Argument Type Identification Procedure (ATIP) - Version 2

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Argument Type Identification Procedure (ATIP) – Version 2

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The Argument Type Identification Procedure (ATIP) is a heuristic device that helps the analyst to identify the type of any argument expressed in natural language in terms of the argument categorisation framework of the Periodic Table of Arguments (PTA). Such identification enables the analyst to formulate the underlying mechanism of the argument, thereby preparing the ground for its evaluation. In this document, the various steps of the procedure are explained and illustrated through examples. The procedure starts with a recognition of the two statements that function as the ‘conclusion’ and the ‘premise’ of the argument and results in labelling the argument with a systematic type indicator.

Step 1 – Recognize the conclusion and the premise of the argument

The theoretical framework of the PTA takes an argument to consist of two statements: a ‘conclusion’ supported by a ‘premise’ (Wagemans, 2019b, p. 60). In natural discourse, these statements may or may not be connected through argumentative indicators such as ‘because’ or ‘therefore’. To identify the type of argument, the analyst should recognise the two statements with the help of textual clues (van Eemeren, Houtlosser & Snoeck Henkemans, 2007; Stab & Gurevych, 2017) and reformulate the argument in the form ‘conclusion, because premise’.

<table>
<thead>
<tr>
<th>The argument Since the suspect left a long trace of rubber on the road, we believe that he was driving fast can be reformulated as We believe that he was driving fast, because the suspect left a long trace of rubber on the road. This is achieved by permutation of the statements and substitution of the connector ‘since’ by ‘because’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1 – original text</td>
</tr>
<tr>
<td><em>Since the suspect left a long trace of rubber on the road, we believe that he was driving fast</em></td>
</tr>
<tr>
<td>Recognition of the conclusion and the premise</td>
</tr>
<tr>
<td><em>statement</em></td>
</tr>
<tr>
<td><strong>conclusion</strong> we believe that he was driving fast</td>
</tr>
<tr>
<td><strong>premise</strong> the suspect left a long trace of rubber on the road</td>
</tr>
<tr>
<td>Example 1 – reformulated after permutation of the statements</td>
</tr>
<tr>
<td><em>We believe that he was driving fast, since the suspect left a long trace of rubber on the road</em></td>
</tr>
<tr>
<td>Example 1 – reformulated after substitution of the connector</td>
</tr>
<tr>
<td><em>We believe that he was driving fast, because the suspect left a long trace of rubber on the road</em></td>
</tr>
</tbody>
</table>

Step 2 – Reconstruct the statements as propositions

Statements may be expressed as a proposition or as an assertion, the difference being that an assertion contains an additional linguistic expression of the epistemic commitment of the arguer regarding the acceptability of the proposition (Wagemans, 2019b, pp. 62-64). Examples of such epistemic commitment markers are “I think that …”, “In my opinion, …”, “… is true”. Statements may also contain epistemic commitment directives such as “You should accept that …”. To identify the type of argument, the analyst should reconstruct the statements as propositions. This entails that all epistemic markers should be omitted and that identical entities should be referred to with identical words (preferably the most informative ones).
Step 3 – Identify the subjects and predicates

After having reconstructed the propositional content of the statements that function as the conclusion and the premise of the argument, the analyst analyses their constituents. The theoretical framework of the PTA takes a statement to consist of two basic elements: a ‘subject’, an entity about which something is said, and a ‘predicate’, that what is said about the entity (Wagemans, 2016, p. 4; 2019b, p. 60).

<table>
<thead>
<tr>
<th>Identification of the subjects and predicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject</td>
</tr>
<tr>
<td>conclusion</td>
</tr>
<tr>
<td>premise</td>
</tr>
</tbody>
</table>

Step 4 – Determine the argument form

The ‘argument form’ is an abstract representation of the specific constellation of the subjects and predicates that occur in the conclusion and the premise of the argument. Closely following logical conventions, subjects are indicated with letters a, b, etc., predicates with letters X, Y, etc. (predicates ‘⊤’ and ‘⊥’ expressing epistemic commitments ‘true’ and ‘false’), and complete propositions with letters p, q, etc. Within the theoretical framework of the PTA, four basic argument forms are distinguished, which is reflected in the visual representation of the table as divided into four quadrants (Wagemans, 2017; 2018; 2019b, pp. 64-67). Table 1 contains an overview of the four argument forms, their names, and the corresponding quadrant of the table:

