

Guidelines for the annotation of structural and persuasive components in case solutions of students in law courses

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1 Introduction

Although the law is a promising discipline for annotating the components of legal writing and arguments due to its fixed logical structure (Mochales-Palau & Moens, 2007; Urchs et al., 2020), evaluated open-access corpora for law are rare (Reed, 2006; Mochales & Moens, 2011; Urchs et al., 2020). However, in the field of NLP there are some annotated law corpora. These corpora show, among other things, the classification of judgments (Urchs et al., 2020), the summarization of legal texts (Hachey & Grover, 2005) and the evaluation of jury verdicts (Poudyal et al., 2019). Natural Language Processing, or natural language processing, is concerned with the interactions between computers and human language. In particular, it addresses how computers can process and analyze large amounts of natural language data. The research field is concerned with extracting structures from natural language texts, which are then evaluated using various computational analysis techniques (Lippi & Torroni, 2016). Thus, NLP offers the opportunity to create educational applications such as intelligent writing support and automated assessment tools (Stab & Gurevych, 2015).

In this guideline, rules for creating a corpus are presented. The corpus is based on 413 annotated case solutions of students, which were created during a practice exam. The case solutions were evaluated for adherence to the appraisal style. Accordingly, it was evaluated whether the appraisal style was applied in the individual steps and whether this followed the argumentation structures of the judicial syllogism. The students each solved cases from different areas of law, such as civil and public law. Rules were established for the annotation of the case solutions; these rules follow accepted works from the field of NLP (Stab & Gurevych, 2014).

Writing persuasive texts plays a major role in legal education (Kosse, 2003). As a part of their training for learning how to write legal opinions, law students are typically challenged to solve legal problems or case studies in the form of persuasive case solutions (Enqvist, 2017). In a case solution, the correct application of the appraisal style is the basis for building up an argumentation in law in a structured and comprehensible way. Here is the weighing of the facts, to the used legal norms (subsumption), in the foreground. (Valerius, 2009). In the subsumption, different arguments must be comprehensibly weighed against each other.

2 Annotation of major claim, definition, subsumption (premise and conclusion), conclusion in case solutions.

The correct application of the appraisal style (judicial syllogism) is the basis for a structured and comprehensible legal case solution. In the following, the most important steps of the appraisal style, as well as its annotation, are explained. The appraisal style consists of four components: the major claim, the definition, the subsumption, and the conclusion, see Table 1.

Table 1: Structure of the appraisal style

Structure of the expert opinion	Definitions	Example: Civil law
Major claim	<ul style="list-style-type: none"> Explains the constituent elements to be fulfilled in the subjunctive 	H could have a claim against R under § 433 (2) BGB for payment of 125 euros for the Leitz Z-1000 air purifier if a corresponding purchase agreement between H and R was validly concluded and remained valid.
Definition	<ul style="list-style-type: none"> Defines the elements of the offense to be fulfilled 	A contract is concluded in accordance with §§ 145 ff. BGB (German Civil Code), a contract is concluded by concurrent and interrelated declarations of intent, the offer and the acceptance.
Subsumption (divided into legal claims and <u>premises</u>)	<ul style="list-style-type: none"> Checks if the conditions of the definition are given 	<u>In the e-mail, R named himself and Mr. Huber as parties as well as a "Leitz Z-1000"</u> as the object of purchase. When interpreting from the objective recipient's horizon according to §§ 133, 157 BGB, the electronics dealer H could assume that his customer R would like to buy an air purifier Leitz Z-1000 from him.
Conclusion	<ul style="list-style-type: none"> Answer to the major claim Comes to a conclusion 	Thus, R has made an offer to H for the purchase of the Leitz Z-1000 air purifier at the price of 125 euros

2.1 Major claim:

The major claim explains the elements of the offense that are to be fulfilled. This must always be written in the subjunctive.

Example: "[K could have a claim against V for handover and transfer of ownership of 25 tons of potatoes of the Agata variety from § 433 para. 1 sentence 1 BGB]."

The following words provide clues to the major claim: *Questionable is, ...; Xy could be against...; To be examined is, ...; To be examined is, ...; Doubtful is, ...; Provided; If; If under the condition/condition...; Possibly...; Possibly...;*

2.2 Definitions:

The definition defines the constituent elements to be fulfilled, according to which the point of view raised in the major claim is considered in more detail from a legal point of view. Here, the

focus should be on the essential (Valerius, 2009), knowledge without regard to the relevance is accordingly not annotated.

