# Guidelines for the annotation of argument schemes

# 1. Introduction: a crash course on argument schemes

## 1.1 What is an argument scheme?

An argument is the justification provided by the speaker/writer in support of a claim which is not self-evident. Arguments are put forward by speakers/writers in order to persuade hearers/readers to agree about the truth of a certain claim. In presence of necessary true statements, e.g. "Water boils at 100 C", we can provide explanations, but not arguments. In other words, an argument is there if the statement it supports is arguable and calls for reasons to reach hearers'/readers' acceptance.

These reasons are generally called 'premises' in Argumentation Theory. Premises are not just propositions which textually precede or follow the claim, but have to be somehow related to the claim:

1) a. *The sky is blue. We cannot make brownies* .
   b. *We run out of chocolate. We cannot make brownies.*

A reasonable speaker would hardly utter a. since the fact that the sky is blue has nothing to do with the impossibility of making brownies and, thus, does not constitute a premise in any way. On the other hand, the sentence in b. "We run out of chocolate" is a premise for the fact that "We cannot make brownies " since chocolate is a fundamental ingredient. The relation between the premise and the claim in b. is what is called an argument scheme. More precisely, argument schemes are "the principles on which [these] arguments rely in defending the standpoint [the claim] at issue by means of premises" (van Eemeren et al.  1996: 19). These principles allow us to infer a certain conclusion starting from certain premises. The presence of a premise-claim relation can be signaled, especially in persuasive essays, by consecutive/causal conjunctions or other discourse markers. However, the presence of a certain discourse marker does not tell us which is the type of argument scheme involved:

2) a. *[The animal represented in this picture is an elephant]$_{claim}$, since [it has a trunk]$_{premise}$.*
   b. *[Mark has probably already gone home]$_{claim}$, since [his car is not in the parking anynmore]$_{premise}$.*

Intuitively, the argument schemes linking premises to claims in a. and in b. are different and have to do respectively with how we define objects (a) and how we conceptualize causes and effects (b). But which mechanisms enable speakers to draw certain inferences and arrive to certain conclusions?

The next two sections (1.2 and 1.3) aim at providing you with some background knowledge on the components which form argument schemes and the taxonomy of argument schemes adopted. This theoretical introduction will increase your awareness

during the annotation process. However, you will not be asked to apply all the notions in the annotation task (section 2).
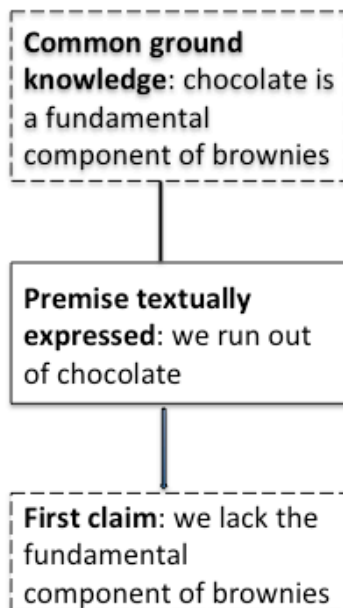
## 1.2 What are argument schemes made of?

In order to understand how to recognize different types of argument schemes, it is necessary to understand which are the components of the underlying inferences they signal. Every time an argument scheme is at work, two types of premises are called upon: procedural premises and material premises (Rigotti and Greco Morasso 2010)

Procedural premises are abstract rules of reasonings needed to bridge premises to claims: they include both i) a broad relation (after which argument schemes are named) which tells us why premises and claims belong to the same *frame* and ii) an inferential rule which further specifies the reasoning at work in drawing a claim from certain premises. Contextual information, necessary to apply a certain argument scheme to a real piece of argumentation, is provided by material premises, which include i) the premise textually expressed, and ii) some common ground knowledge about the world. As

Let's consider again example 1) b. and try to reconstruct both the material and the procedural premises of the underlying inference:

*We run out of chocolate. We cannot make brownies.*

Material components                    Procedural components

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                                  ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                                    Argument scheme: causal
                                  └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
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┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐          ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
**Common ground**                    **Inferential rule**: if the
**knowledge**: chocolate is          material components
a fundamental                        (material cause) of a product
component of brownies                is lacking, a product cannot
└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘          be made
                                     └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘

**Premise textually**                ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
**expressed**: we run out            **Minor premise**: the material
of chocolate                         component of brownies is
                                     lacking
                                     └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘

┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
**First claim**: we lack the         **Final claim**: we cannot make
fundamental                          brownies
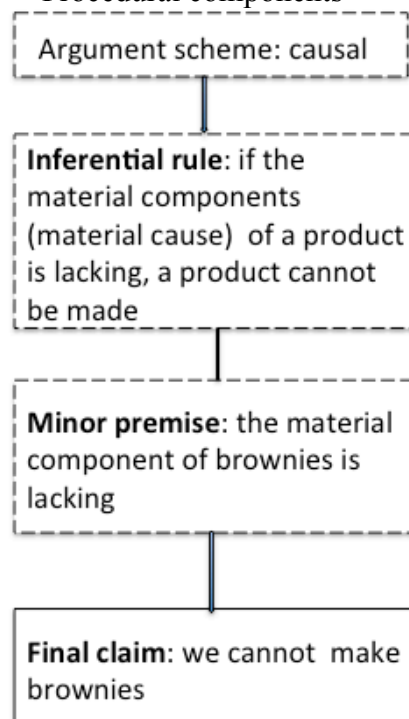component of brownies
└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘

Fig. 1 <u>Structural configuration of inferences</u> (dotted lines= premises non textually expressed )

As shown in Fig. 1, the conjunction of material premises allows to draw a first claim, through a syllogism (common ground knowledge = major premise; premise textually expressed = minor premise). This first claim is, in turn, exploited as a minor premise in the "procedural syllogism" in which the inferential rule works as a major premise. Figure 1. aims at showing how both material and procedural premises are needed to derive a claim, but it does not represent the order with which we should proceed in reconstructing argument schemes (see section 2.). In the annotation task, you will be asked to annotate the type of argument scheme at work and the inferential rule they generate.

## 1.3 How many argument schemes are there?

There are different types of argument schemes. In the taxonomy we will adopt, argument schemes are organized in hierarchical clusters (Rigotti 2009, Rocci in print):
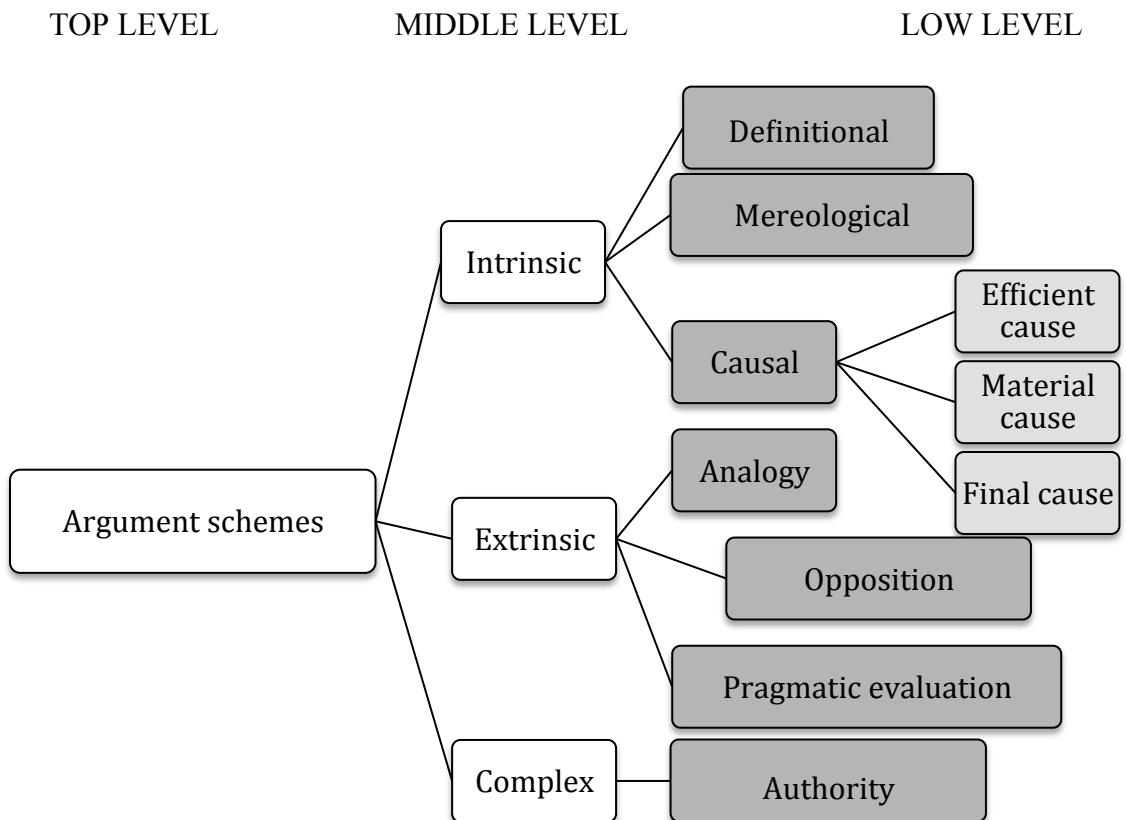
Fig. 2: <u>Taxonomy of argument schemes</u>

In what follows, every class of argument schemes (top level first, middle level and low level afterwards) is presented with the help of simplified examples. For each specific argument scheme (dark grey and light grey in Fig. 2) an exemplary inferential rule is proposed. It has to be noticed that while the number of argument schemes is fixed, the same does not apply for inferential rules which are potentially infinite. Specific guidelines on how to proceed during the annotation will be given in section 2.

