S2 Appendix. Pokémon key example

```
{
 "$schema": "https://raw.githubusercontent.com/Artsdatabanken/Clavis/
60090011e4efed657f41cced3366b2b57d6cff3b/Clavis.json",
 "title": "A key to a selection of Pokémon",
 "language": "en",
 "license": "https://creativecommons.org/licenses/by/4.0/",
 "creator": "person:wouterkoch",
 "lastModified": "2022-03-19 21:35:25",
 "identifier": "26b57071-15ca-4b44-92a4-b61181f15373",
  "persons": [
      "id": "person:wouterkoch",
      "name": "Wouter Koch"
    }
 ],
 "organizations": [
     "id": "organization:ntnu",
     "name": "Norwegian University of Science and Technology",
      "url": "https://www.ntnu.no"
   }
 ],
 "taxa": [
    {
     "id": "taxon:pikachuidae",
      "scientificName": "Pikachuidae",
      "children": [
          "id": "taxon:pokemon_172",
          "scientificName": "Pichu",
          "children": [
              "id": "taxon:pokemon_172_standard",
              "label": ""
            },
              "id": "taxon:pokemon_172_shiny",
              "label": "Shiny"
          ]
        },
          "id": "taxon:pokemon_025",
          "scientificName": "Pikachu",
          "externalResource": [
            {
```

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```
"serviceId": "service:wikidata",
        "externalId": "Q9351"
      },
        "serviceId": "service:example_api",
        "externalId": "Pikachu"
    ],
    "followup": "https://example.com/pikachu_costumes",
    "children": [
      {
        "id": "taxon:pokemon_025_standard",
        "isEndPoint": true,
        "label": "",
        "children": [
            "id": "taxon:pokemon_025_standard_male",
            "label": "ơ"
          },
            "id": "taxon:pokemon_025_standard_female",
            "label": "Q"
          }
        ]
      },
        "id": "taxon:pokemon_025_shiny",
        "label": "Shiny"
      }
    ٦
 },
    "id": "taxon:pokemon_026",
    "scientificName": "Raichu",
    "children": [
        "id": "taxon:pokemon_026_standard",
        "label": ""
      },
        "id": "taxon:pokemon_026_shiny",
        "label": "Shiny"
    ]
  }
]
"id": "taxon:pokemon_115",
"scientificName": "Kangaskhan",
"geoDistribution": [
  Γ
```

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},

```
Γ
                                                                                        100
              130.0341796875,
                                                                                        101
              -10.228437266155943
                                                                                        102
           ],
                                                                                        103
            104
              111.97265625,
                                                                                        105
              -21.779905342529634
            ],
                                                                                        107
            [
                                                                                        108
              115.09277343749999,
                                                                                        109
              -36.91476428895593
                                                                                        110
           ],
                                                                                        111
            Γ
                                                                                        112
              131.2646484375,
                                                                                        113
              -32.916485347314385
                                                                                        114
           ],
                                                                                        115
            Γ
                                                                                        116
              141.8994140625,
                                                                                        117
              -40.44694705960048
                                                                                        118
           ],
                                                                                        119
            120
              150.82031249999997,
              -38.8225909761771
                                                                                        122
            ],
                                                                                        123
                                                                                        124
              154.95117187499997,
                                                                                        125
              -26.15543796871355
                                                                                        126
           ],
                                                                                        128
              142.3388671875,
              -10.09867012060338
                                                                                        130
            ],
                                                                                        131
            Γ
                                                                                        132
              138.69140625,
                                                                                        133
              -12.382928338487396
                                                                                        134
           ],
                                                                                        135
            130.0341796875,
                                                                                        137
              -10.228437266155943
                                                                                        138
                                                                                        139
         ]
       ]
                                                                                        141
    ]
                                                                                        142
  },
                                                                                        143
    "id": "taxon:castform",
                                                                                        145
    "scientificName": "Castform"
  }
                                                                                        147
],
                                                                                        148
"characters": [
                                                                                        149
  {
                                                                                        150
```

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```
"id": "character:type_of_pokemon",
  "title": "Pokémon type",
  "states": [
      "id": "state:pokemon_type_electric",
      "title": "Electric"
  ]
},
  "id": "character:color",
  "title": "Color of body",
  "states": [
      "id": "state:color_blue",
      "title": "Blue"
    },
      "id": "state:color_red",
      "title": "Red"
    }
  ]
},
  "id": "character:all_colors",
  "title": "Colors on body of the Pokémon",
  "type": "non-exclusive",
  "states": [
      "id": "state:colors_yellow",
      "title": "Yellow"
    },
    {
      "id": "state:colors_red",
      "title": "Red"
    },
      "id": "state:colors_black",
      "title": "Black"
    },
      "id": "state:colors_brown",
      "title": "Brown"
    },
      "id": "state:colors_white",
      "title": "White"
  ]
},
{
  "id": "character:tail_shape",
```