Example: "[For this to be the case, an effective purchase agreement between K and V would have to have come into existence. An effective purchase contract arises from two declarations of intent (offer and acceptance) that are inconsistent in terms of content]. The purchase contract derives from the debt relationship. "

The example shows well what should be annotated and what should be omitted. When formulating, care should be taken to ensure that explanations in the definition are generally valid. In this respect, the subjunctive of the introductory sentence should no longer be used (Valerius, 2009). Sentences in the subjunctive should not be annotated here, only the indicative is of importance here.

Example: "[A contract is concluded according to §§ 145 ff. BGB by concordant and mutually related declarations of intent, the offer and the acceptance]."

2.3 Subsumption:

In the subsumption we check to what extent the conditions of the definition are given. Here, the facts are weighed against the definitions and the conditions argumentatively. This weighing follows a logical figure of thought, the so-called syllogistic conclusion (Tettinger, 1992) (cf. Fig. 1).

Hints for subsumption are provided by the following words: *why...; therefore....*

Example: "[R sent the e-mail to the electronics dealer H and it was also received by him in accordance with § 130 (1) BGB. In the e-mail, R named himself and Mr. Huber as parties and a "Leitz Z-1000" as the object of purchase. When interpreting from the objective recipient's horizon according to §§ 133, 157 BGB, the electronics dealer H could assume that his customer R would like to purchase a Leitz Z-1000 air purifier from him. It was not apparent to H that R actually wanted to buy a Leitz file folder with the same designation from stationery dealer A, who also bears the surname Huber. Although R did not explicitly mention the purchase price, she stated that she wanted to purchase the Leitz Z-1000 "at the usual conditions". In this respect, viewed from the objective recipient's horizon, it was to be assumed that R would like to purchase the desired item at the usual retail price, which in the case of the air purifier is 125 euros]".

2.3.1 Premises and legal claims:

In subsumption, the argumentative elements claim, and premise are annotated. Premises are facts that lead to certain conclusions based on the previously given definition. Thus, the premises support the legal claim reached.

< premise> therefore <legal claim>

Example: "[R sent the e-mail to the electronics dealer H and it was also received by him in accordance with § 130 (1) BGB. In the e-mail, R named himself and Mr. Huber as parties and a "Leitz Z-1000" as the object of purchase. When interpreting from the objective recipient's

horizon according to §§ 133, 157 BGB, the electronics dealer H could assume that his customer R would like to buy an air purifier Leitz Z-1000 from him]".

The conclusion always depends on the premise made before. Therefore, the relation of the two components shall also be annotated here. *The conclusion, when interpreted from the objective recipient's horizon according to §§ 133, 157 BGB, the electronics dealer H could assume that his customer R would like to buy an air purifier Leitz Z-1000 from him, becomes logical through the premise, R sent the e-mail to the electronics dealer H and it also reached him according to § 130 para. 1 BGB. In the e-mail, R named himself and Mr. Huber as parties as well as a "Leitz Z-1000" as the object of purchase, concluded.*

Indications for premise are words like: *because...; necessary...; present...; in contrast...; instead...; in any case...; towards...; especially...; merely...; also...*

Indications for conclusions made (claims) are words like: *so that...; but...; because...; since...; accordingly...; again...; however....*

2.3.1.1 Instructions for annotating the relation:

Step 1: Annotation of the subsumption

V erklärt, dass er die Maschine für 1.000.000 € an K verkaufen möchte, wenn das Angebot bis zu dem Datum 10.3. angenommen wird. Dadurch sind sowohl die Vertragsparteien (K und V), sowie der Kaufgegenstand (Maschine) als auch der Kaufpreis (1.000.000 €) von V erklärt worden und damit alle wesentlichen Vertragsbestandteile benannt.

Step 2: Annotation of the premises and conclusions (claims)

V erklärt, dass er die Maschine für 1.000.000 € an K verkaufen möchte, wenn das Angebot bis zu dem Datum 10.3. angenommen wird. Dadurch sind sowohl die Vertragsparteien (K und V), sowie der Kaufgegenstand (Maschine) als auch der Kaufpreis (1.000.000 €) von V erklärt worden und damit alle wesentlichen Vertragsbestandteile benannt.

Step 3: Annotation of the relation

V erklärt, dass er die Maschine für 1.000.000 € an K verkaufen möchte, wenn das Angebot bis zu dem Datum 10.3. angenommen wird. Dadurch sind sowohl die Vertragsparteien (K und V), sowie der Kaufgegenstand (Maschine) als auch der Kaufpreis (1.000.000 €) von V erklärt worden und damit alle wesentlichen Vertragsbestandteile benannt.