# TOP LEVEL

**Intrinsic argument schemes**: presence of an ontological relation between the state of affairs expressed by the premise and the state of affairs expressed by the claim. With *ontological relations* we mean connections between the *existence* of the state of affairs expressed in the premise and that of the state of affairs expressed in the conclusion. In other words, the state of affairs expressed in the premise and that expressed in the claim can take place simultaneously in the real world and the *existence* of one affects the *existence* of the other one.

**Extrinsic argument schemes:** the state of affairs expressed by the premise and the state of affairs expressed by the claim are linked by semantic relations but they do not show any ontological relation. In other words, the *existence* of the state of affairs expressed in the premise is independent from the *existence* of the state of affairs expressed in the claim.

**Complex argument schemes**: the relation between the premise and the claim is not semantic or ontologic, but pragmatic. In other words, what guarantees the support of the claim is reference to an expert or an authority.

# MIDDLE LEVEL

Ontological relations can be of different types that further categorize the types of intrinsic, extrinsic and complex argument schemes:

<u>Middle Level for Intrinsic</u>

• INTRINSIC_DEFINITIONAL: the claim expresses a categorization (*x* is a *y*) and the premise expresses properties that allow the *categorization*:

Example of inferential rule: "If something shows the typical traits of a class of entities, then it is an instance of that class" ; "If x holds for the definition, it holds also for the defined"

e.g. <u>Whales are mammals</u>*: they have lungs.*[1]

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[1] The following convention is in use: claims are underlined, while premises are in italics.

- INTRINSIC_MEREOROGICAL: *either* i) entities in the premises constitute *parts of a whole* expressed in the claim (or *viceversa*) *or* ii) the events expressed in the premises are *exemplary cases* or a good number of cases from which a generalization or a prediction is drawn (induction).

Examples of inferential rule for i): "If all parts share a property, then the whole will inherit this property"

e.g. The corporation arising from the Fiat-Opel merger will be in trouble*: both Fiat and Opel are in trouble*.

Example of inferential rule for ii): "If something holds for an exemplary case y, then it holds for all the cases of the same type"

e.g. *In Vietnam tourism has helped to develop the economy of the country*. Therefore, tourism has a positive effect for the economy of developing countries.

- INTRINSIC_CAUSAL: the premises and the conclusions are connected by causal relations of the following types:
i) cause-effect (*Efficient Cause*)

Example of inferential rule: "If a quality characterizes the efficient cause, then such quality characterizes the effect too"

e.g. This ham is eccellent . *It is Parmacotto's*

the Parmacotto consortium has to be considered as the efficient cause since it produces the ham (which is the effect).

ii) material and artifact (*Material Cause*)

Example of inferential rule: "If a quality characterizes the material cause, then such quality characterizes the product"

e.g. This butter is genuine*: it is made of Swiss Alpine milk*

Swiss Alpine milk is the material cause of butter since it constitutes a necessary ingredient.

iv) Means and goal (*Final Cause*)

Example of inferential rule: i) "If the realization of an important goal necessitates means X, then X must be adopted [Basically, the end justifies the means]";
ii) "If an action does not allow to achieve a goal, it should not be undertaken

e.g. *We want to improve Italian economy.* Therefore*, we must import less products.*

The example instantiates rule i) since the goal is that of improving Italian economy, while the necessary means to obtain it is to import less products.

The above three types of causal argument schemes are part of the low level.

<u>Middle Level for Extrinsic</u>

The semantic relations that can be involved are:

- EXTRINSIC _OPPOSITION: the state of affairs expressed in the premise (or one of its entities) is opposite with respect to the state of affairs expressed in the claim (or one of its entities); this means that the occurrence of one of the two excludes the occurrence of the other one.

Example of inferential rule: "If two state of affairs/entities x, y are the opposite of each other, the occurrence of x excludes the occurrence of y"

e.g. <u>The suspect was in Paris on Friday 29<sup>th</sup></u>. *He was not on the scene of the crime in London that same day for sure.*

- EXTRINSIC _ANALOGY: the state of affairs expressed in the premise and that expressed in the claim encode situations which have occurred in different spatio temporal circumstances but that are similar in some respects.

e.g. *My friend Paulina moved from my home town to USA and immediately found a job.* <u>*I should also move to USA*</u>.