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```
"title": "Shape of the tail end",
                                                                                 203
  "states": [
                                                                                 204
    {
                                                                                 205
       "id": "state:pointy_tail",
                                                                                 206
       "title": "Pointy",
                                                                                 207
       "media": "media:pointy_tail"
                                                                                 208
    },
                                                                                 209
       "id": "state:lobed_tail",
                                                                                 211
      "title": "Double-lobed",
                                                                                 212
       "media": "media:lobed_tail"
                                                                                 213
    }
  ]
                                                                                 215
},
                                                                                 216
                                                                                 217
  "id": "character:wearing_hat",
                                                                                 218
  "title": "Is the Pokémon wearing a hat?",
                                                                                 219
  "states": [
                                                                                 220
    {
                                                                                 221
       "id": "state:hat",
                                                                                 222
       "title": "Yes"
                                                                                 223
    },
                                                                                 224
       "id": "state:no_hat",
                                                                                 226
       "title": "No"
    }
                                                                                 228
  ]
},
                                                                                 230
  "id": "character:hat_shape",
                                                                                 232
  "title": "What is the style of the hat?",
  "logicalPremise": "state:hat",
                                                                                 234
  "states": [
                                                                                 235
                                                                                 236
       "id": "state:bowler_hat",
                                                                                 237
       "title": "Bowler hat"
                                                                                 238
    },
                                                                                 239
    {
                                                                                 240
       "id": "state:top_hat",
                                                                                 241
       "title": "Top hat"
                                                                                 242
    }
                                                                                 243
  ]
},
                                                                                 245
                                                                                 246
  "id": "character:weight",
                                                                                 247
  "title": "How much does the Pokémon weigh?",
  "userRequirement": "requirement:catch",
                                                                                 249
  "type": "numerical",
  "states": {
                                                                                 251
    "id": "state:weight",
    "min": 1,
                                                                                 253
    "max": 125,
```

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```
"stepSize": 1,
                                                                                 255
      "unit": "kg"
                                                                                 256
    }
                                                                                 257
  }
                                                                                 258
],
                                                                                 259
"statements": [
                                                                                 260
  {
                                                                                 261
    "id": "statement:pikachu_is_electric",
    "taxonId": "taxon:pokemon_025",
                                                                                 263
    "characterId": "type_of_pokemon",
                                                                                 264
    "value": "state:pokemon_type_electric",
                                                                                 265
    "frequency": 1
  },
                                                                                 267
  {
    "id": "statement:pikachu_is_never_blue",
                                                                                 269
    "taxonId": "taxon:pokemon_025",
                                                                                 270
    "characterId": "character:color",
                                                                                 271
    "value": "state:color_blue",
                                                                                 272
    "frequency": 0
                                                                                 273
  },
                                                                                 274
  {
                                                                                 275
    "id": "statement:pikachu_lobed_tail",
                                                                                 276
    "taxonId": "taxon:pokemon_025",
    "characterId": "character:tail_shape",
                                                                                 278
    "value": "state:lobed_tail",
    "frequency": 0.5
                                                                                 280
  },
                                                                                 281
                                                                                 282
    "id": "statement:pikachu_pointy_tail",
    "taxonId": "taxon:pokemon_025",
                                                                                 284
    "characterId": "character:tail_shape",
    "value": "state:pointy_tail",
                                                                                 286
    "frequency": 0.5
                                                                                 287
  },
                                                                                 288
  {
                                                                                 289
    "id": "statement:pikachu_weight",
                                                                                 290
    "taxonId": "taxon:pokemon_025",
                                                                                 291
    "characterId": "character:weight",
    "value": [
                                                                                 293
      2.98,
      10.1
                                                                                 295
    ],
    "frequency": 1
                                                                                 297
  },
  {
                                                                                 299
    "id": "statement:castform_rain_type",
    "taxonId": "taxon:castform",
                                                                                 301
    "characterId": "character:castform_type",
    "value": "state:rainy_castform",
                                                                                 303
    "frequency": 0.2
  },
                                                                                 305
  {
                                                                                 306
```

