax, Semantics $#Swl4mpSS	#Swl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Hybrid (single words, multiple choice), Morphology, Semantics $#Hgl2mSe	#Hgl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology $#Swpm	#Swl2pm	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (match-up, single words) Morphology, Semantics, Syntax $#Hdl3mSS	#Hdl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics, Syntax [i] $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Morphology, Semantics, Syntax $#Swl3mSS	#Swl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Syntax $#Swl2mSy	#Swl2mSy	TRUE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Numbers, Morphology, Semantics, Syntax $#Nl3mSS	#Nl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Multiple-choice, Morphology, Semantics $#Mcl2mSe	#Mcl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE

Description	Code																	
Single Words, Morphology, Syntax [i] $#Swl2mSy	#Swl2mSy	TRUE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Numbers, Morphology, Semantics, Syntax $#Nl3mSS	#Nl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Syntax $#Sl2mSy	#Sl2mSy	TRUE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Hybrid (sentences, multiple-choice), Morphology, Semantics, Syntax $#Hal3mSS	#Hal3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Phonology, Morphology, Semantics, Syntax $#Ml4mpSS	#Ml4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Numbers, Morphology, Semantics, Syntax $#Nl3mSS	#Nl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics $#Ml2mSe	#Ml2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Writing, Morphology, Semantics, Syntax $#Wl3mSS	#Wl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology $#Swl1m	#Swl1m	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		FALSE	TRUE	FALSE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Numbers, Morphology, Semantics, Syntax $#Nl3mSS	#Nl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (multiple-choice, sentences), Morphology, Semantics, Syntax $#Hel3mSS [i]	#Hel3mSS [i]	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Multiple-Choice, Morphology, Semantics, Syntax $#Mcl3mSS [i]	#Mcl3mSS [i]	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics $#Ml2mSe	#Ml2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Syntax $#Swl2mSy	#Swl2mSy	TRUE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology, Semantics $#Swl3mpSe	#Swl3mpSe	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE		FALSE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics, Syntax $#Swl3mSS	#Swl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology, Syntax $#Sl3wmpSy	#Sl3wmpSy	TRUE	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE		FALSE	FALSE	FALSE	TRUE	FALSE
Writing, Morphology, Semantics $#Wl2mSe	#Wl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology $#Sl1m	#Sl1m	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		FALSE	TRUE	FALSE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Numbers, Morphology, Semantics $#Nl2mSe	#Nl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Phonology, Morphology, Semantics, Syntax $#Swl4mpSS	#Swl4mpSS	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE		FALSE	FALSE	FALSE	FALSE	TRUE
Single Words, Phonology, Morphology, Semantics $#Swl3mpSe	#Swl3mpSe	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE		FALSE	FALSE	FALSE	TRUE	FALSE
Numbers, Morphology, Semantics $#Nl2mSe	#Nl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Sentences, Morphology, Semantics, Syntax $#Sl3mSS	#Sl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology $#Swl2pm	#Swl2pm	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Semantics $#Swl2mSe	#Swl2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Ordering, Morphology, Semantics $#Ol2mSe	#Ol2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Morphology, Semantics, Syntax $#Swl3mSS	#Swl3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Hybrid (single words, writing), Morphology, Semantics $#Hil2mSe	#Hil2mSe	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Single Words, Morphology, Phonology $#Swl2pm [i]	#Swl2pm [i]	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE		FALSE	FALSE	TRUE	FALSE	FALSE
Match-up, Morphology, Semantics, Syntax $#Ml3mSS	#Ml3mSS	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE		TRUE	FALSE	FALSE	TRUE	FALSE
Single Words, Morphology, Phonology, Semantics $#Swl3mpSe	#Swl3mpSe	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE		FALSE	FALSE	FALSE	TRUE	FALSE
		99	42	162	95	2	2	85	18	66	87	15		52	58	61	60	10
		0.521053	0.221053	0.852632	0.5	0.010526	0.010526	0.447368	0.094737	0.347368	0.457895	0.078947		0.273684	0.305263	0.321053	0.315789	0.052632

Previous Analysis

Measuring the spread of different types of UKLO questions: Research finished in 02/01/2023. Will we run out of questions? No, we won't.

UKLO Periodic Table

Row	Elements
6	MoPhePhoPrSeSy
5	MoPhePhoPrSe, MoPhePhoPrSy, MoPhePhoSeSy, MoPhePrSeSy, MoPhoPrSeSy, PhePhoPrSeSy
4	MoPhePhoPr, MoPhePhoSe, MoPhePhoSy, MoPhePrSe, MoPhePrSy, MoPheSeSy, MoPhoPrSe, MoPhoPrSy, MoPhoSeSy, MoPrSeSy, PhePhoPrSe, PhePhoPrSy, PhePhoSeSy, PhePrSeSy, PhoPrSeSy
3	MoPhePho, MoPhePr, MoPheSe, MoPheSy, MoPhoPr, MoPhoSe, MoPhoSy, MoPrSe, MoPrSy, MoSeSy, PhePhoPr, PhePhoSe, PhePhoSy, PhePrSe, PhePrSy, PheSeSy, PhoPrSe, PhoPrSy, PhoSeSy, PrSeSy
2	MoPhe, MoPho, MoPr, MoSe, MoSy, PhePho, PhePr, PheSe, PheSy, PhoPr, PhoSe, PhoSy, PrSe, PrSy, SeSy
1	Morphology (Mo), Phonetics (Phe), Phonology (Pho), Pragmatics (Pr), Semantics (Se), Syntax (Sy)

Number of Elements	63
Number of Observed Elements	17
Growth Potential	270.5882353

Key
- Green
- Purple
- Blank

Green = Commonly Found, Purple = Rare, Blank = Not found

What we can see is a clustered grouping of UKLO questions, i.e. the vast majority of UKLO questions are one of 6 types, with some variation in linguistics content. However, we can see there is large room for growth, and creation of different types of UKLO questions. This is good news, because it means that UKLO questions can continue to grow in terms of their linguistics combinations.

UKLO Themes Table (02/01/2023)

Group	Row	E	F	N	No	M	M2	M3
A	ASw	ASwE	ASwF	ASwN	ASwNo	ASwM	ASwM2	ASwM3
	ASe	ASeE	ASeF	ASeN	ASeNo	ASeM	ASeM2	ASeM3
	AWS	AWSE	AWSF	AWSN	AWSNo	AWSM	AWSM2	AWSM3
	AW	AWE	AWF	AWN	AWNo	AWM	AWM2	AWM3
M	MSw	MSwE	MSwF	MSwN	MSwNo	MSwM	MSwM2	MSwM3
	MSe	MSeE	MSeF	MSeN	MSeNo	MSeM	MSeM2	MSeM3
	MWS	MWSE	MWSF	MWSN	MWSNo	MWSM	MWSM2	MWSM3
	MW	MWE	MWF	MWN	MWNo	MWM	MWM2	MWM3
Mc	McSw	McSwE	McSwF	McSwN	McSwNo	McSwM	McSwM2	McSwM3
	McSe	McSeE	McSeF	McSeN	McSeNo	McSeM	McSeM2	McSeM3
	McWS	McWSE	McWSF	McWSN	McWSNo	McWSM	McWSM2	McWSM3
	McW	McWE	McWF	McWN	McWNo	McWM	McWM2	McWM3
Mi1(AM)	Mi1Sw	Mi1SwE	Mi1SwF	Mi1SwN	Mi1SwNo	Mi1SwM	Mi1SwM2	Mi1SwM3
	Mi1Se	Mi1SeE	Mi1SeF	Mi1SeN	Mi1SeNo	Mi1SeM	Mi1SeM2	Mi1SeM3
	Mi1WS	Mi1WSE	Mi1WSF	Mi1WSN	Mi1WSNo	Mi1WSM	Mi1WSM2	Mi1WSM3
	Mi1W	Mi1WE	Mi1WF	Mi1WN	Mi1WNo	Mi1WM	Mi1WM2	Mi1WM3
Mi2(AMc)	Mi2Sw	Mi2SwE	Mi2SwF	Mi2SwN	Mi2SwNo	Mi2SwM	Mi2SwM2	Mi2SwM3
	Mi2Se	Mi2SeE	Mi2SeF	Mi2SeN	Mi2SeNo	Mi2SeM	Mi2SeM2	Mi2SeM3
	Mi2WS	Mi2WSE	Mi2WSF	Mi2WSN	Mi2WSNo	Mi2WSM	Mi2WSM2	Mi2WSM3
	Mi2W	Mi2WE	Mi2WF	Mi2WN	Mi2WNo	Mi2WM	Mi2WM2	Mi2WM3
Mi3(MMc)	Mi3Sw	Mi3SwE	Mi3SwF	Mi3SwN	Mi3SwNo	Mi3SwM	Mi3SwM2	Mi3SwM3
	Mi3Se	Mi3SeE	Mi3SeF	Mi3SeN	Mi3SeNo	Mi3SeM	Mi3SeM2	Mi3SeM3
	Mi3WS	Mi3WSE	Mi3WSF	Mi3WSN	Mi3WSNo	Mi3WSM	Mi3WSM2	Mi3WSM3
	Mi3W	Mi3WE	Mi3WF	Mi3WN	Mi3WNo	Mi3WM	Mi3WM2	Mi3WM3
Mi4(AMM)	Mi4Sw	Mi4SwE	Mi4SwF	Mi4SwN	Mi4SwNo	Mi4SwM	Mi4SwM2	Mi4SwM3
	Mi4Se	Mi4SeE	Mi4SeF	Mi4SeN	Mi4SeNo	Mi4SeM	Mi4SeM2	Mi4SeM3
	Mi4WS	Mi4WSE	Mi4WSF	Mi4WSN	Mi4WSNo	Mi4WSM	Mi4WSM2	Mi4WSM3
	Mi4W	Mi4WE	Mi4WF	Mi4WN	Mi4WNo	Mi4WM	Mi4WM2	Mi4WM3

Legend:

Code	Meaning
A	Answer
M	Match-Up
Mc	Multiple Choice
Mi	Mixed
Sw	Words
Se	Sentences
WS	Words and Sentences
W	Writing
E	Encrypted
F	Senses and Feelings
N	Numbers
M	Maps
M2	Maps (Grid)
M3	Maps (Family)
No	None

Total Number	224
Red Rows	119
Total Number Found	22

- Row member found
- Few or one Question Found
- Many Questions Found
- Blank — No Question Found

We observe the same pattern with themes, most of the UKLO questions are N/A Theme (No), i.e. not having a theme. This is also good news, because it means there are plenty of ways to innovate.