Example of inferential rule: "If the event x shows a set of features which are also present in event *y* and *z* holds for *x*, *z* should also hold for y"

- EXTRINSIC _ALTERNATIVES: the realization of the state of affairs expressed in the claim is valid since every other possible alternative to it, expressed in the premise, is excluded.

Example of inferential rule: "If all other alternatives to X are excluded, then X is unavoidable"

e.g.: <u>We must go to the restaurant</u> *because there is no food at home and all supermarkets are closed.*

- EXTRINSIC_PRACTICAL EVALUATION ('termination and setting up'): the state of affairs expressed **in the premise is an evaluation**, namely a judgment about something being 'good' or 'bad'. **The claim expresses a**

**recommendation/an advice** about stopping/continuing/setting up the same state of affairs expressed in the premise.

Example of inferential rules: "If something is of important value, then it should not be terminated"; "If something has a negative effect, it should be terminated"

e.g.: *For Polly and James' sons it is very important to live altogether.* Polly and James should not divorce.

The only relation between the premise and the conclusion which is not semantic or ontologic, but pragmatic is the following:

- COMPLEX_AUTHORITY: the premise is a discourse uttered by a person who is highly reliable/is an expert/is an authority in the context of discussion and the propositional content of the claim coincides with the content of that discourse.

Example of inferential rule: "If a discourse $p$ has been uttered by an expert of the field, then p is true".

e.g. As clarified by the Nobel laureate Alfred Stede*, a new species of insects will appear in less than a million years.*

Note that the authority to which the writer appeals is usually introduced by linguistic constructions such as "according to", "as shown by', "as clarified/explained/declared by".

# 2. Guiding instructions on how to annotate

In order to reconstruct argument schemes we cannot follow the same cognitive path the speaker went through, but we are forced to start from what is explicitly communicated, namely the claim and the premise which is textually expressed. Then, looking at linguistic aspects of the propositions constituting the claim and the premise, it is possible to reconstruct which argument schemes and which inferential rules are there through the help of our common knowledge:
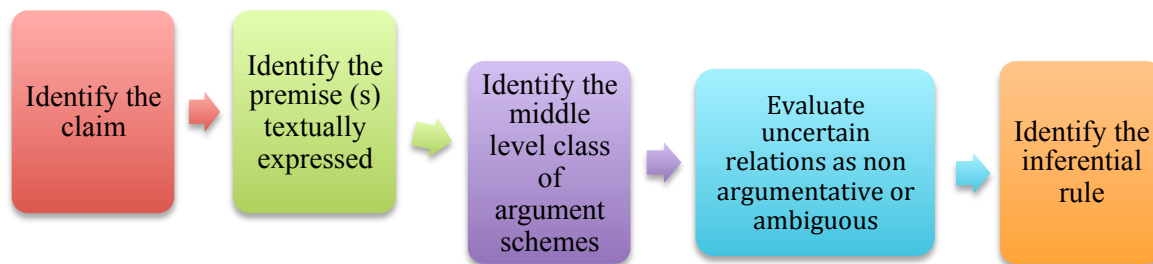


Fig.3 Overview of the stages for the annotation of argument schemes

Instructions on how to proceed at each step of the annotation, which correspond to the arrows in Fig 3. , are provided in the following sections.

## 2.1 Identify explicit components: Claims and Premises

The first step is that of identifying the claim and the textually expressed premise(s) supporting it. This task has already been accomplished by other annotators in the frame of Stab and Gurevych's study on the identification of claims and premises (2014). The annotation of argument schemes will be done on top of the existing annotation of claims and premises. Claims and premises have been annotated at the level of spans. Major claims, namely those statements which express the writer's main stance on a certain issue, have been distinguished from other claims, which are, in turn, arguments for the major claim. Both claims and major claims can have more than one premise supporting them. The relation between premises and claims has been annotated as to stance, featuring the attributes 'supports' or 'attacks'. The annotation of argument schemes concerns only those relations which have been annotated as 'supports'. These relations can link Claims-Major Claims, Premises-Claims, Premises-Major Claims. In case of restatement/paraphrase you do not need to annotate the argument scheme but you can just leave the label 'supports'. These cases generally occur in relations between Claims and Major Claims: e.g. ["I think the state should provide financial support"]Major Claim ["Therefore, statal financial support is needed"]Claim .

