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# An Ontological Approach to Creating an Andean Weaving Knowledge Base (Supplementary Material – Electronic Appendix D)

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## D. RESEARCHERS' QUESTIONS AND PHP/SPARQL QUERIES

—Query 1: In what find regions does technique \$T appear?

```
SELECT DISTINCT ?loc_label
  WHERE {
    ?techn rdfs:label \"\" . $technique . \"\">@\" . $lang . \"\" .
    {
      ?subclass rdfs:subClassOf+ ?techn .
      ?techn2 rdf:type ?subclass .
      ?obj :has_representative_technique ?techn2
    }
    UNION
    {
      ?obj :has_representative_technique ?techn .
    }
  }
```

---

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```

?obj :found_in ?loc .
?loc rdf:type :Location_17 .
?loc rdfs:label ?loc_label .
FILTER (lang(?loc_label) = '$lang . "')
} ORDER BY ?loc_label

```

—Q2: In what find regions does structure \$S appear?

```

SELECT DISTINCT ?loc_label
WHERE {
  ?struct rdfs:label \"$\" . $structure . \"\@\" . $lang . \" .
  {
    ?subclass rdfs:subClassOf+ ?struct .
    ?struct2 rdf:type ?subclass .
    ?obj :has_representative_structure ?struct2
  }
  UNION
  {
    ?obj :has_representative_structure ?struct
  }
  ?obj :found_in ?loc .
  ?loc rdf:type :Location_17 .
  ?loc rdfs:label ?loc_label .
  FILTER (lang(?loc_label) = '$lang . "')
} ORDER BY ?loc_label

```

—Q3: In what find sites is technique \$T found?

```

SELECT DISTINCT ?loc_label
WHERE {
  ?techn rdfs:label \"$\" . $technique . \"\@\" . $lang . \" .
  {
    ?subclass rdfs:subClassOf+ ?techn .
    ?techn2 rdf:type ?subclass .
    ?obj :has_representative_technique ?techn2
  }
  UNION
  {
    ?obj :has_representative_technique ?techn .
  }
  ?obj :found_in ?loc .
  ?loc rdfs:label ?loc_label .
  FILTER (lang(?loc_label) = '$lang . "')
} ORDER BY ?loc_label

```

—Q4: In what find sites is structure \$S found?

```

SELECT DISTINCT ?loc_label
WHERE {
  ?struct rdfs:label \"$\" . $structure . \"\@\" . $lang . \" .

```

```

{
    ?subclass rdfs:subClassOf+ ?struct .
    ?struct2 rdf:type ?subclass .
    ?obj :has_representative_structure ?struct2
}
UNION
{
    ?obj :has_representative_structure ?struct
}
?obj :found_in ?loc.
?loc rdfs:label ?loc_label.
FILTER (lang(?loc_label) = '$lang . "')
} ORDER BY ?loc_label

```

—Q5: What repositories hold textile objects with technique \$T?

```

SELECT DISTINCT ?mus_label
WHERE {
    ?techn rdfs:label \"$\" . $technique . \"$@\" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
    }
    ?obj :curated_by ?mus.
    ?mus rdfs:label ?mus_label.
    FILTER (lang(?mus_label) = '$lang . "')
} ORDER BY ?mus_label

```

—Q6: What repositories hold textile objects with structure \$S?

```

SELECT DISTINCT ?mus_label
WHERE {
    ?struct rdfs:label \"$\" . $structure . \"$@\" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
    ?obj :curated_by ?mus.
    ?mus rdfs:label ?mus_label.

```

```

        FILTER (lang(?mus_label) = '$lang . "')
    } ORDER BY ?mus_label

```

—Q7: What textile objects present technique \$T?

```

SELECT DISTINCT ?obj
WHERE {
    ?techn rdfs:label \"$" . $technique . "\"@" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
    }
} ORDER BY ?obj

```

—Q8: What textile objects present structure \$S?

```

SELECT DISTINCT ?obj
WHERE {
    ?struct rdfs:label \"$" . $structure . "\"@" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
} ORDER BY ?obj

```

—Q9: What images are there of textile object \$X?

```

SELECT DISTINCT ?img
WHERE {
    ?product . " :has_visual_documentation ?doc .
    ?doc :visualized_by ?img .
} ORDER BY ?img

```

—Q10: What motifs appear in textile object \$X?