But according to this analysis, what is the best way to innovate and keep UKLO fresh for new participants?

UKLO Strategic Map

Linguistic Elements	Question Styles				
	Unrestricted	Red Rows	Only Observed		
Unrestricted	14112	7497	1386		
Only Observed	3808	2023	374	71	

Strategically speaking, the best way according to this analysis is to move by row-column-row (starting at green and ending at red). At the moment we are at 71 different types of UKLO questions, with a theoretical cap of 374. This gives some leg room for questions to grow, but it is not the best strategy to simply do nothing despite the room. The best-case scenario is if we are at red and we have over 14000 possible types of questions to pick from every year.

Step for innovation:

- Start by increasing the number of themes along the red rows first (themes table)
- Then start increasing the number of linguistics combinations (from the periodic table
- Then start by increasing the number of themes along all rows (themes table)

The time frame between each bullet point could be years, so we should just start by creating more themes.

Outlining the best-case scenario for UKLO questions

The best-case scenario is the quality of UKLO questions will increase incrementally over the decades and may be the best competition for schools with its incredibly large range of potential questions and unpredictable nature, constantly challenging students to think outside of the box, while at the same time introducing a new subject for students to learn from. The future projection for UKLO is bright, with higher participation numbers, and a larger volunteering base. With the current projections and growth in the last 2 years, this scenario is not unlikely if volunteers continue to push the boundaries of what's possible for the UKLO product, adding more user experience and innovation, and keeping up to date with students, teachers and universities.

Outlining the worst-case scenario for UKLO questions

This was the conclusion given at the time of this analysis:

"By my analysis I confirm that in about 20 years time, UKLO will go through a variation drought where the diversity of questions will plateau and become stale should we take no action within those 20 years. After 20 years have past, there will be a hangover period of another 10 or 20 years (most likely) before most certainly question types and variation will be worn out. This can present problems for question difficulty and the predictability of question types in the future, and may make the UKLO competition lose its originality in style and nuance. This is why it is important for us to innovate and find new styles of questioning to push the marker further down the line. There is a limit that UKLO questions will be totally discovered in about 950 years should we find no more new themes. Steps to innovation should start with identifying new question styles and themes (as

highlighted in the tables) and then new linguistic forms for questions. UKLO may in the future split products to cover all these possibilities, or open up the possibility of new ventures and diversification."

Comments from the author:

Since the writing of this analysis, more themes have been discovered from the original data set, so the numbers could be imprecise. However, the observations and conclusions remain the same, which is that we need to continue to innovate on new themes to avoid the risk of repeating ourselves in the question styles and causing a variation drought where the difficulty of questions over time become easier (over a period of 10 years each) because they are more predictable. The periodic table and theme tables are still relevant to give to test development to think of new ideas to keep questions challenging and unpredictable.

I believe it is likely that these problems will not surface, because of the nature of the current test development to innovate and find new ways to challenge students. Still, it is a mathematical reality that we need to be active rather than inactive on innovation. The success of UKLO across schools is undeniable, and the analysis focuses on making something great for schools even better for schools. The risk is that the quality will stay the same high quality rather than get better overtime. The strategy is very long-term and looks at trends in 10 year periods; positive changes can only really be felt in a couple decades time.

This analysis actually should inspire schools to adopt UKLO, because the conclusions are very encouraging. The standard of the questions delivered by UKLO is currently very high-quality and widely appreciated by schools, and we are pushing to make it even higher. The worst-case scenario outlined by this analysis is that UKLO will plateau at high-quality and become predictable in 20 years' time, and that scenario is very unlikely. In other words, it's likely that UKLO will grow from high-quality to higher-quality, will become more diverse and unpredictable in its questioning than in previous years. It identifies the UKLO product as a very stable and growing, with a life span of at least 950 years.

Future Projections

How will the classification system develop in the future?

The current classification system is being changed with a different focus on the problem-solving aspect, and the LO (Linguistics Olympiad) competition. This is to benefit competitors that will require LO terminology and adjustments for the UKLO competition. The current working system is considered too technical and academic to be of full use for students. This will require a change in the technical information and redefinitions of the current model. I'm happy to say that the classification system is being built on by members of test development to suit their specific needs, and it will replace the system written here. In case something more historical needs to be referred back to, this document is here for them as a general reference on the general theory and practice that worked successfully.

The introduction of AI and its effect on linguistics competitions

It is only a matter of time before new measures will be added to the UKLO question tables for added user experiences. One such measure I can foresee in the future is question difficulty, which I will draft theoretically here. I believe the best way to access question difficulty is computationally, and can be done manually, but would most likely be automated by learning models in artificial intelligence. This is something for the future and probably will not be implemented any time soon.

Parameters to measure question difficulty

Complexity: The instructions required to complete a task.

Time taken

Given a question q and question q_2, and the time taken to complete the questions were t and t_2 respectfully, it $t_2 > t$ then q_2 is more difficult than q.

There is a problem with this assumption, because the way in which time is spent can differ between people on the same problem set. So you can have a wide range of times on one problem, it cannot mean that the question is a wide range of difficulties. So the statement cannot literally be true. Even with averages, the choice of the data set by which you place an average is arbitrary, you can have multiple averages that point to different times and therefore different difficulties. If you then average all the averages, you end up with a figure that captures a time and a difficulty. Then the problem comes if you change the problem set, which would change the difficulty, but you are stuck with an immovable figure with a huge data set that would require a lot of different values to shift. You would then have to discard all the data and start again, but if it really measured difficulty, wouldn't the measure change instantly as the problem changes, in the same way that a measuring jug that measures volume would change its volume measurement if water poured out of it?

You can place a theoretical measurement of time by the time taken for a machine to complete the problem. This could possibly work, but it may not apply perfectly to human beings because they do not think completely rationally e.g. to find the shortest way to solve a problem.

Time certainly plays a role in the difficulty of a problem, but we need to be careful how we apply it in order to mean that something is more difficult than something else.

Data Size Length

If given a question q of complexity g, with data set d and another question q_2 of complexity g with data set d_2, if $d_2 > d$, then q_2 is more difficult than q.

We can see this in a maze problem, when the maze is enlarged, the instructions required to complete the maze is the same, but the effort and time required to complete it will increase, and so will be more difficult.

If a person takes x amount of time to complete q, the same person will take y amount of time to complete q_2 where $y > x$. This would also be true if a large set of people completed q and q_2, even though their times would be different, the $y > x$ relation would be constant among all of them. If you varied the size of the data, notice that the time does not need to be measured, because if $d_3 > d_2$ then z, the time taken to complete d3, would be relationally less than y.

For UKLO problems, if a data set had 5 sentences with complexity g, it would be easier than a data set with 10 sentences and complexity g. For example if you took any problem from UKLO and doubled the data size but maintained the same complexity, it would be more difficult.

However, this is not necessarily true, because it might make it easier if there are more of the same patterns being displayed in the table with the same complexity.

So data size isn't a good measure of difficulty either.

Let's move onto another measure from this then:

Number of occurrences

If given a question q of complexity g, and another question q_2 of complexity g_2, where $g = g_2$. Then given instructions g_{11} g_{12} g_{13}.... From complexity g where the occurrences available to complete g_{11} is o_{11}, g_{12} o_{12} and so on. If in two scenarios $o_{11} = o_{12} = o_{13}...$ in g, and $o_{21} < o_{22} < o_{23} = o_{13}$ in g_2 then q_2 is more difficult than q.

At the moment I cannot find an example where this cannot be true, so I would consider this an interesting parameter to test.

Along with this I believe this is also true

Complexity

If given a question q of complexity g, and another question q_2 of complexity g_2, where $g_2 = g + c$ where c is added complexity, and $g_2 > g_1$ then q_2 is more difficult than q

Therefore, we can make a more general notion of complexity g:

Complexity Multiplier Effect

$g_1 > g_2$ if the frequency of g divisibility in g_1 is greater than the frequency of g divisibility g_2, where g divisibility is the total number of minimal g_0 elements that compose the complexity g

What makes an instruction harder than another? Probably because there are more instructions in one than another, otherwise they would be the same difficulty. I think this is a fair assumption to make, and is computable. This can be worked out by binary branching.