## 2.2 Identify the type of argument scheme (middle level) linking the premise to the claim

In order to identify which kind of intrinsic or extrinsic argument schemes are at play
   i)      browse the questions a-g) below:  the variables *x* and *y* stand for the sentences annotated as 'premise' and 'claim'
   ii)     select the question which matches the premise-claim pair if you think there is one which applies
   iii)    check if it contains features listed under the label "other clues" (as a supplementary confirmation)
   iv)     annotate the argument scheme to which the chosen question corresponds
   v)      if you think that none of the questions applies, select the label "No Argument" and try to explain under notes why argumentation is not there
   vi)     if you are uncertain whether the relation is an instance of an argumentation scheme or it is non argumentative or you think that two different schemes could fit, annotate "ambiguous". Please write under "notes" why the relation is not argumentative or the two middle level argument schemes among which you are uncertain with the correspondent top level class of argument schemes (intrinsic/extrinsic/complex).

In order to evaluate the soundness of these questions you necessarily have to rely on your common knowledge about how things are in the world or in your mind (first material premise in section 1.2).

**Questions:**

a)  **Intrinsic Definition**: does *y/x* express a categorization (e.g. *x* is a *y*) and x/y express properties that allow the categorization?

   **Other clues**: the premise and the claim usually share the grammatical subject. The verb which appears in the claim does not express an action, but a state (*to be, to consider, to seem, to appear*)

   e.g.: *[Exercise not only reduces the risk of health problems and various diseases, but it also has an effect on overall appearance]*<sub>premise</sub>. *[Excerising is/is considered/should be considered one of the most important things in life]*<sub>claim</sub>.

b)  **Intrinsic Mereorogical**: is 'the fact that *x*' or an entity cited in *x* an example/a series of examples/a part of 'the fact that y'?

   **Other clues:** the premise is frequently signaled by the constructions "for example", "as an example",  '*x* proves that'. The claims expresses a generalization, a state of affairs which cannot be located in space and time (e.g."Tourism has a positive effect for the economy of developing countries"), or a prediction.

e.g. [*Take Thailand for example, in the Vietnam War, many American soldiers came to Thailand for a break and involved in sexual and drug activities, these huge demands caused many local businesses opened and expanded, even illegally involved in under-age prostitutes to maximise their profits. This was due to the lack of adequate controls by authorities and lead to a bad image of Thailand tourism*]premise. [*Tourists from different cultures will probably cause changes to the cultural identity of the tourist destinations*]claim .

Note that in persuasive essays the major claim is frequently a positive or negative evaluation on a certain activity (e.g. "Public health care is beneficial"), while the other claims encode various aspects in which the activity is positive/negative (e.g. "giving the chance to poor people to be cured is important"). These aspects can be considered as parts of a
whole: the fact that different aspects of an activity are beneficial entails that the activity in itself is beneficial.

c) **Intrinsic Causal**: is x a cause/effect of y or is it a means to obtain y?

   **Other clues:** the premise is a proposition that constitutes a matter of fact. The claim frequently contains a modal verb or a modal construction (*must, can, it is clear/it is necessary*). Causal relations involve concrete changes in the world. Evaluations about actions play a role as common ground knowledge but **do not constitute the premise textually expressed**.

   E.g. "*[Employers are mostly looking for people who have international and language skills*]premise. *[One who has studied and lived overseas will become more eligible for the job than his/her peers*]claim.

d) **Extrinsic Analogy**: Do *x* and/or *y* compare situations happened in different circumstances but similar in some respects?

   **Other clues**: the premise and/or the claim usually contain comparative conjunctions/constructions (e.g. *as, like, in a similar vein*)

   E.g. [*Not allowing same sex couples to marry is like saying all people born with a certain hair color should not be allowed marry people of other hair colors, It makes no sense*]premise. [*The law should not dictate that same sex couples cannot marry*]claim.

e) **Extrinsic Opposition**: does the occurrence of the state of affairs expressed in the premise exclude the occurrence of the state of affairs expressed in the claim?

   **Other clues**: the claim sometimes contains modals which express impossibility (*it is impossible that, it cannot be that*), but it is not always the case.

E.g. *"[if there is control over artists' ideas, they will definitely lose their sense of creativity in the long run]*premise*. [Without any limitations, there will be more awe inspiring work from our artists]*conclusion*"*.

f) **Extrinsic Alternatives**: is the state of affairs expressed by *x* an alternative(s) to the one expressed in *y*?

   **Other clues**: the claim frequently contains necessity modals (*must, have to*). The premise states that all possible other alternatives are excluded.

   E.g. *[There is absolutely no legal, logical, or governing reason that same sex couples cannot be wed]*premise*. [Same sex marriage should be legal]*claim *.*

g) **Extrinsic practical evaluation**/termination and setting up: does *x* express an evaluation and does *y* express an advice/a recommendation about stopping/continuing/setting up that action?