```

SELECT DISTINCT ?mot_label
WHERE {
    ?product . " :has_part ?classIDmo .
    ?classIDmo rdf:type ?classMo .
    ?classIDmo :is_organized_as ?a .
    ?classMo rdfs:label ?mot_label .
}

```

```

        FILTER (lang(?mot_label) = '?' . $lang . '')
    } ORDER BY ?mot_label

```

—Q11: What textile styles present technique \$T?

```

SELECT DISTINCT ?style_label
WHERE {
    ?techn rdfs:label "\"" . $technique . "\"@" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
    }
    ?obj :has_style ?style .
    ?style rdfs:label ?style_label .
    FILTER (lang(?style_label) = '?' . $lang . '')
}

```

—Q12: What textile styles present structure \$S?

```

SELECT DISTINCT ?style_label
WHERE {
    ?struct rdfs:label "\"" . $structure . "\"@" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
    ?obj :has_style ?style.
    ?style rdfs:label ?style_label.
    FILTER (lang(?style_label) = '?' . $lang . '')
}

```

—Q13: What cultures are associated with technique \$T?

```

SELECT DISTINCT ?cult_label
WHERE {
    ?techn rdfs:label "\"" . $technique . "\"@" . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        ?obj :has_representative_technique ?techn2
    }
}

```

```

    }
  UNION
  {
    ?obj :has_representative_technique ?techn .
  }
  ?obj :is_affiliated_to ?cult.
  ?cult rdfs:label ?cult_label.
  FILTER (lang(?cult_label) = '?' . $lang . "'')
}

```

—Q14: What cultures are associated with structure \$S?

```

SELECT DISTINCT ?cult_label
  WHERE {
    ?struct rdfs:label \"\" . $structure . "\"@" . $lang . " .
    {
      ?subclass rdfs:subClassOf+ ?struct .
      ?struct2 rdf:type ?subclass .
      ?obj :has_representative_structure ?struct2
    }
  UNION
  {
    ?obj :has_representative_structure ?struct
  }
  ?obj :is_affiliated_to ?cult.
  ?cult rdfs:label ?cult_label.
  FILTER (lang(?cult_label) = '?' . $lang . "'')
}

```

—Q15: What materials is textile \$X made of?

```

SELECT DISTINCT ?mat_label
  WHERE {
    ?" . $product . " :has_thread ?threadID .
    ?threadID :made_of ?mat.
    ?mat rdfs:label ?mat_label.
    FILTER (lang(?mat_label) = '?' . $lang . "'')
  } ORDER BY ?mat_label

```

—Q16: In what motifs does technique \$T appear?

```

SELECT DISTINCT ?mot_label
  WHERE {
    ?techn rdfs:label \"\" . $technique . "\"@" . $lang . " .
    {
      ?subclass rdfs:subClassOf+ ?techn .
      ?techn2 rdf:type ?subclass .
      ?obj :has_representative_technique ?techn2
    }
  UNION

```

```

{
    ?obj :has_representative_technique ?techn .
}
UNION
?obj :has_part ?classIDmo .
?classIDmo rdf:type ?classMo .
?classIDmo :is_organized_as ?a .
?classMo rdfs:label ?mot_label .
FILTER (lang(?mot_label) = '?' . $lang . '')
} ORDER BY ?mot_label

```

—Q17: In what motifs does structure \$S appear?

```

SELECT DISTINCT ?mot_label
WHERE {
    ?struct rdfs:label \" . $structure . \"\@\" . $lang . \"
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        ?obj :has_representative_structure ?struct2
    }
    UNION
    {
        ?obj :has_representative_structure ?struct
    }
    UNION
    ?obj :has_part ?classIDmo .
    ?classIDmo rdf:type ?classMo .
    ?classIDmo :is_organized_as ?a .
    ?classMo rdfs:label ?mot_label .
    FILTER (lang(?mot_label) = '?' . $lang . '')
} ORDER BY ?mot_label

```

—Q18: In what period does technique \$T appear?

```

SELECT DISTINCT ?per_label
WHERE {
    ?techn rdfs:label \" . $technique . \"\@\" . $lang . \" .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        ?obj :has_representative_technique ?techn2
    }
    UNION
    {
        ?obj :has_representative_technique ?techn .
    }
    ?obj :produced_during ?per .
    ?per rdfs:label ?per_label .
    FILTER (lang(?per_label) = '?' . $lang . '')
}

```



```
    } ORDER BY ?per_label
```

—Q19: In what period does structure \$S appear?