I have one more final comment to make on how important order is to complete a task, which may disprove the multiplier effect. Say for example the task was to wipe a window with a wet cloth, and two people are given a complexity of g with 4 g units:

g_1: grab a cloth

g_2: place it against the window

g_3: spray water

g_4: Wipe the cloth against the window

Person 1 does the task in this order: g_1,g_2,g_3,g_4, person 2 does the task in this order, g_3,g_2,g_4,g_1. Person 1 would complete the task and person 2 would place water against the window, grab a cloth and not complete the task. However according the multiplier effect, they would have the same difficulty, when actually Person 1's task was much easier than person 2. In fact, you'll find that this task can only be done in the configuration of g_1,g_2,g_3,g_4. Ever other configuration fails. So the condition for completion, as well as the multiplier effect, is that the g units have been correctly ordered. If for example there was more than one way to complete this task, it would be easier just by probability of finding the correct order. But for this example, it was 1 in 24, and when solving a problem where the g units are scattered and not obvious how to combine them, 1 in 24 is pretty difficult. So from this we have the final parameter I'll put in for consideration before I close this.

Order of complexities

If given a question q of complexity g = {g_1, g_2, g_3, g_4...} with order configuration of c, and another question q_2 of complexity g_2 = {$g_{21}, g_{22}, g_{23}, g_{24}$...} with order configuration of c_2, where order configuration is the number of successful orders possible to complete the task, then q is more difficult than q_2 if:

$$\frac{c}{|g|} g < \frac{c_2}{|g_2|} g_2 \; s.th \; \frac{c}{|g|} \neq \frac{c_2}{|g_2|}$$

Where $|g|$ and $|g_2|$ measure the number of elements in the set. Note the limitation to this inequality when $\frac{c}{|g|} \approx \frac{c_2}{|g_2|}$, in such cases the inequality is probably the reverse.

There are also strange consequences to this for example, if g = $2g_2$ and $2\frac{c}{|g|} = \frac{c_2}{|g_2|}$, you get the same difficulty, which is not correct if the difference between g and g_2 is huge and the difference between $\frac{c}{|g|}$ and $\frac{c_2}{|g_2|}$ is small, clearly q_2 would be more difficult. Therefore this could be a balancing equation to solve this.

$$\frac{cg^2}{|g|g_2} < \frac{c_2 g_2{}^2}{|g_2|g}$$

This would be true for q_2 is more difficult than q_1 and a reverse inequality for vice versa.

I will leave the exact equation for future researchers, but this is one way to think about the problem.

I also predict that there will come a time when UKLO questions can be generated by AI, once parameters have been set and a model of difficulty is agreed on. This probably will happen in my lifetime, and we can already see AI chatbots like ChatGPT generating UKLO-like questions. The answers were given in brackets.

Polish Sentence	English Translation
Kot lubi mleko.	The cat likes milk.
Dom jest duży i czerwony.	The house is big and red.
Pies biega po polu.	The dog runs in the field.
Ja lubię czytać książki.	I like to read books.
Mama gotuje obiad w kuchni.	Mom cooks dinner in the kitchen.
Tato pracuje w biurze.	Dad works in the office.
Samochód jest czarny i szybki.	The car is black and fast.
Kawa jest gorąca.	The coffee is hot.
Słońce świeci na niebie.	The sun shines in the sky.
Dzieci bawią się w parku.	Children play in the park.

Possible questions with Polish sentences that can only be correctly translated using the data table above it:

1. Co lubi kot? (What does the cat like?)
2. Jaki jest dom? (What is the house like?)
3. Co robi pies? (What is the dog doing?)
4. Co lubisz robić? (What do you like to do?)
5. Gdzie mama gotuje obiad? (Where does mom cook dinner?)
6. Gdzie pracuje tato? (Where does dad work?)
7. Jaki jest samochód? (What is the car like?)
8. Co jest gorące? (What is hot?)
9. Co świeci na niebie? (What shines in the sky?)
10. Gdzie dzieci się bawią? (Where do children play?)

To correctly answer these questions, the person needs to refer to the table and use the English translations to identify the corresponding Polish sentences.

In some ways this is sad for those who enjoy the question generation process, but there may come a time when a computer generates questions so difficult a human can't solve them. I can also see the advantages of AI to generate more diverse questions for UKLO, so it's a double-edged sword.

Final Comments from the author:

The computational approach to classifying UKLO questions has achieved the following:

- A complete and working system to classify all UKLO questions and future questions
- A totally computational classification of UKLO questions by observation and detailed criteria of parameters and definitions
- An improved user experience for students and teachers when searching for specific types of questions

The discoveries of this research are as follows:

- UKLO questions are a combination of different linguistics subjects, each with different dominances and dominance counts.
- UKLO questions have unchangeables; features that are unalterable, including question formats, themes and subjects
- That a computational approach to classifying UKLO questions, as well as a classification system in general, is possible.
- That a classification system for UKLO question can successfully classify all questions under the same criteria.
- UKLO questions are similar to others which before was presumed to be totally different, by observational classification of only the linguistics subjects they contain.

Appendix A: Logs and Developments

This information contains mostly historical changes and changes to systems

Table version log

2.341(08/07/2023)

Labelling Mistake: Bulgarian 2018, Beijing 2016, Armenian 2010, Words > Writing

2.34(06/07/2023)

Pragmatics Category Removed: Theoretical adjustments as new discoveries made on unchangeables. (see technical information)

Underscores added to all elements (hopefully!)

New Category: Stories

2.331(04/07/2023)

Minor update: no change to table data. Updates to technical information

2.33(19/04/2023)

Changed Filipino 2021 Marking Scheme (Re-Edit)

2.32 (13/04/2023)

Added Pular Question

Added Round 2 Bundle 2023

Fixed issues with Filipino 2021 (new version added)

2.31 (30/03/2023)

Added nicknames to some 2023 questions

Finished updates for 2011 and 2010

Arrernte:MoPho > MoSe
Indonesian: Se > PrSe
Warlpiri MoPho > PhoSe

English R1_2: Se > PrSe
Armenian: Se > PrSe

Corrections:
Tangkhul: Match-Up > Mixed (Answer & Match-Up)

English R1_7: + Encrypted, Se > MoSe

Cree Answer > Match-Up
English R2_3: Answer > Mixed (Answer & Match-Up)

Adding to the Pragmatics Category: Variations of Spatial Implicature
Adding to Question Format (Note this excludes explanation questions in round 2)

2.30 (28/03/2023)

2023 Round 1 and 2 papers released

2.28 (17/03/2023)

2012 updated

English -Pho + Mo

Luiseno +Sy

Haitian +Pho -Mo

Bardi +Mo +Sy

Waorani -Mo

Acturan -Mo

Waanyi +Mo

Catalan +Se

2.27(13/02/2023)

New Theme Found: Phonotactics

2.26(09/03/2023)

2013 updated

Zapotec + Pho

Bulgarian + Sy + Pho

Dutch + Pho

Swedish + Maps (Mistake)

2.25(08/03/2023)

2014 updated:

Maori + Phe

Kairak + Pho + Se

Navajo + Pho

English 2014: another case study for no Se

Adding reduplication into morphology category

2.24(07/03/2023)

2015 updated:

Polish -Mo

Murrin. +Se

Aymara -Se (Important)

Finnish + Sy + Mo

English + Pr

Important discoveries:

1. Aymara 2015, out of this analysis is the only question that has no semantics at all, it is a purely monolinguistic Pho question. This means: a) a Pho monolinguistic category is possible b) there is no hierarchy of linguistics in UKLO questions, i.e. there is no derivation from Semantics as a central node c) previous analysis of PhoSe is incorrect and has been overestimated. One of the characteristics of Aymara is the lack of an english or any language – language translation, or a hint to meaning at all, which was assumed to be the case for all UKLO questions. That assumption has now turned out to be false. The question is focused on phonotactics.

2. English 2015 shows another avenue for a pragmatics question. Comparing English 2015 with Aymara 2015, there is a subtle distinction to be made between acceptable and unacceptable, and right and wrong. We've classified the latter to be pragmatics based, and the former to be based on rules that is outside the realm of human intuition that contrasts from a computer's reasoning.

2.23(06/03/2023)

2016 updated:

Estonia, Tocharian + Se

Malay + Mo

2.22(05/03/2023)

2017 updated:

Abkhaz,Proto, Hieroglyphics +Pho

2.21(03/03/2023)

2018
Romanian : +Se
Pame: + Pho, +Sy
Nivkh: + Pho
Mixtec: + Pho
Menya: + Pho

Mongo 2020 +Se
Italian 2022 +Se
Kabyle 2021 + Se
Mongolian 2019 + Se

2.20(01/03/2023)

Important update:

2019 papers updated:

Corrections: Mongolian: MoPho > MoPhePho, Gumatj: Se > SeSy, Polish: MoPhoSeSy > PhoSeSy, Witsuwiten: SeSy > PhoSeSy

Important case study: Mongolian 2019, caused all these minor changes

All _*Pho_ > _**Pho***Se_

Note: With the corrections in place from the discovery of a miscalculation from Mongolian 2019 in the light of a Phe presence to be a total but loose identification of Phonetics, a monolinguistic Pho category in fact does not exist in UKLO questions. It is in fact bilinguistic paired Se with Pho taking the dominant characteristic. An important question to ask is, is a Pho category possible, can it be created? There is evidence that this is theoretically possible(Kakawin 2021, Mongo 2020, Catalan 2012). Will this have an effect across other linguistic branches?