   **Other clues**: the claim usually contains the modal verb *should*.

   E.g. *[A more cooperative attitudes towards life is* more profitable *in one's success]*premise*. [We* should *attach more importance to cooperation]*claim*.*

   Note that sometimes the advice/recommendation is somehow implicit: a sentence such as "buying organic food contributes to sustainability" implies that the speaker thinks that the action "to buy organic food" should be maintained.
   This kind of argument scheme shares with the causal argument scheme of the final type (the end justifies the means) the reference to the frame of intentional human action where consequences of various choices are taken into account. However, they are distinguished from causal argument schemes in that the premise does not express a means to realize what expressed in the claim, but it is an evaluation of the same state of affairs the claim points to.

**Examples on how to apply the heuristics:**

Let's consider example 1), an instance of intrinsic argument schemes, and example 2), an instance of extrinsic argument schemes, and apply questions a-g):

1) [*Due to the increasing number of petrol stations, the competition in this field is more and more fierce*]premise*, thus* [*the cost of petrol could be lower in the future*]claim*.*

   a) Does the sentence "Due to the increasing number of petrol stations, the competition in this field is more and more fierce" express a categorization/definitional properties of the fact that "the cost of petrol would be lower in future"? NO

   b) Is the fact that  "Due to the increasing number of petrol stations, the competition in this field is more and more fierce" or an entity of that sentence (e.g. "the

competition") an example/a series of examples/a part of the fact that "the cost of petrol could be lower in the future"? NO

c) Is the fact that "Due to the increasing number of petrol stations, the competition in this field is more and more fierce" a cause/effect of the fact that "the cost of petrol could be lower in the future" or is it a means to obtain it? YES (cause). Moreover, the claim contains a modal verb.

2) [*Civil rights are something people have worked hard to maintain over the years, abolishing slavery and treating women equally. Homosexual couples are no different.*]*premise* [*They deserve to have their civil rights fulfilled, just like women deserve to vote, they should be allowed to get married*]*claim*.

d) Do the sentences "Civil rights are something people […] are no different" and/or the sentence "Same sex marriage being illegal rids the couple of their civil rights" compare situations happened in different circumstances but similar in some respects? YES: both in the premise and the claim the civil rights of women and salves and those of homosexual couples are compared. The situation compared happen in similar circumstances: women have obtained the right to vote as well as slaves have obtained freedom, while homosexual couples still have to obtain the right to marry. Both in the premise and the claim there are comparative constructions: "no different"; "like".

e) Does the truth of "Civil rights are something people […] are no different" implies the falsity of "They deserve to have their civil rights fulfilled, just like women deserve to vote, they should be allowed to get married"? NO

f) Is the fact that "Civil rights are something people […] are no different" an alternative to the fact that "They deserve to have their civil rights fulfilled, just like women deserve to vote, they should be allowed to get married" NO

g) Does "Civil rights are something people […] are no different" express an evaluation and does *"they deserve to have their civil rights fulfilled, just like women deserve to vote, they should be allowed to get married"* express an advice/a recommendation about stopping/continuing/setting up an action? NO

## 2.3 What if I cannot find the middle level argument scheme?

If none of the proposed questions apply, you should consider the hypothesis that there is no reasoning linking the sentence annotated as premise and the sentence annotated as claim. In this case annotate "No argument". However, before doing so, try the following test:

**"If IT IS TRUE [premise] IS IT THEN TRUE THAT [premise/claim/major claim]?"**

If this hypothetical construction sounds meaningless, you are probably right:

Example

[Exercising is one of the most important things in life]*claim*. [It can even be fun]*premise*

test: If it is true that "exercising can even be fun" then is it true that "Exercising is one of the most important things in life?" NO. → the relation is non argumentative

In these cases write under 'notes' why you think the relation between the premise and the conclusion is not argumentative. Note that in some cases the relation could be argumentative if reversed, or if more information is added to the premise, as in the following case in which the premise should include the whole sentence "paintings by Da Vinci and Michallengo are admired even till now as they were not restricted during those times".

E.g. "*It is undeniable that [when they are given the opportunity to express themselves, most artists will think out of the box and come up with spectacular Arts such as paintings or movies]*claim*. For example, [paintings by Da Vinci and Michallengo are admired even till now]*premise* as they were not restricted during those times'*

If, instead, the test makes sense, please try to identify at least the TOP LEVEL type of argument scheme involved (Intrinsic, Extrinsic or Complex).