2.4 Conclusion (result):

The conclusion is the answer to the posed major claim. Thus, the case solution reaches a final result here. The question formulated in the major claim is answered. The conclusion is always written in the indicative. Reasons are out of place here; they only belong in the definition or subsumption. (Valerius, 2009).

Example: "[In summary, a claim of K against V for handover and transfer of ownership of the machine arises from § 433 I p. 1 BGB]. Some definitions I have deliberately omitted, for example, of the offer and acceptance, etc., because in the facts of the case there were no doubts

about the declarations of intent of the two contracting parties or the representation and that it should be an offer and an acceptance. I also deliberately did not address further points of examination, such as 1. b) aa) admissibility of the representation or 2. a) the declaration of rescission, because they were obvious in the facts. Etc."

The following words offer clues to the conclusion: *accordingly...; consequently...; thus...; finally...; consequently...; therefore...; accordingly...; therefore...*

Example: "[Thus, R can rely on a ground for rescission according to § 119 para. 1 var. 1 BGB]".

Example: "[As a result, H has no claim under § 433 (2) BGB for payment of the purchase price of 125 euros for the air purifier against R]".

3 Components of a persuasive case solution

In legal science, reasoning follows the so-called judicial syllogism. The judicial syllogism is considered a classical scheme and is used in most textbooks as a basis for explaining legal logic as well as legal persuasive writing (Backer, 2009; Schneider & Schnapp, 2006). The judicial syllogism is based on the ancient logic of Aristotle and forms a figure of thought, the so-called logical conclusion (cf. Fig. 1) (Tettinger, 1992).

Upper sentence: Licensed doctors may operate.

Subordinate clause: A is a doctor.

Final sentence: Therefore, A is allowed to operate.

Figure 1: Justice syllogism (Tettinger, 1992)

Judicial syllogism follows subsumption and deduction. Subsumption is the subordination of the case under certain legal facts. Deduction forms the derivation of the legal consequence (consequence) from the major claim and the statement of the facts (Hassemer, Neumann, & Saliger, 2016; Sieckmann, 2020). The application of subsumption and deduction is a central part of the appraisal style, which results from a four-stage sequence of thoughts (the main proposition, definition, subsumption, conclusion) (see Table 1). Adherence to the appraisal style and a reasoned subsumption are the basis for students to successfully solve exams and term papers.

In classical argumentation theory, an argument consists of several statements, including opinions (claim) and premises (premise) that support or verify these opinions (claim) (Peldszus & Stede, 2013; Toulmin, 2003). The opinion represents an assumption or statement that should not be simply accepted by the reader. Premises can either support the opinion or attack it. An opinion may be supported by several different premises or by a chain of premises in which each premise is in turn supported by another premise. The simplest form of this relationship can be represented as follows:

<opinion> because <premise>.

The logic of legal argumentation also follows the classical theory of argumentation and uses opinions and premises. However, an opinion here is considered more like a conclusion. The big difference to the classical argumentation theory, however, is the arrangement of the claim (conclusion) and the premise. In legal doctrine, argumentation usually starts with the premise, for example, "*A thing is a physical object according to § 90 BGB*". From this premise a legal consequence or a conclusion (claim) is derived. Because a thing is a physical object according to § 90 BGB", a ball can be regarded as a thing (cf. fig. 2). The simplest form of this connection can be represented as follows:

<premise> therefore <legal claim>.

This simple relationship is illustrated again in the following example.

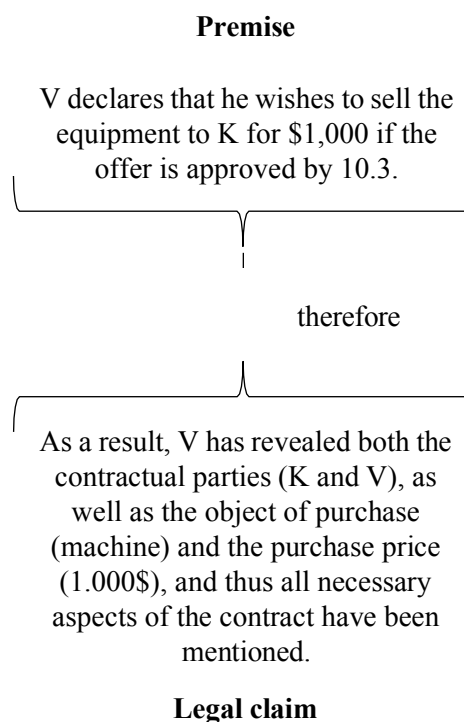


Figure 2: Model of argumentation in
jurisprudence.