2.14(19/02/2023)

Updated linguistics formula (2020)

2.13(10/02/2023)

Updated linguistics formulas (2021)

Small changes to terminology of affix in morphology/syntax distinction (solved)

2.12 (05/02/2023)

New theme discovered: Ancient

Updated 2022 linguistics formulas (2022)

2.11(17/01/2023)

2021 A3 > Added Numbers Label, mistake found

2.10 (06/01/2022)

NEW COLUMN: Reference Name (A Unique reference given to each question for quick referral, ordered by year and question number starting at 1 from question 1 of 2010), some questions are given fun nicknames.

2.01 (19/12/2022)

underscores added to linguistics formulae for more accurate searches

2.0 (19/12/2022) BIG-UPDATE-

Advances in research has resulted in a new reformed, simplified and refined classification system

Adding a new linguistic formula

Complete classification system

Adding Emphasised markers (bold) to show subject dominance in a question

Early Changes:

Luiseno: MoPhe
Estonian: *Mo_BOLD*Sy
Italian 2017 Mo*Sy_BOLD
Catalan MoPhoSy

Sentences: Waama,Chintang, heraldry, Kaqchikel, Polish, Hmong, Indonesian 2013, Papago, Tangkhul, Vietnamese 2010
Words & Sentences: Menya, Viet,Kiswahili, Quechua, Bardi,

1.38 (28/11/2022)

Mislabelling of the Hybrid C class
Hybrid C (MSw) + Syntax #HCL2 >> Hybrid C (MSw), Semantics, Syntax #HCL2
Hybrid C (SSw) + Syntax #HCL2 >> Hybrid C (SSw), Semantics, Syntax #HCL2

1.371(16/11/2022)

Solved Mapudungun https issue, should be downloadable now.

1.37 (17/09/2022)

Merged Question and Question Data + Answer Column

Bundle column removed and placed in a new table below

fixed issue with Zoom-in/out feature and width length of the table

1.361(12/09/2022)

Changed titles of Round 1 2022 and Round 2

1.36 (11/09/2022)

Introduced new search feature for Levels

For Breakthrough questions only: search Breakthrough_

For Foundation questions only: search Foundation_

For Intermediate questions only: search Intermediate_

For Advanced questions only: search Advanced_

1.353 (11/09/2022)

Fixed syntax inaccuracy with Hybrid C Class

Hybrid (>> Hybrid C (

Hybrid C Semantics, Syntax >> Hybrid C + Syntax

1.352 (10/09/2022)

Single Words (>> Single Words C (
Single Words + >> Single Words C +
Single Words #SwCl4 >> Single Words C #SwCl4
Single Words, >> Single Words C,
Single Words C, Phonetics, Phonology #SwPhp >> Single Words C, Phonetics, Phonology #SwCl2

l1,l2,l3,l4 >> L1, L2, L3, L4

1.351 (08/09/2022)

Technical Information Updated

1.35 (07/09/2022)

Ml1/Ml3 >> MAl1/MAl3

Ml2 >> MCl2

Mcl1/Mcl3 >> McAl1/McA3

Mcl2 >> McCl2

Multiple-choice l2 rows swapped

1.34 (06/09/2022)

Sentences – Morphology #Sel2 >> Sentences, Syntax #Sel2

Nung 2016 Sentences – Semantics #Sel2 >> Sentences #Sel3

Swl1, #Swl2, #Swl3 >> #SwCl1, #SwCl2, #SwCl3

Hl2 >> #HCl2, Hl4 >> #HCl4

Icelandic 2018 Single Words A #SwAl2 >> Single Words A (Maps: Family) #SwAl2

v1.33 (05/09/2022)

Further Simplified Hybrids

New Classification System

Important Details logged here:

Semantics (Writing) #W1Se >> Single Words A (Writing) #SwAl1

Morphology, Semantics (Writing) #Wl2mSe >> Single Words A (Writing) #SwAl2
Semantics (Writing), Syntax #Wl2SeS >> Single Words (Writing) + Syntax #Swl2
Phonology, Semantics (Writing) #Wl2pSe >> Single Words (Writing) + Phonology #Swl2
Phonetics, Semantics (Writing) #Wl2PhSe >> Single Words (Writing) + Phonetics #Swl2
Morphology, Semantics (Writing), Syntax #Wl3mSS >> Single Words A (Writing) #SwAl3
Phonology, Semantics (Writing), Syntax #Wl3pSS >> Single Words B (Writing) #SwBl3

Tocharian >> Single Words B #SwBl2
English 2012 R2.1 >> Single Words B #SwBl1
Arrernte 2011 >> Single Words B #SwBl2

Removed Ordering #O Category

Single Words, Semantics, Syntax #Swl2SeS >> Single Words + Syntax #Swl2
Encrypted, Semantics (Writing) #El1SeW >> Hybrid A (Encrypted) #HAl1

Testable definition for Writing: Excludes imaginary scripts (like musical notes)

Single Words, Semantics #Swl1Se >> Single Words A #SwAl1

Single Words, Phonology #Swl1p >> Single Words B #SwBl1
Single Words, Phonology, Semantics #Swl2pSe >> Single Words + Phonology #Swl2
Single Words, Morphology, Syntax #Swl2mSy >> Single Words, Morphology, Syntax #Swl2

Multiple-Choice, Semantics #Mcl1Se >> Multiple-Choice #Mcl1
Multiple Choice, Pragmatics, Semantics, #Mcl1PrSe >> Multiple Choice, Pragmatics #Mcl2
Multiple-choice, Morphology, Semantics #Mcl2mSe >> Multiple-Choice A #McAl2

Maps, Semantics (Writing) #Mal1SeW >> Single Words A (Maps) #SwAl1

Maps (Family), Morphology, Semantics #Mal2mSe >> Single Words A (Maps: Family) #SwAl2
Maps (Grid), Semantics #Nal1Se >> Single Words A (Maps: Grid) #SwAl1

Semantics (Numbers) #Nl1Se >> Sentences (Numbers) #Sel1
Morphology, Semantics (Numbers) #Nl2mSe >> Sentences (Numbers) #Sel2
Semantics (Numbers), Syntax #Nl2SeS >> Sentences (Numbers), Syntax #Sl2
Morphology, Semantics (Numbers), Syntax #Nl3mSS >> Sentences (Numbers) #Sel3

Yoruba, Danish >> Single Words A (Numbers) #SwAl2
Karelian >> Single Words A (Numbers) #SwAl3

Technical Information Updated

v1.32 (04/09/2022)

Hybrid Category Simplified

Hybrid (match-up, single words) >> Match-up, Single Words
Hybrid (sentences, single words) >> Sentences, Single Words
Hybrid (multiple-choice, sentences) >> Multiple-Choice, Sentences
Hybrid (multiple-choice, single words) >> Multiple-Choice, Single Words
Hybrid (match-up, sentences) >> Match-up, Sentences
Hybrid (match-up, multiple choice) >> Match-up, Multiple Choice

Ha >> #H, Hc >> #H, Hd >> #H, He >> #H, Hf >> #H, Hg >> #H, Hh >> #H

+>> = adding and changing

Albanian Question: Match-up, Multiple-Choice, Single Words +>> Maps
Hungarian 2014 Question: Multiple-Choice +>> Maps (Grid)
Bulgarian 2018 Question: Semantics (writing) +>> Maps
Beijing 2016 Question Semantics (writing) +>> Maps
Armenian 2010 Question: Semantics (Writing) +>> Maps
Kayteye 2017 (Single Words, Morphology, Semantics) +>> Maps (Family)

Mutation from maps in semantics category: Wl1Se >> Mal1SeW

[i] questions all solved

Nivkh >> Match-up, (+) Sentences, Morphology, Semantics, Syntax #Hl3mSS

Italian 2017 >> Single Words,(-) Morphology, Syntax #Swl1Sy

Devanagari >> (+) Match-up, Semantics (Writing) #Ml1SeW

Music >> (+) Encrypted, Semantics (Writing) #El1SeW

New Category Found: Encrypted

Yidiny >> (+) Sentences (-) Multiple Choice, Morphology, Semantics, Syntax #Sl3mSS

Navajo >> (+) Sentences (-) Multiple Choice, Morphology, Semantics, Syntax #Sl3mSS

Georgian/Armenian >> Match-up(+), Semantics (Writing) #Ml1SeW

English 2012 R2 1 (Intepreted as Phonological Rules) Ordering, Phonology, (-) Semantics #Ol1p

Minangkabau >> Single Words, (-) Morphology, Phonology #Swl1p

Cree 2010 >> Single Words (-), Morphology, Semantics (Writing) #Wl2mSe

+ and − notation added (Sentences + Phonology = Morphology, Phonology, Semantics, Syntax)

Yidiny, Navajo, Tshiluba >> #Sel3
Ute >> Sentences + Phonology #Sel4
Mongo 2020 >> Single Words, Morphology, Phonology, Syntax #Swl3mpSy
Sentences, Semantics, Syntax #Sl2SeS >> Sentences − Morphology #Sel2
Sentences, Morphology, Syntax #Sl2mSy >> Sentences − Semantics #Sel2

New System for Single Words:

Single Words A = Morphology, Semantics, Syntax (l3) , Morphology, Semantics (l2)

Single Words B = Morphology, Phonology

v1.31 (03/09/2022)

- Fixed issue with 2SS > 2SeS

- Hi and Hb Categories removed

- Numbers, Semantics >> Semantics (Numbers)