In order to do that, use the following heuristics:

i) Can the state of affairs expressed in the premise and the state of affairs expressed in the claim take place simultaneously in the real world or does the realization of one affects the realization of the other one? Yes → intrinsic argument schemes

ii) Is the premise a discourse/statement expressed by an expert/an authority/an institution and does the claim coincide with the content of that discourse? Yes → complex argument scheme (authority)

If answers to i-ii) are NO, the argument scheme is extrinsic. In order to be sure that the argument scheme is extrinsic, check the following question:

iii) Are the existence of the state of affairs expressed in the premise and that expressed in the claim not simultaneous and independent on each other? YES → Extrinsic argument schemes

Examples

3) [*Knowledge from experience seems a little different from information contained in books*]claim . [*To cite an example, it is common in books that water boils at 100 Celcius degree. However, the result is not always the same in reality because it also depends on*

*the height, the purity of the water, and even the measuring tool*]*premise*
(http://www.essayforum.com)

The SoA expressed in the claim ("knowledge from experience is a little different from information contained in books") and that expressed in the premise are simultaneously realized since the premise constitutes an example which shows that what is stated in the claim corresponds to reality.

4) [*Due to the increasing number of petrol stations, the competition in this field is more and more fierce*]*premise*, thus [*the cost of petrol could be lower in the future*]*claim.*
(http://www.essayforum.com)

In 4) the fact that the competition is more and more fierce strongly affects the possibility that the cost of petrol would be lower in future.

5) [*It is clear that CCTVs must be put in all workplaces*]*claim* so that [*crime rates can be minimized*]*premise.* ( http://www.essayforum.com)

In 5) the necessity to put CCTVs in all workplaces is strongly advocated since it entails as an effect the minimization of crime rates (SoA expressed in the premise).

Example:

6) [*The learning motivation of the student who worked previously will be much lower than the students who continue their study in the university directly*]*claim*
[*According to research result published in Makara Journal in 2015 taking a job between school and university will decrease the learning motivation of the student when they attend the university as they have a high level of laziness*]premise
( http://www.essayforum.com)

The premise in 6) makes reference to the results provided by a research institute; in the claim the writer rephrases in own words those results presenting them as facts.

Example

7) [*Civil rights are something people have worked hard to maintain over the years, abolishing slavery and treating women equally. Homosexual couples are no different.*]*premise* [*They deserve to have their civil rights fulfilled, just like women deserve to vote, they should be allowed to get married*]claim. (http://www.essayforum.com)

The state of affairs "people have worked hard to obtain civil rights for slaves and women" does not occur simultaneously to the state of affairs "homosexual couples should be allowed to get married":  the first makes reference to a past event, while the second to a future event. Moreover, the existence of the SoA expressed in the premise in not dependent on the existence of the state of affairs "homosexual couples should be given the right to marry".

**GENERAL ADVICE**

Read the entire text before starting the annotation: since the authors are not native English speaker, the intended meaning of a sentence has sometimes to be inferred. Keep this especially in mind when you have to decide if a relation is argumentative or not. Moreover, try not to rely too much on linguistic indicators which could be sometimes misleading:

6) E.g. *Students who know more than one language are successful. Compared to monolingual students they will be offered more jobs.*

Even if the premise in 6) contains the verb compare, the argument schemes involved is not analogical, but it is a causal one ("knowing more languages" causes "being offered more jobs")

## 2.4 Identify the inferential rule at work

Once identified the type of argument scheme at work, propose an inferential rule for each annotated argument scheme and write it in *Brat* under "notes":

a) check the inferential rules provided in 1.3 for each argument scheme and write the one that corresponds to the argument scheme if you think it is a suitable one.
b) If you think the proposed rules do not fit, make up one and write it down.
   Note that inferential rules show an implicative structure of the type "if……then".
b) If you have annotated the argument scheme as "ambiguous" do not write anything.
h) If you have annotated the argument scheme as "No argument", do not write anything.

Note that inferential rules are abstract rules which are independent of the context: do not make reference to specific entities/situations provided by the text you are annotating, but substitute them with variables (e.g. $x$ and $y$) or general terms:

E.g. *This ham is excellent. It is Parmacotto's*.

Inferential rule: "If a quality characterizes the efficient cause, then such quality characterizes the effect too", NOT "if Parmacotto is a high quality producer, then also the ham is of high quality ".

## 2.5 Summary

To summarize, you are asked to

- annotate the relations "supports" that link premises to claims/major claims (or claims to major claims) selecting the right middle level argument scheme (e.g. intrinsic definitional, complex authority…)
- annotate the inferential rules (e.g. "if the case is the case, the effect is the case") choosing among the proposed ones or making up your own
- in the cases where you cannot find a middle argument scheme, you can choose the label 'ambiguous' and try to find the top level argument scheme or annotate the relation as non argumentative if the relation fails the test "if X (premise) is true then Y (claim) is true"

# 3. References

RIGOTTI, E., 2009. Whether and How Classical Topics Can Be Revived Within Contemporary Argumentation Theory. In: F.H. VAN EEMEREN and B. GARSSEN, eds., Pondering on Problems of Argumentation. Amsterdam: Springer, pp. 157-178.