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```
"id": "statement:castform_rain_type_bergen",
                                                                                307
  "taxonId": "taxon:castform",
                                                                                308
  "characterId": "character:castform_type",
                                                                                309
  "value": "state:rainy_castform",
                                                                                310
  "frequency": 0.9,
                                                                                311
  "geoDistribution": [
                                                                                312
    313
       315
           5.27618408203125,
                                                                                316
           60.44976847885747
                                                                                317
         ],
                                                                                319
           5.218505859375,
           60.4233434866285
                                                                                321
         ],
                                                                                322
         Γ
                                                                                323
           5.27618408203125,
                                                                                324
           60.36160157353732
                                                                                325
         ],
                                                                                326
                                                                                327
           5.395660400390625,
                                                                                328
           60.36839212633114
         ],
                                                                                330
         Γ
           5.4052734375,
                                                                                332
           60.421309904895715
                                                                                333
         ],
                                                                                334
         5.27618408203125.
                                                                                336
           60.44976847885747
                                                                                338
      ]
                                                                                339
    ]
                                                                                340
  ]
                                                                                341
},
                                                                                342
{
                                                                                343
  "id": "statement:pikachu_contains_yellow",
  "taxonId": "taxon:pokemon_025",
                                                                                345
  "characterId": "character:all_colors",
                                                                                346
  "value": "state:colors_yellow",
                                                                                347
  "frequency": 1
},
                                                                                349
{
                                                                                350
  "id": "statement:pikachu_contains_black",
                                                                                351
  "taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
                                                                                353
  "value": "state:colors_black",
  "frequency": 1
                                                                                355
},
{
                                                                                357
  "id": "statement:pikachu_contains_red",
                                                                                358
```

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```
"taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
  "value": "state:colors_red",
  "frequency": 1
},
  "id": "statement:pikachu_contains_no_brown",
  "taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
  "value": "state:colors_brown",
  "frequency": 0
},
  "id": "statement:pikachu_contains_no_white",
  "taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
  "value": "state:colors_white",
  "frequency": 0
},
  "id": "statement:raichu_contains_yellow",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_vellow",
  "frequency": 1
},
  "id": "statement:raichu_contains_no_black",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_black",
  "frequency": 0
},
  "id": "statement:raichu_contains_no_red",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_red",
  "frequency": 0
},
  "id": "statement:raichu_contain_brown",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_brown",
  "frequency": 1
},
  "id": "statement:raichu_contains_white",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_white",
```

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```
"frequency": 1
                                                                                 411
    }
                                                                                 412
  ],
                                                                                 413
  "userRequirements": [
                                                                                 414
                                                                                 415
      "id": "requirement:catch",
                                                                                 416
      "title": "Catching required",
                                                                                 417
      "warning": "To answer this, you have to catch the Pokémon
first.",
                                                                                 419
      "description": "1. Select a pokéball color.\n2. Hold the ball,
spinning it a few times. \n3. Fling the pokéball towards the Pokémon,
                                                                                 421
adjusting for the curveball generated from spinning the ball.\n4. Try
to hit the circle when it is at its smallest.",
                                                                                 423
      "descriptionUrl": "https://niantic.helpshift.com/hc/en/
6-pokemon-go/faq/102-finding-catching-wild-pokemon/"
  ],
                                                                                 427
  "externalServices": [
                                                                                 428
    {
      "id": "service:wikidata",
                                                                                 430
      "title": "Wikidata",
                                                                                 431
      "url": "https://www.wikidata.org/w/api.php"
                                                                                 432
    },
    {
                                                                                 434
      "id": "service:example_api",
      "title": "Example",
      "description": "Gives the probability for a taxon, given its
weight and location.",
                                                                                 438
      "url": "https://api.example.com"
    }
                                                                                 440
  ],
  "mediaElements": [
                                                                                 442
    {
                                                                                 443
      "id": "media:pointy_tail",
      "mediaElement": {
                                                                                 445
        "file": [
                                                                                 446
                                                                                 447
             "url": "https://github.com/WouterKoch/Clavis/raw/main/Keys/
Images/pointy_100.png",
                                                                                 449
             "width": 100,
                                                                                 450
             "height": 100,
                                                                                 451
             "license": "https://creativecommons.org/licenses/by/4.0/",
             "creator": "person:wouterkoch"
                                                                                 453
          },
                                                                                 454
                                                                                 455
             "url": "https://github.com/WouterKoch/Clavis/raw/main/Keys/
Images/pointy_250.png",
                                                                                 457
             "width": 250,
             "height": 250,
                                                                                 459
             "license": "https://creativecommons.org/licenses/by/4.0/",
                                                                                 460
             "creator": "person:wouterkoch"
                                                                                 461
          }
                                                                                 462
```

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```
]
                                                                                   463
       }
                                                                                   464
    },
                                                                                   465
       "id": "media:lobed_tail",
                                                                                   467
       "mediaElement": {
                                                                                   468
         "file": [
                                                                                   469
             "url": "https://github.com/WouterKoch/Clavis/raw/main/Keys/
                                                                                   471
Images/lobed_100.png",
                                                                                   472
             "width": 100,
                                                                                   473
             "height": 100,
             "license": "https://creativecommons.org/licenses/by/4.0/",
                                                                                   475
             "creator": "person:wouterkoch"
                                                                                   476
           },
                                                                                   477
                                                                                   478
             "url": "https://github.com/WouterKoch/Clavis/raw/main/Keys/
                                                                                   479
Images/lobed_250.png",
                                                                                   480
             "width": 250,
             "height": 250,
                                                                                   482
             "license": "https://creativecommons.org/licenses/by/4.0/",
                                                                                   483
             "creator": "person:wouterkoch"
                                                                                   484
           }
         ]
                                                                                   486
      }
    }
  ]
}
                                                                                   490
```

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