- Writing, Semantics >> Semantics (Writing)

- Single Words, Phonology #Swl1p >> Phonology #l1p

- Fixed Catalan and Arapaho coding mistake

- Sentences, Morphology, Semantics, Syntax #Sl3mSS >> Sentences #Sel3

- l4mpSS >> l4, l4pmSS >> l4

- Technical Information Updated

v1.3 (02/09/2022)

- All Questions now Classified

- First Round of Analysis is Finished

- Second Round of Re-Analysis Starting

- Technical Information Updated

- +10 Categories

1.24 (01/09/2022)

- Questions for years 2010-2013 separared (renewed)

- All Legacy Questions 2010-2014 cleaned up and design reworked

1.23 (31/08/2022)

- Classifications for 2014-2016 added

- Technical Information updated

- Author names updated

- 2014 (new) individual question search available

- New Question Style found: Ordering (O)

- +12 categories

1.22 (30/08/2022)

- Classifications for years 2017-2018 added
- Technical Information updated
- +7 new categories

1.21(29/08/2022)

- Classifications for year 2019 added
- Changes to 'Writing', 'Pragmatics', 'Numbers'
- 6 new categories found, question type found: Hg
- Fixed issue with horizontal scrolling on iOS/Android, horizontal scrolling now operational

1.2 (28/08/2022)

- Classifications for years 2020-2022 added
- New coding system added for more flexibility in searching

mini update v1.15 (25/08/2022) *refinement and fine-tuning in prep. for next update*

- Removed Extra Question Data Column, placed questions and answer data together in one zip file.
- Removed extra rows 2014/2013 intermediate, 2012 intermediate/advanced, 2011/advanced, compiled files together into combined level packs

1.1 (20/08/2022)

- Added new Level Column (use the search box to filter levels)
- Added new Author Column (like a particular question? See other questions written by the same author)

Appendix B: HTML Edits like show dominance and anchor tags like <a> are kept

Level	Question Data + Answers	Reference Name	Linguistic Formula	Question Format	Volume and Texture	Theme	Author
Breakthrough_	2023_R1_1 Umbrian	191	_*Pho*Se_	Answer	Words	Ancient (300BC)	Michael Salter
Breakthrough/Foundation	2023_R1_2 Jam Sai	192	_*Pho*Se_	Answer	Words	N/A	Tamila Krashtan , translated by Harold Somers
Breakthrough/Foundation	2023_R1_3 Gilbertese	193 'The Scattering'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Danylo Mysak, translated by Harold Somers
Foundation/Intermediate	2023_R1_4 Swedish Runes	194	_*Mo*Se_	Mixed (Answer and Match-up)	Writing	N/A	David Hellsten
Foundation/Intermediate	2023_R1_5 Permyak	195	_*Mo*Se_	Answer	Words	N/A	Pavel Iosad
Intermediate/Advanced	2023_R1_6 Albanian	196	_*Se*Sy_	Mixed (Answer and Match-up)	Sentences	N/A	David Hellsten
Intermediate/Advanced	2023_R1_7 Lardil	197	_*Mo*Se_	Mixed (Answer and Multiple-Choice)	Words & Sentences	Maps: Family	Michael Salter
Advanced_	2023_R1_8 Meroitic	198	_*Se_	Mixed (Answer and Match-up)	Writing	Ancient (300BC)	Ethan Chi
Advanced_	2023_R1_9 Kiche	199	_*Mo*Se*Sy_	Answer	Sentences	N/A	Michael Salter
Advanced_	2023_R1_x 10 Filomeno Mata Totonac	200	_*Mo*Pho*Se_	Mixed (Answer and Match-up)	Words	Senses and Feelings	Simi Hellsten
Round 2	2023_R2_1 Abawiri	201	_*Phe*Pho*Se*Sy_	Answer	Words	N/A	Daniel Lovsted

Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2023/03/2023_R2_2-Roon.pdf" title="2023_R2_2 Roon">2023_R2_2 Roon</a>`	202	_*Mo*Pho*Se*Sy_	Answer	Sentences	Numbers	Riley Kong
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2023/04/2023_R2_3-Pular.pdf">2023_R2_3 Pular</a>`	203	_*Mo*Se*Sy_	Answer	Sentences	N/A	Ishraq Farhan, Simi Hellsten
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2023/03/2023_R2_4-Komnzo.pdf" title="2023_R2_4 Komnzo">2023_R2_4 Komnzo</a>`	204 'The Clockwork'	_*Phe*Pho_	Answer	Words	Phonotactics	Simi Hellsten
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2023/03/2023_R2_5-Mongo.pdf" title="2023_R2_5 Mongo">2023_R2_5 Mongo</a>`	205 'The Magnet'	_*Mo*Pho*Se_	Answer	Words & Sentences	N/A	Takumi Ose, translated by Kazune Sato
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/1_UKLO-2022-Swedish_The-Pink-Pig-is-Pink_-Complete-Script.pdf">2022_R1_1 Swedish</a>`	176	_*Se*Sy_	Answer	Words	N/A	David Hellsten
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2_UKLO-2022-Buhid_Buhid-Script_Complete-Script.pdf">2022_R1_2 Buhid</a>`	177	_*Se_	Answer	Writing	N/A	Babette Verhoeven
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/3_UKLO-2022-Italian_Definitely-Italian_Complete-Script.pdf">2022_R1_3 Italian</a>`	178	_*Mo*Se*Sy_	Answer	Words	N/A	Julia Barron
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/06/4_UKLO-2022-Maltese_A-Dogs-Breakfast_-Complete-Script.pdf">2022_R1_4 Maltese</a>`	179	_*Pho*Se*Sy_	Mixed (Answer and Match-Up)	Sentences	N/A	Michael Salter
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/5_UKLO-2022-Arhuaco_Arhuaco-things-places_-Complete-Script.pdf">2022_R1_5 Arhuaco</a>`	180	_*Mo*Se*Sy_	Answer	Words	N/A	Babette Verhoeven
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/6_UKLO-2022-Bislama_Back-And-Forth-In-Bislama_-Complete-Script.zip">2022_R1_6 Bislama</a>`	181 'The Butterfly'	_*Se_	Answer	Writing	N/A	Michael Salter
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/7_UKLO-2022-Korowai-and-Haruai__Complete-Script.zip">2022_R1_7 Korowai and Haruai</a>`	182 'The Number Twins'	_*Mo*Se*Sy_	Answer	Words	Numbers	Simi Hellsten
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/06/8_Adv_UKLO-2022-Zuni_Zuni-Tunes__Complete-Script.pdf">2022_R1_8 Zuni</a>`	183	_*Mo*Se*Sy_	Answer	Words	N/A	Michael Salter

Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/9_Adv_UKLO-2022-Tseltal__Complete-Script.pdf">2022_R1_9 Tseltal</a>`	184	_*Mo*Pho*Se*Sy_	Answer	Words & Sentences	N/A		Simi Hellsten
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/10_Adv_UKLO-2022-Mazateco_You-Know-How-To-Whistle-Dont-You_Complete-Script.pdf">2022_R1_x10 Mazateco</a>`	185 'The Echo'	_*Mo*Pho*Se*Sy_	Mixed (Answer and Match-Up)	Words	N/A		Michael Salter
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2022_R2_1_Mapudungun.pdf">2022_R2_1 Mapudungun</a>`	186	_*Mo*Pho*Se*Sy_	Answer	Words & Sentences	N/A		Junnosuke Kajita, Kazune Sato (Japan 21)
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2022_R2_2_Wik-Mungkan.pdf">2022_R2_2 Wik-Mungkan</a>`	187	_*Se*Sy_	Match-up	Words	N/A		Ryan Chi
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2022_R2_3_Niuean.pdf">2022_R2_3 Niuean</a>`	188	_*Mo*Se*Sy_	Answer	Sentences	N/A		Simi Hellsten
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2022_R2_4_Dinka.pdf">2022_R2_4 Dinka</a>`	189	_*Pho*Se_	Answer	Words	N/A		Simi Hellsten
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2022_R2_5_Taos.pdf">2022_R2_5 Taos</a>`	190 'The Animal'	_*Mo*Se*Sy_	Answer	Sentences	N/A		Simi Hellsten
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_1-Ogham.pdf">2021_R1_1 Ogham</a>`	159	_*Se*Sy_	Answer	Writing	N/A		Babette Verhoeven
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_2-Kabyle.pdf">2021_R1_2 Kabyle</a>`	160	_*Mo*Se*Sy_	Mixed (Answer and Multiple-Choice)	Sentences	N/A		Kazune Sato, Simi Hellsten
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_3-Waama.pdf">2021_R1_3 Waama</a>`	161	_*Mo*Se*Sy_	Match-up	Sentences	N/A		Aleka Blackwell
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_4-Ditema.pdf">2021_R1_4 Ditema</a>`	162 'The Mirror'	_*Phe*Se_	Answer	Writing	N/A		Michael Salter
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2023/04/2021_5-Filipino.pdf">2021_R1_5 Filipino</a>`	163	_*Se*Sy_	Answer	Sentences	N/A		Babette Verhoeven
Intermediate_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_6-Longgu.pdf">2021_R1_6 Longgu</a>`	164 'The Conversationalist'	_*Se_	Multiple-Choice	Words & Sentences	Senses and Feelings		Babette Verhoeven
Intermediate_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2021_7-Latvian.pdf">2021_R1_7 Latvian</a>`	165 'The Child'	_*Se*Sy_	Mixed (Answer and Match-Up)	Words	N/A		Aleka Blackwell
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/07/2021_A1_Mandom`	166 'The Maze'	_*Mo*Se_	Answer	Writing	N/A		Ryan Chi