4 Limits of argumentation components

Argument components do not always necessarily comprise a complete sentence, since a sentence often consists of several argument components that are annotated separately. For example, a sentence may consist of several premises and a legal consequence. Similarly, a sentence may begin with so-called phrases such as "In my opinion...", "I think..."; ', "It could be...". These are not relevant to the content of the argument. However, it is important that the rest of the argumentation skills make a complete sentence even without the phrase or the introduction. We address these and other rules below.

4.1 Completeness rule

An argument component should always contain a point of view, which can also represent a complete sentence. In English, one can check whether an annotated component represents a complete point of view by placing the clause "It is true that, <claim>" in front of the statement

and still keeping the sentence grammatically correct. If this is fulfilled, then the annotation is correct according to the completeness rule (Stab & Gurevych, 2015). In German, and especially in case solutions, the rule cannot be adopted because the German sentence structure differs from the English sentence structure and also the formulations in legal doctrine are different. Thus, as soon as the sentence part "It is true that < conclusion >" is placed before the statement, the sentence structure of the statement must be changed so that it still remains grammatically correct. The following examples illustrate this. The sentence part in the square brackets contains the correct boundaries of the argument component of the annotation.

Example: "[The ball is one thing]."

Rule Application: It is true that "[the ball is one thing]."

German rule: If "It is true that" can be placed before the argument component and the sentence structure of the argument component can be rearranged with the same words in such a way that the sentence remains grammatically correct, then the annotation is fulfilled according to the completeness rule.

4.2 Relevance rule

All words that are relevant for the argumentation component must be included in the annotated component. This means that all contextually relevant subordinate clauses must be included in the annotated component. Also temporal information such as "current", "the momentary" or "present", which can stand at the beginning of a sentence, must be taken over into the annotated component, since otherwise this is not to be understood content wise. (Stab & Gurevych, 2015).

Example: "[At this moment the contract of carriage is for the time being pending invalid]."

This rule can be adopted in German, since here it is facilitated by the fact that in most cases such information is not separated from the rest of the sentence by a punctuation mark.

4.3 Separation rule

A sentence may be fully annotated only if the corresponding sentence does not contain an inference between different premises. It is important that sentences with multiple premises connected by words such as "and", "or", as well as punctuation marks as in a bulleted list, and containing no inference between different premises, are not separated. This can often occur when one sentence contains multiple reasons for an inference from another sentence. In this case, the different reasons (premises) from one sentence must be annotated as one argument component. This also applies to conditional sentences, which contain a condition under which something occurs (Stab & Gurevych, 2015). An indicator for such sentences are words like "if", or "in that". The subordinate clause formulates the condition that must be met in order for the consequence stated in the main clause to be realized.

Example: "This is due to the reason that [K grew up in Leipzig while speaking with a distinct Saxon dialect]."

In this example, the argumentation component contains two premises: "K grew up in Leipzig" and "Speaks with a distinct Saxon dialect at the same time". These are connected by the word "and". I.e. this rule can be adopted for German reviews, which means that these two premises should be combined into one argumentation component.

4.4 Punctuation rule

Punctuation marks that come at the end of an argument component must not be included in the annotation (Stab & Gurevych, 2015). This also includes exclamation marks or question marks, these must not be annotated.

Example: "[L could have a claim against K for payment of 230 euros for a flight to and from Bordeaux under a contract of carriage pursuant to § 631 I]."

This rule can also be transferred one-to-one for German reviews, since there the English and German grammar do not differ.

4.5 Grammar rule

Sentences structured like bullet points may be considered complete premises or conclusions as long as the content is understandable. However, NO keyword answers may be made, so the premise of the annotation is complete sentences.

Example: In order to be able to contest a contract, three conditions are always necessary:

"[The rescission must be declared to the other party to the contract (Section 143 (1) of the German Civil Code)]."

"[The relevant contestation period must be observed in each case (Sections 121, 124 of the German Civil Code)]."

"[There must be a reason for the challenge (§§ 119, 120, 123 BGB)]."

The examples shown are likely to be annotated because complete sentences were formed.

Dots or arrows used for enumeration or structuring must not be annotated with.

Example: "○ [According to §§ 145 ff. BGB (German Civil Code), a contract is concluded by concurrent and mutually related declarations of intent: offer and demand] -> [There should have been an effective purchase contract]."

However, sentences that are grammatically incorrect should be annotated as an argument component as long as they are understandable.

Example: "[Does H. have a claim for payment of the purchase price for the air purifier against R with regard to Article 433 BGB. For this to be the case, a purchase agreement must have been concluded between H and R]".