<table>
<thead>
<tr>
<th>argument form</th>
<th>name</th>
<th>quadrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>a is X, because a is Y</td>
<td>first-order predicate argument</td>
<td>alpha</td>
</tr>
<tr>
<td>a is X, because b is X</td>
<td>first-order subject argument</td>
<td>beta</td>
</tr>
<tr>
<td>q is ⊤, because r is ⊤</td>
<td>second-order subject argument</td>
<td>gamma</td>
</tr>
<tr>
<td>q is ⊤, because q is Z</td>
<td>second-order predicate argument</td>
<td>delta</td>
</tr>
</tbody>
</table>

Table 1 Argument forms distinguished in the PTA

For completing this step in the procedure, the analyst is advised to use the decision tree pictured in Figure 1, which contains three heuristic questions as well as the corresponding instructions and outcomes depending on the answers to these questions.
Figure 1  Decision tree for determining the argument form
Step 5 – Determine the argument substance

Apart from by its ‘argument form’, each type of argument distinguished within the theoretical framework of the PTA is characterized by its ‘argument substance’ (Wagemans, 2016, pp. 7-8; 2019a, p. 4). This notion is defined as the specific combination of types of statements the argument instantiates. The labelling of the type of statement is done in accordance with a widely used tripartite typology of statements developed within debate theory that consists of:

- Statements of fact (F), which are defined as expressions of a state of affairs that can be empirically observed in reality. An example is ‘The suspect left a long trace of rubber on the road’.
- Statements of value (V), which are defined as expressions of an evaluative judgment about something that is based on a subjective selection and weighing of assessment criteria. In order for the analyst to distinguish them from statements of fact, it may be helpful to consider the following subtypes and examples:
  - aesthetic judgments, such as ‘The Corrections is a great novel’
  - moral or ethical judgments, such as ‘Circumcision is reprehensible’
  - legal judgments, such as ‘Unauthorized copying is not theft’
  - pragmatic judgments, such as ‘Our plan for reducing CO\textsubscript{2}-emission is feasible’
  - logical judgments, such as ‘This proposition is true’
  - hedonistic judgments, such as ‘Paragliding is fun’.
- Statements of policy (P), which are defined as expressions of an advice, incitive or imperative and usually contain a description of a particular action. An example is ‘Children should not sleep with artificial lightning’.

By labelling both the conclusion and the premise of the argument in this way, the argument substance can be determined as one of the nine possible combinations of types of statements (FF, VF, PF, FV, PV, FP, VP, PP).

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The argument *The suspect was driving fast, because the suspect left a long trace of rubber on the road* instantiates the form « *a* is *X*, because *a* is *Y* ». It is a first-order predicate argument that is situated in the Alpha Quadrant. This result is achieved by running the reformulated version of the argument through the decision tree for determining the argument form.

**Example 1 – reformulated version**

*The suspect was driving fast, because the suspect left a long trace of rubber on the road*

**Determination of the argument form**

Are the subjects of the reformulated statements the same?

**YES** → The argument has the form « *a* is *X*, because *a* is *Y* » and is situated in the Alpha Quadrant

**Example 1 – reformulated version annotated with the argument form**

*The suspect (a) was driving fast (X), because the suspect (a) left a long trace of rubber on the road (Y)*

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The argument *The suspect was driving fast, because the suspect left a long trace of rubber on the road* combines a statement of fact (F) in the conclusion with another statement of fact (F) in the premise.

**Example 1 – reformulated version**

*The suspect was driving fast, because the suspect left a long trace of rubber on the road*

**Determination of the argument substance**

<table>
<thead>
<tr>
<th>statement</th>
<th>type of statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>conclusion</td>
<td>the suspect was driving fast</td>
</tr>
<tr>
<td>premise</td>
<td>the suspect left a long trace of rubber on the road</td>
</tr>
</tbody>
</table>

**Example 1 – reformulated version annotated with the argument substance**

*The suspect was driving fast (F), because the suspect left a long trace of rubber on the road (F)*
**Step 6 – Provide the systematic name of the argument**

The systematic name of an argument is a symbolic representation of the results of Step 4 and 5 of this procedure and thus contains information regarding the argument form and the argument substance. It consists of:

- the prefix “1” or “2”, indicating a first-order or a second-order argument
- the infix “pre” or “sub”, indicating a predicate or subject argument
- the suffix “FF”, “VF”, etc., indicating the types of statements instantiated by the argument

**Example 1 – reformulated version**

The suspect was driving fast, because the suspect left a long trace of rubber on the road

**Example 1 – reformulated version annotated with complete argument type information**

The suspect (a) was driving fast (X) (F), because the suspect (a) left a long trace of rubber on the road (Y) (F) (1 pre FF)

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**References**