	be.pdf">2021_R1_A1 Mandombe						
Advanced_	2021_R1_A2 Old Chinese	167	_*Pho*Se_	Mixed (Answer and Match-Up)	Words	Ancient (1000BC)	Ethan Chi
Advanced_	2021_R1_A3 NgkoImpu	168	_*Se*Sy_	Answer	Sentences	Numbers	Simi Hellsten
Advanced_	2021_R1_A4 Sauk	169	_*Mo*Se_	Match-up	Words	N/A	Ryan Chi
Advanced_	2021_R1_A5 Daagare	170	_*Pho*Se_	Answer	Words	N/A	Ethan Chi
Round 2	2021_R2_1 Kakawin	171	_*Pho*Sy_	Mixed (Match-Up and Multiple-Choice)	Words & Sentences	N/A	Michael Salter
Round 2	2021_R2_2 Hawu and Dhao	172	_*Mo*Pho*Se*Sy_	Mixed (Answer and Multiple-Choice)	Sentences	N/A	Evan Hochstein
Round 2	2021_R2_3 Ainu	173	_*Mo*Se*Sy_	Answer	Sentences	N/A	Vlad Neacsu
Round 2	2021_R2_4 Hmong	174	_*Se*Sy_	Match-up	Words	N/A	Simi Hellsten
Round 2	2021_R2_5 Tawala	175 'The Cryptic Philosopher'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Simi Hellsten
Breakthrough_	2020_R1_1 Dutch	144	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Liam McKnight
Breakthrough/Foundation	2020_R1_2 Cuneiform	145 'The Matchstick'	_*Se_	Answer	Writing	Ancient (3400BC)	Martin Worthington
Breakthrough/Foundation	2020_R1_3 Norwedish	146 'The Lost Passenger'	_*Mo*Se*Sy_	Mixed (Answer and Multiple-Choice)	Sentences	N/A	Babette Verhoeven
Foundation/Intermediate	2020_R1_4 Ligurian	147	_*Pho*Se_	Answer	Words	N/A	Kevin Liang
Foundation/Intermediate	2020_R1_5 Mongo	148	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Kevin Liang
Intermediate/Advanced	2020_R1_6 Idalion	149	_*Pho*Se_	Answer	Writing	Ancient (approx. 450AD)	Michael Salter

Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2020_7.-Chintang.zip">2020_R1_7 Chintang</a>`	150 'The Wet Market'	_*Mo*Se*Sy_	Match-up	Sentences	N/A	Aleka Blackwell
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_8.-Papiamentu.pdf">2020_R1_8 Papiamentu</a>`	151	_*Pho*Se_	Multiple-Choice	Words	N/A	Harold Sommers
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_9.-Yukhagir.pdf">2020_R1_9 Yukhagir</a>`	152	_*Mo*Se*Sy_	Answer	Sentences	N/A	Kobayashi Tsuyoshi
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_10.-Inapari.pdf">2020_R1_x10 Inapari</a>`	153 'The Complicated'	_*Mo*Se_	Answer	Words & Sentences	N/A	Sam Ahmed
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_R2_1-Paiwan.pdf">2020_R2_1 Paiwan</a>`	154 'The Hunter'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Sam Ahmed
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_R2_2-Yoruba.pdf">2020_R2_2 Yoruba</a>`	155	_*Mo*Se_	Answer	Words	Numbers	Harold Somers
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_R2_3-Miao.pdf">2020_R2_3 Miao</a>`	156 'The Toad'	_*Pho*Se*Sy_	Answer	Writing	N/A	Ethan Chi
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_R2_4-Ute.pdf">2020_R2_4 Ute</a>`	157	_*Mo*Pho*Se*Sy_	Answer	Sentences	N/A	Liam McKnight
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2020_R2_5-Arapaho.pdf">2020_R2_5 Arapaho</a>`	158	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Daniel Lovsted
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_1-Ladin.pdf">2019_R1_1 Ladin</a>`	129	_*Pho*Se_	Answer	Words	N/A	Julia Barron
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_2-Japanese.pdf">2019_R1_2 Japanese</a>`	130	_*Se*Sy_	Answer	Writing	N/A	Babette Verhoeven
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_3-Jahai.pdf">2019_R1_3 Jahai</a>`	131 'The Curious Nose'	_*Se_	Multiple-Choice	Words & Sentences	Senses and Feelings	Babette Verhoeven
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_4-Welsh.pdf">2019_R1_4 Welsh</a>`	132	_*Pho*Se*Sy_	Mixed (Answer and Multiple-Choice)	Sentences	N/A	Babette Verhoeven
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_5-Pitjantjatjara.pdf">2019_R1_5 Pitjantjatjara</a>`	133 'The Playwright'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Rebecca Dafina and Wilmoth
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_6-Cippus-Abellanus-`	134 'The Ancient Glyph'	_*Se_	Answer	Writing	Ancient (approx. 150AD)	Michael Salter

	l.pdf">2019_R1_6 Cippus-Abellanus							
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_7-Mongolian-I.pdf">2019_R1_7 Mongolian</a>`	135	_*Mo*Phe*Pho*Se_	Answer	Words	N/A	Ethan Chi
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_8-Gumatj.pdf">2019_R1_8 Gumatj</a>`	136 'The Boomerang'	_*Se*Sy_	Answer	Sentences	Numbers	Ethan Chi
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_9-Ndebele.pdf">2019_R1_9 Ndebele</a>`	137 'The Home'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Michael Salter
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_10-Braille.pdf">2019_R1_x10 Braille</a>`	138	_*Se*Sy_	Answer	Writing	N/A	Babette Verhoeven
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_R2_1.-Afrihili.pdf">2019_R2_1 Afrihili</a>`	139	_*Mo*Se_	Mixed (Answer and Multiple-Choice)	Words	N/A	Michael Salter
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_R2_2.-Lepcha.pdf">2019_R2_2 Lepcha</a>`	140	_*Se_	Answer	Writing	N/A	Ethan Chi
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_R2_3.-Polish-nouns.pdf">2019_R2_3 Polish-nouns</a>`	141	_*Pho*Se*Sy_	Answer	Words	N/A	Ms Veneva
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_R2_4.-Cupeno.pdf">2019_R2_4 Cupeno</a>`	142	_*Mo*Se_	Answer	Words	N/A	Daniel Lovsted
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2019_R2_5.-Witsuwiten.pdf">2019_R2_5 Witsuwiten</a>`	143	_*Mo*Pho*Se_	Match-up	Words	N/A	Daniel Lovsted, Sam Ahmed, Ellie Warner
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_1-Romanian.pdf">2018_R1_1 Romanian</a>`	114	_*Mo*Se*Sy_	Answer	Words	N/A	Julia Barron
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_2-Lithuanian.pdf">2018_R1_2 Lithuanian</a>`	115 'The Road Trip'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_3-Bulgarian.pdf">2018_R1_3 Bulgarian</a>`	116	_*Se_	Answer	Writing	Maps	Babette Verhoeven
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_4-Fijian.pdf">2018_R1_4 Fijian</a>`	117	_*Mo*Se*Sy_	Answer	Words	N/A	Vica Papp
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_5-Gilbertese.pdf">2018_R1_5 Gilbertese</a>`	118	_*Se*Sy_	Answer	Sentences	N/A	Michael Salter
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_6-Nko.pdf">2018_R1_6 Nko</a>`	119 'The Guinean Geographer'	_*Pho*Se_	Answer	Words	N/A	Babette Verhoeven, Harold Somers

Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_7-Icelandic.pdf">2018_R1_7 Icelandic</a>`	120	_*Mo*Se_	Answer	Words	Maps: Family	Babette Verhoeven
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_8-Vietnamese.pdf">2018_R1_8 Vietnamese</a>`	121	_*Se_	Match-up	Words	N/A	Tom McCoy, Pat Littell, and Lori Levin
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_9-Pame.pdf">2018_R1_9 Pame</a>`	122	_*Pho*Se*Sy_	Answer	Sentences	Numbers	Milena Veneva
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_10-Albanian.pdf">2018_R1_x10 Albanian</a>`	123 'The Town'	_*Se_	Answer	Words	Maps	Ali Sharman
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_R2.1-Heraldry.pdf">2018_R2_1 Heraldry</a>`	124 'The Shield'	_*Se*Sy_	Match-up	Sentences	N/A	Sam Ahmed
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_R2_2-Nivkh.pdf">2018_R2_2 Nivkh</a>`	125 'The Needy'	_*Mo*Pho*Se*Sy_	Mixed (Answer and Match-Up)	Sentences	N/A	Heather Newell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_R2_3-Menya.pdf">2018_R2_3 Menya</a>`	126	_*Pho*Se*Sy_	Match-up	Words & Sentences	N/A	Aleka Blackwell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_R2_4-Mixtec.pdf">2018_R2_4 Mixtec</a>`	127	_*Mo*Pho*Se*Sy_	Mixed (Answer and Match-Up)	Words	N/A	Babette Verhoeven
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2018_R2_5-Mayangna.pdf">2018_R2_5 Mayangna</a>`	128 'The Ninth Cloud'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Julia Barron
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_1.-Italian.pdf">2017_R1_1 Italian</a>`	99	_*Mo*Sy_	Answer	Words	N/A	Dick Hudson
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_2.-Inuktitut.pdf">2017_R1_2 Inuktitut</a>`	100	_*Pho*Se_	Answer	Writing	N/A	Ollie Sayeed
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_3.-European.pdf">2017_R1_3 European</a>`	101	_*Mo*Se_	Multiple-Choice	Words	N/A	Babette Verhoeven
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_4.-Tshiluba.pdf">2017_R1_4 Tshiluba</a>`	102	_*Mo*Se*Sy_	Answer	Sentences	N/A	Tom McCoy
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_5.-Basque.pdf">2017_R1_5 Basque</a>`	103	_*Mo*Se*Sy_	Answer	Sentences	N/A	Aleka Blackwell
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_6.-Maori.pdf">2017_R1_6 Maori</a>`	104	_*Mo*Se*Sy_	Answer	Sentences	N/A	Aleka Blackwell

Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_7.-Tamil.pdf">2017_R1_7 Tamil</a>`	105 'The Singaporean Tour'	_*Se_	Answer	Writing	N/A	Kai Low
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_8.-Choctaw.pdf">2017_R1_8 Choctaw</a>`	106	_Mo*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_9.-Abkhaz.pdf">2017_R1_9 Abkhaz</a>`	107	_*Mo*Pho*Se*Sy_	Answer	Sentences	N/A	Samuel Andersson, Oliver Sayeed, and Elysia Warner
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_10.-Kaytetye.pdf">2017_R1_x10 Kaytetye</a>`	108	_Mo*Se_	Answer	Words	Maps: Family	Myfany Turpin
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_R2.1-Nepali.pdf">2017_R2_1 Nepali</a>`	109	_*Mo*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_oto-Algonquian.pdf">2017_oto Algonquian</a>`	110 'The Eye'	_Mo*Pho*Se_	Answer	Words	Ancient (1000BC)	Daniel Lovsted
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_R2.3-Viet.pdf">2017_R2_3 Viet</a>`	111 'The Vietnamese Soup'	_*Se_	Match-up	Words & Sentences	N/A	James Hyett
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_R2.4-Hieroglyphs.pdf">2017_R2_4 Hieroglyphs</a>`	112 'The Ancient Egyptian'	_*Pho*Se_	Match-up	Words	Ancient (2800BC)	Dick Hudson
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2017_R2.5-Yupik.pdf">2017_R2_5 Yupik</a>`	113 'The Magician's Square'	_*Mo*Se*Sy_	Answer	Sentences	Numbers	Kai Low
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_1.-Alphabet.pdf">2016_R1_1 Alphabet</a>`	84	_*Se_	Answer	Writing	N/A	Dick Hudson
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_2-Foreign.pdf">2016_R1_2 Foreign</a>`	85 'The Counting European'	_*Se_	Answer	Words	N/A	Dick Hudson
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_3.-Watsonium.pdf">2016_R1_3 Watsonium</a>`	86 'The Chemist'	_Pho*Se_	Answer	Words	N/A	Jane D'Altuin and Harold Somers
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_4.-Beijing.pdf">2016_R1_4 Beijing</a>`	87	_*Se_	Answer	Writing	Maps	Catherine Sheard
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_5-Amele.pdf">2016_R1_5 Amele</a>`	88	_Mo*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_6.-Kaqchikel.pdf">2016_R1_6 Kaqchikel</a>`	89	_*Se*Sy_	Match-up	Sentences	N/A	Michael Yoshitaka Erlewine

Level	Link	No. Title	Pattern	Answer Type	Format	Extra	Author
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_7.-Estonian.pdf">2016_R1_7 Estonian</a>`	90 'The Conjugator'	_*Mo*Se*Sy_	Answer	Words	N/A	Praveen Venkataramana
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_8.-Somali.pdf">2016_R1_8 Somali</a>`	91 'The Hay Day'	_*Pho*Se_	Answer	Words	N/A	Harold Somers
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_9.-Nhanda.pdf">2016_R1_9 Nhanda</a>`	92 'The Bread Thief'	_*Mo*Se*Sy_	Mixed (Answer and Multiple-Choice)	Sentences	N/A	Babette Verhoeven
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_10.-Nung.pdf">2016_R1_x10 Nung</a>`	93	_*Mo*Se*Sy_	Answer	Sentences	N/A	Alex Wade
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_R2.1-Malay.pdf">2016_R2_1 Malay</a>`	94 'The Negator'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Bozhidar Bozhanov
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_R2.2-Tocharian.pdf">2016_R2_2 Tocharian</a>`	95	_*Mo*Pho*Se_	Answer	Words	Ancient (500AD)	Ollie Sayeed
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_R2.3-Huli.pdf">2016_R2_3 Huli</a>`	96	_*Mo*Se*Sy_	Answer	Sentences	Numbers	Bill Huang
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_R2.4-Devanagari.pdf">2016_R2_4 Devanagari</a>`	97	_*Se_	Match-up	Writing	N/A	Lauren Gawne
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2016_R2.5-Edumacated.pdf">2016_R2_5 Edumacated</a>`	98 'The Disagreement'	_*Pho*Se_	Answer	Words	N/A	Patrick Littell
Breakthrough_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_1-Karelian.pdf">2015_R1_1 Karelian</a>`	69	_*Mo*Se*Sy_	Answer	Words	Numbers	Graeme Trousdale
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.-Georgian.pdf">2015_R1_2 Georgian</a>`	70	_*Se_	Answer	Writing	N/A	Daniel Rucki
Breakthrough/Foundation	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_3.-Polish.pdf">2015_R1_3 Polish</a>`	71	_*Se*Sy_	Match-up	Sentences	N/A	Daniel Rucki
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_4.-Old-English.pdf">2015_R1_4 Old English</a>`	72 'The Love Polygon'	_*Mo*Se*Sy_	Answer	Sentences	Ancient (750AD)	Graeme Trousdale
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_5.-Runes.pdf">2015_R1_5 Runes</a>`	73	_*Se_	Answer	Writing	Ancient (700BC)	Catherine Sheard
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_6-Japanese.pdf">2015_R1_6 Japanese</a>`	74 'The Countryside'	_*Se_	Match-up	Words	N/A	Harold Somers

Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_7-Murrinhpatha.pdf">2015_R1_7 Murrinhpatha</a>`	75	_*Mo*Se_	Answer	Words	N/A	Rachel Nordlinger
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_8-Finnish.pdf">2015_R1_8 Finnish</a>`	76	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Babette Verhoeven
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_9-English.pdf">2015_R1_9 English</a>`	77 'The Particular'	_*Pr*Se*Sy_	Multiple-Choice	Sentences	N/A	Dragomir Radev with Christiane Fellbaum and Jonathan May
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_10-Georgian.pdf">2015_R1_x10 Georgian</a>`	78	_*Mo*Se*Sy_	Answer	Writing	N/A	Dorottya Demszky
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.1-Maxakali.pdf">2015_R2_1 Maxakali</a>`	79	_*Mo*Se_	Match-up	Words	N/A	Alex Wade
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.2-Malagasy.pdf">2015_R2_2 Malagasy</a>`	80 'The Crossnumber'	_*Mo*Se*Sy_	Answer	Sentences	Numbers	Tom McCoy
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.3-Hmong.pdf">2015_R2_3 Hmong</a>`	81	_*Mo*Pho*Se*Sy_	Match-up	Sentences	N/A	David Mortensen
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.4-Aymara.pdf">2015_R2_4 Aymara</a>`	82	_*Pho_	Answer	Words	Phonotactics	Josh Falk
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/05/2015_2.5-Romance.pdf">2015_R2_5 Romance</a>`	83	_*Pho*Se_	Answer	Words	N/A	David Palfreyman
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.1-Estonian.pdf">2014_R1_1 Estonian</a>`	55 'The Punctual'	_*Se*Sy_	Answer	Words	N/A	Babette Verhoeven
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.2-Maori.pdf">2014_R1_2 Maori</a>`	56	_*Phe*Pho*Se_	Mixed (Answer and Match-Up)	Words	N/A	Pat Littell
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.3-Mokilese.pdf">2014_R1_3 Mokilese</a>`	57	_*Mo*Se_	Answer	Words	N/A	Jeff Siegel
Foundation/Intermediate	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.4-IPA.pdf">2014_R1_4 English</a>`	58	_*Phe*Pho_	Answer (exo)	Words	N/A	Sue Barry & Dick Hudson
Foundation/Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.5-Turkish.pdf">2014_R1_5 Turkish</a>`	59	_*Mo*Se*Sy_	Answer	Sentences	N/A	David Palfreyman
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/08/2014.6-Kairak.pdf">2014_R1_6 Kairak</a>`	60	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Cindy Schneider
Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/`	61	_*Mo*Se*Sy_	Answer	Sentences	N/A	Bozhidar Bozhanov