```
SELECT DISTINCT ?per_label
  WHERE {
    ?struct rdfs:label \"" . $structure . "\"@" . $lang . " .
    {
      ?subclass rdfs:subClassOf+ ?struct .
      ?struct2 rdf:type ?subclass .
      ?obj :has_representative_structure ?struct2
    }
    UNION
    {
      ?obj :has_representative_structure ?struct
    }
    ?obj :produced_during ?per .
    ?per rdfs:label ?per_label .
    FILTER (lang(?per_label) = '" . $lang . "')
  } ORDER BY ?per_label
```

—Q20: When does technique \$T appear the first time?

not supported – periods not captured in date format in RDF

—Q21: When does structure \$S appear the first time?

not supported – periods not captured in date format in RDF

—Q22: What cultures are associated with textile object \$X and technique \$T?

```
SELECT DISTINCT ?cult_label
  WHERE {
    ?techn rdfs:label \"" . $technique . "\"@" . $lang . " .
    {
      ?subclass rdfs:subClassOf+ ?techn .
      ?techn2 rdf:type ?subclass .
      ":" . $product . " :has_representative_technique ?techn2
      ":" . $product . " :is_affiliated_to ?cult .
    }
    UNION
    {
      ":" . $product . " :has_representative_technique ?techn .
      ":" . $product . " :is_affiliated_to ?cult .
    }
    ?cult rdfs:label ?cult_label .
    FILTER (lang(?cult_label) = '" . $lang . "')
  } ORDER BY ?cult_label
```

—Q23: What cultures are associated with textile object \$X and structure \$S?

```
SELECT DISTINCT ?cult_label
  WHERE {
    ?struct rdfs:label \"" . $structure . "\"@" . $lang . " .
    {
```

```

        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        : " . $product . " :has_representative_structure ?struct2
        : " . $product . " :is_affiliated_to ?cult .
    }
    UNION
    {
        : " . $product . " :has_representative_structure ?struct
        : " . $product . " :is_affiliated_to ?cult .
    }
    ?cult rdfs:label ?cult_label .
    FILTER (lang(?cult_label) = ' " . $lang . "')
} ORDER BY ?cult_label

```

—Q24: What colours are found in textile object \$X with technique \$T?

```

SELECT DISTINCT ?colourName ?rgb
WHERE {
    ?techn rdfs:label \" " . $technique . "\"@ " . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        : " . $product . " :has_representative_technique ?techn2
        : " . $product . " :has_colour_occurrence ?occ .
    }
    UNION
    {
        : " . $product . " :has_representative_technique ?techn .
        : " . $product . " :has_colour_occurrence ?occ .
    }
    ?occ :has_colour ?colour .
    ?colour :has_rgb-code ?rgb .
    ?colour rdf:type ?colClass .
    ?colClass rdfs:label ?colourName .
    FILTER (lang(?colourName) = ' " . $lang . "')
} ORDER BY ?colourName

```

—Q25: What colours are found in textile object \$X with structure \$S?

```

SELECT DISTINCT ?colourName ?rgb
WHERE {
    ?struct rdfs:label \" " . $structure . "\"@ " . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        : " . $product . " :has_representative_structure ?struct2
        : " . $product . " :has_colour_occurrence ?occ .
    }
    UNION

```

```

    {
        : " . $product . " :has_representative_structure ?struct
        : " . $product . " :has_colour_occurrence ?occ .
    }
    ?occ :has_colour ?colour .
    ?colour :has_rgb-code ?rgb .
    ?colour rdf:type ?colClass .
    ?colClass rdfs:label ?colourName .
    FILTER (lang(?colourName) = ' " . $lang . "')
} ORDER BY ?colourName

```

—Q26: How many colour layers are found in textile object \$X with technique \$T?

```

SELECT DISTINCT ?n
WHERE {
    ?techn rdfs:label \ " " . $technique . "\ " @ " . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?techn .
        ?techn2 rdf:type ?subclass .
        : " . $product . " :has_representative_technique ?techn2
        : " . $product . " :number_of_colour_layers ?n
    }
    UNION
    {
        : " . $product . " :has_representative_technique ?techn .
        : " . $product . " :number_of_colour_layers ?n
    }
}

```

—Q27: How many colour layers are found in textile object \$X with structure \$S?

```

SELECT DISTINCT ?n
WHERE {
    ?struct rdfs:label \ " " . $structure . "\ " @ " . $lang . " .
    {
        ?subclass rdfs:subClassOf+ ?struct .
        ?struct2 rdf:type ?subclass .
        : " . $product . " :has_representative_structure?struct2
        : " . $product . " :number_of_colour_layers ?n
    }
    UNION
    {
        : " . $product . " :has_representative_structure ?struct
        : " . $product . " :number_of_colour_layers ?n
    }
}

```