Conclusions or premises that are split into multiple propositions and only together make a meaningful argument component are annotated as one argument component.

4.6 Chapter name rule

In case solutions it may happen that the individual components or steps of the case solution are understood with headings / chapter names. Chapter names can be relevant for the context of an argumentation component and should be annotated in such cases. In most cases, however, they serve only for structuring purposes and should not be annotated.

Example: "Top sentence: [A could have a claim against C pursuant to §433 para. 1 sentence 1 BGB for the handover and transfer of ownership of 500 tons of high-quality steel at a price of 265,000 euros 1. Purchase contract: The question is whether an effective purchase contract between A and C has come into existence. A purchase contract according to §145ff consists of declarations of intent which coincide and relate to each other, the offer and the acceptance]."

Example: "Representation [However, A could have made a valid offer to K on behalf of V according to §164 para. 1 p. 1 BGB]. "

Example: "2. claim extinguished? [The question is whether K can effectively challenge the purchase contract between her and V pursuant to § 142 (1) BGB]. a) Declaration of avoidance vis-à-vis opponent of avoidance [For this, K would have to expressly or impliedly declare the avoidance as a unilateral declaration of intent requiring reception, § 143 (1) BGB]. "

As can be seen in the example, the term major claim or declaration of challenge is only used for structuring, therefore it is not annotated. Headings of the exam or the case solution are also not annotated.

Example: Te LAW 1, LABOR LAW "[According to the facts, R wanted to order a special file folder (Z-1000) from A, but orders an air purifier (Z-1000) from H]."

In the example you can see that the headline has nothing to do with the argumentation or the major claim.

4.7 Personal pronoun

Personal pronouns that name the author of the expert opinion do not belong to the case solution and must not be annotated. Thus, words such as "I" or "we" do not belong to the case solution and are not annotated.

4.8 Bracketing rules

Content in parentheses is not annotated if the content of the parentheses only serves to structure the text or if positive or negative outputs of the argument are to be underlined.

Example: (1) "[Order means that the buyer has ordered something from the seller without the seller having previously made an offer]. (2) [R has written an email to H explaining which product she needs]".

Example: "[Thus, H. is not entitled to payment of the purchase price] (+). "

Example: "[Thus, there is an effective contract of sale between H. and R. concerning the described conduct] (-). "

Brackets are annotated with when you clarify the issue or describe the parties to the contract in more detail.

Example: "[This names both the contracting parties (A and R), as well as the object of purchase (file folder) and the purchase price]. "

4.9 Letters and numbers

Letters and numbers that cannot be assigned to any premises or conclusions are not annotated with, since they have no influence on the argumentation. Numbers include Roman numerals (I, II, III, IV...) as well as Arabic numerals (1,2,3,4...).

Example: C. "Intermediate result [H's claim for payment of the purchase price against R under § 433 II has lapsed due to an effective challenge on the part of R under § 142 I]".

Example: I. "Anfechtung [For this purpose, R would have to have effectively challenged her declaration of intent that constituted the conclusion of the contract. An effective rescission consists of a declaration of rescission vis-à-vis the correct rescission opponent, a ground for rescission, and compliance with the relevant rescission period]. "

5 Relations

A good argument can always be supported by at least one or more premises. Thus, argument components form a tree structure of an argument through relationships (Stab & Gurevych, 2015). Especially in the focus of a case solution a good argumentation is important. Which is why many arguments can be used here. At these points it is often necessary to show why one of several possible solutions is preferred. Therefore, many arguments should be used to support the preferred solution, but also to refute the alternative that is not used.

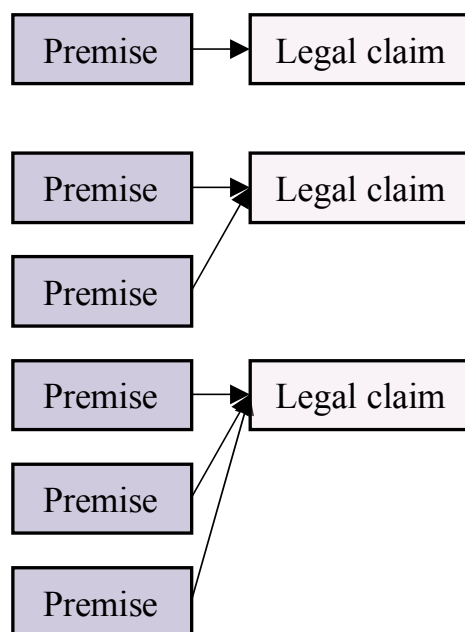


Figure 3: Argumentative structures

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