	08/2014.7-Ilokano.pdf">2014_R1_7 Ilokano						
Advanced_	2014_R1_8 English	62 'The Musical Message'	_*Se_	Answer	Writing	Encrypted	Harold Somers
Advanced_	2014_R1_9 Buginese	63	_*Se_	Answer	Writing	N/A	Chelsea Voss
Round 2	2014_R2_1 Kiswahili	64	_*Mo*Se_	Match-up	Words & Sentences	N/A	Catherine Sheard
Round 2	2014_R2_2 Kachai,Tusom,Ukhrul	65	_*Pho*Se_	Match-up	Words	N/A	David Mortensen
Round 2	2014_R2_3 Yidiny	66 'The Violent'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Mary Laughren
Round 2	2014_R2_4 Navajo	67 'The Offense'	_*Mo*Pho*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Round 2	2014_R2_5 Hungarian	68 'The Unsociable'	_*Se_	Answer	Words	Maps: Grid	Adam Hesterberg
Foundation_	2013_R1_1 Yodaspeak	40 'The Adorable'	_*Sy_	Answer	Sentences	N/A	Harold Somers
Foundation_	2013_R1_2 Zapotec	41	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Unknown
Foundation/Intermediate	2013_R1_3 Pali	42 'The Minister's World'	_*Mo*Se*Sy_	Answer	Sentences	N/A	Babette Verhoeven
Foundation/Intermediate	2013_R1_4a Arabic	43 'The Conglomerate'	_*Se_	Answer	Writing	N/A	David Palfreyman
Foundation/Intermediate	2013_R1_4s Shavian	44	_*Se_	Answer	Writing	N/A	Babette Verhoeven
Foundation/Intermediate/Advanced	2013_R1_5 Bulgarian	45	_*Pho*Se*Sy_	Answer	Words	N/A	Bozhidar Bozhanov
Intermediate/Advanced	2013_R1_6 English	46	_*Sy_	Multiple-Choice	Sentences	N/A	Dick Hudson
Intermediate/Advanced	2013	47	_*Pho*Se_	Answer	Writing	N/A	Harold Somers

	_R1_7 Phoenician						
Advanced_	2013_R1_8 Dutch	48	_*Mo*Pho*Se_	Answer	Words	N/A	Harold Somers
Advanced_	2013_R1_9 Bengali	49	_*Mo*Se*Sy_	Answer	Sentences	N/A	Bozhidar Bozhanov
Round 2	2013_R2_1 Quechua	50 'The Deer'	_*Mo*Se*Sy_	Match-up	Words & Sentences	N/A	Patrick Littell
Round 2	2013_R2_2 Georgian, Armenian	51 'The Librarian'	_*Se_	Match-up	Writing	N/A	Drago Radev
Round 2	2013_R2_3 Beja	52	_*Mo*Se*Sy_	Answer	Sentences	N/A	Dick Hudson
Round 2	2013_R2_4 Swedish	53	_*Se_	Multiple-Choice	Words	Maps	Patrick Littell
Round 2	2013_R2_5 Indonesian, Swahili	54 'The Cognate Game'	_*Mo*Se*Sy_	Match-up	Sentences	N/A	Catherine Sheard
Foundation_	2012_R1_1 Yolmo	25	_*Se*Sy_	Answer	Words & Sentences	N/A	Lauren Gawne
Foundation_	2012_R1_2 Danish	26	_*Mo*Se_	Answer	Words	Numbers	Mike Swan
Foundation/Intermediate	2012_R1_3d Dutch	27	_*Mo*Pho*Se_	Answer	Words	N/A	Babette Verhoeven
Foundation/Intermediate	2012_R1_3w Welsh	28 'The Library'	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Dick Hudson
Foundation/Intermediate	2012_R1_4 Haitian	29	_*Pho*Se*Sy_	Answer	Sentences	N/A	Ivaylo Youmerski
Foundation/Intermediate/Advanced	2012_R1_5 Esperanto	30	_*Mo*Se*Sy_	Answer	Sentences	N/A	Alexey Pegushev
Intermediate/Advanced	2012_R1_6 Bardi	31 'The Drawing'	_*Mo*Se*Sy_	Match-up	Words & Sentences	N/A	Catherine Sheard

Intermediate/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012.7-Waorani.pdf">2012_R1_7 Waorani</a>`	32	_*Se*Sy_	Answer	Sentences	Numbers	Drago Radev
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012.8-Arcturan.pdf">2012_R1_8 Arcturan</a>`	33 'The Alien Message'	_*Se*Sy_	Answer	Sentences	N/A	Simon Zwarts
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012.9-Waanyi.pdf">2012_R1_9 Waanyi</a>`	34	_*Mo*Se*Sy_	Answer	Sentences	N/A	Mary Laughren
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012r2.1-English.pdf">2012_R2_1 English</a>`	35 'The Biologist'	_*Mo*Se_	Answer	Words	N/A	Patrick Littell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012r2.2-Luiseno.pdf">2012_R2_2 Luiseno</a>`	36	_*Mo*Phe*Sy_	Answer	Sentences	N/A	Ronald Langacker (via Dick Hudson)
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012r2.3-English.pdf">2012_R2_3 English</a>`	37	_*Pr*Se_	Multiple-Choice	Words & Sentences	N/A	James Pustejovsky, Patrick Littell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012r2.4-Phags-pa.pdf">2012_R2_4 Phags-pa</a>`	38 'The Hundred Surnames'	_*Mo*Se_	Answer	Writing	N/A	Patrick Littell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2012r2.5-Catalan.pdf">2012_R2_5 Catalan</a>`	39	_*Mo*Pho*Se*Sy_	Answer	Words	N/A	Boris Iomdin
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.1-English.pdf">2011_R1_1 English</a>`	13	_*Pr*Se_	Answer (exo)	Words	N/A	Harold Somers
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.2-Japanese.pdf">2011_R1_2 Japanese</a>`	14	_*Se_	Answer	Writing	N/A	Harold Somers
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.3-Arrernte.pdf">2011_R1_3 Arrernte</a>`	15	_*Mo*Se_	Answer	Words	N/A	Mark Dras & Mary Laughren
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.4-Ulwa.pdf">2011_R1_4 Ulwa</a>`	16	_*Mo*Se_	Answer	Words	N/A	Richard Sproat
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.5-Papago.pdf">2011_R1_5 Papago</a>`	17	_*Mo*Se*Sy_	Match-up	Sentences	N/A	Lori Levin (data from Ken Hale)
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.6-Indonesian.pdf">2011_R1_6 Indonesian</a>`	18 'The Tiger'	_*Se_	Mixed (Answer and Multiple-Choice)	Words	N/A	Dragomir Radev
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011.7-English-Braille.pdf">2011_R1_7 English Braille</a>`	19 'The War of the Dots'	_*Se_	Answer	Writing	Stories	Patrick Littell

Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011r2.1-Warlpiri.pdf">2011_R2_1 Warlpiri</a>`	20	_*Pho*Se_	Answer	Words	N/A	Mary Laughren
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011r2.2-Irish.pdf">2011_R2_2 Irish</a>`	21	_*Se*Sy_	Answer	Sentences	Numbers	Tom Payne
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011r2.3-Nahuatl.pdf">2011_R2_3 Nahuatl</a>`	22	_*Mo*Se*Sy_	Answer	Sentences	N/A	Patrick Littell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011r2.4-Ndyuka.pdf">2011_R2_4 Ndyuka</a>`	23	_*Se_	Answer	Writing	N/A	John Berman
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2011r2.5-Tadaksahak.pdf">2011_R2_5 Tadaksahak</a>`	24	_*Mo*Se*Sy_	Answer	Sentences	N/A	Bozhidar Bozhanov
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.1-French.pdf">2010_R1_1 French</a>`	1 'The Beginning'	_*Se*Sy_	Answer	Sentences	N/A	Dragomir Radev
Foundation_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.2-English.pdf">2010_R1_2 English</a>`	2 ' The House of Gelbelgarg'	_*Pr*Se_	Mixed(Answer (exo), Multiple-Choice)	Words & Sentences	Stories	Cindy Schneider
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.3-Abma.pdf">2010_R1_3 Abma</a>`	3	_*Se*Sy_	Answer	Sentences	N/A	Luda Kedova & Rachel Nordlinger
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.4-Armenian.pdf">2010_R1_4 Armenian</a>`	4 'The Lost Tourist'	_*Se_	Answer	Writing	Maps	Dragomir Radev
Foundation/Advanced	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.5-Turkish.pdf">2010_R1_5 Turkish</a>`	5	_*Mo*Pho*Se_	Answer	Words	N/A	Bozhidar Bozhanov
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.6-Tangkhul.pdf">2010_R1_6 Tangkhul</a>`	6	_*Mo*Se*Sy_	Mixed (Answer and Match-up)	Sentences	N/A	David Mortensen
Advanced_	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010.7-English.pdf">2010_R1_7 English</a>`	7 'The Number Scramble'	_*Mo*Se_	Answer	Writing	Stories, Encrypted	Patrick Littell
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010r2.1-Minangkabau.pdf">2010_R2_1 Minangkabau</a>`	8	_*Pho*Se_	Answer	Words	N/A	John Henderson
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010r2.2-Cree.pdf">2010_R2_2 Cree</a>`	9	_*Mo*Se_	Match-Up	Writing	N/A	Patrick Littell & Julia Workman
Round 2	`<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010r2.3-English.pdf">2010_R2_3 English</a>`	10	_*Se_	Mixed (Answer and Match-Up)	Writing	Stories	Richard Sproat

| Round 2 | `<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010r2.4-Vietnamese.pdf">2010_R2_4 Vietnamese</a>` | 11 'The Tale of Kieu' | _*Se_ | Match-up | Sentences | N/A | David Mortensen |
| Round 2 | `<a href="https://www.uklo.org/wp-content/uploads/2022/09/2010r2.5-Vanuatu.pdf">2010_R2_5 Vanuatu</a>` | 12 'The Island' | _*Mo*Se*Sy_ | Answer | Words | N/A | Jane Simpson & Jeremy Hammond |