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# 4. Cheat sheet

In this section you are provided with i) the list of middle level argument schemes together with their identificatory questions and their linguistic clues and ii) some examples of inferential rules for each argument scheme. This sheet is meant to help you following the procedure explained in the guidelines during the annotation process. However, we strongly advice you to read carefully the guidelines in order to understand what you are doing.

a) **Intrinsic Definition**: does *y/x* express a categorization (e.g. *x* is a *y*) and x/y express properties that allow the categorization?

   **Other clues**: the premise and the claim usually share the grammatical subject. The verb which appears in the claim does not express an action, but a state (*to be + adjective*, *to consider*, *to seem*, *to appear*)

   **Inferential rule**: "if x shows typical traits of a class of entities (e.g. positive actions, beneficial decisions…), then it is an instance of that class"

   "If x holds for the definition, it holds also for the defined"

1) **Intrinsic Mereorogical**: is 'the fact that *x*' or an entity cited in *x* an example/a series of examples/a part of 'the fact that y'?

   **Other clues:** the premise is frequently signaled by the constructions "for example", "as an example", "for instance" '*x* proves that'. The claim constitutes a generalization, a state of affairs which cannot be located in space and time (e.g."Tourism has a positive effect for the economy of developing countries"), or a prediction.

   **Inferential rules**:
   -"if all parts share  property, then the whole will inherit this property"
   -"if a part of x has a positive value, also x has a positive value"
   -"if something holds/may hold/held for an exemplary case x, it holds/may hold/will hold for all the cases of the same type"
   -"if something holds/may hold/held for a sample of cases of the type x, it holds/may hold/will hold for every case of the type x"

2) **Intrinsic Causal**: is x a cause/effect of y or is it a means to obtain y?

   **Other clues:** Evaluations about actions play a role as common ground knowledge but **do not constitute the premise textually expressed**.

   **Inferential rules**:

-"if the cause is the case, the effect is the case"
-"if the effect is the case, the cause is probably the case"
-"if a quality characterizes the cause, then such quality characterizes the effect too"
-"if the realization of the goal necessitates the means x, x must be adopted"
-"if an action does not allow to achieve the goal, it should not be undertaken"
-"if somebody has the means to achieve a certain goal, he will achieve that goal"

3) **Extrinsic Analogy**: do *x* and/or *y* compare situations happened in different circumstances but similar in some respects?

   **Other clues**: the premise and/or the claim usually contain comparative conjunctions/constructions (e.g. *as*, *like, in a similar vein*)

   **Inferential rules**:
   -"if the state of affairs x shows a set of features which are also present in the state of affairs y and z holds for x, then z holds for y too"
   -"if two events x and y are similar and event x had the consequence z, probably also y will have the consequence z"
   -if two situations x and y are similar in a substantial way and action z was right in the situation x, action y will be right also in the situation y"

4) **Extrinsic Opposition**:

   **Other clues**: the claim sometimes contain modals which express impossibility (*it is impossible that, it cannot be that*), but it is not always the case.

   **Inferential rules:**
   -"If two state of affairs/entities x, y are one the opposite of the other, the occurrence of x excludes the occurrence of y"
   - "If two state of affairs x, y are one the opposite of the other, they entail opposite consequences"

5) **Extrinsic Alternatives**: is/are the state of affairs expressed by *x* an alternative(s) to the one expressed in *y*?

   **Other clues**: the claim frequently contains necessity modals (*must, have to*). The premise states that all possible other alternatives are excluded.

   **Inferential rules**:
   -**"**if all the alternatives to x are excluded, then x is unavoidable"
   -"if among a set of alternatives only one is reasonable it has to be undertaken"

6) **Extrinsic Practical evaluation**/termination and setting up: does *x* express an evaluation about a state of affairs and does *y* express an advice/a recommendation about stopping/continuing the state of affairs the premise refer to?

**Other clues**: the premise contains adjectives or other linguistic items which qualify something as more or less good.

**Inferential rules:**
-"if something is of important value, it should not be terminated"
-"if something has a positive value, it should be supported/continued/promoted/maintained"
- "if something has positive effects, it should be supported/continued/promoted/maintained"
-"if something has a negative effect it should be terminated"

7) **Complex Authority**: is the premise a discourse/statement expressed by a an expert/institution/authority in the field and does the claim coincides with the content of that discourse?

**Other clues**: the authority to which the writer appeals is usually introduced by "according to", "as shown by", "as clarified/explained/declared by"/

**Inferential rules:**
-"if the institution/expert/authority in the field states that proposition x is true, then x is true"
-"if the institution/expert/authority in the files states event x will occur, then x will probably occur"