Arguing with Emotion

Martyn Lloyd-Kelly and Adam Wyner

University of Liverpool, Liverpool, L69 3BX, UK,
{mlk5060,azwyner}@liverpool.ac.uk,
http://www.csc.liv.ac.uk/

Abstract. Emotions are commonly thought to be beyond the pale of rational analysis, for they are subjective, may vary even with respect to the person experiencing the emotion, and may conflict with rational thought. In this paper, we develop the position that emotions can be the *objects* of argumentation, which we express by introducing emotion terms in *emotional argumentation schemes*. Thus, we can argue about whether or not, according to normative standards and available evidence, it is plausible that an individual had a particular emotion. This is particularly salient in legal cases, where decisions can depend on explicit arguments about emotional states.

Keywords: legal reasoning, emotional argumentation schemes

1   Introduction

Emotions are commonly thought to be beyond the pale of rational analysis. They are subjective; the same person in the same context may have different emotional responses to stimuli; a person's emotional response may conflict with rational thought. Emotions are also thought to only serve in an adjunct role in decision-making, by enhancing, moderating, or interfering with the persuasiveness of reasoning in an argument [19]. However, emotions can have a direct role where we normatively analyze and evaluate emotional appeals [4,11]. Emotions themselves can be viewed as *objects* of argumentation, not just adjuncts [13]. Thus, rather than filtering out or subordinating to rational argument, emotions can be *first class* citizens of argumentation. Developing this position, we introduce *emotional argumentation schemes*, where emotional terms are the components of the argument. This is particularly salient in legal cases, where reasoning about emotional states is a critical factor in reaching legal determinations.

In this paper, we briefly outline the legal context, computational analyses of emotions, and current research on emotions and argumentation. We then introduce our novel emotional argumentation schemes, where the key idea is that emotional terms can be central *components* in the schemes. These schemes model key parts of reasoning in the legal context and of the computational analysis of emotions. We use the schemes to model legal arguments that are relevant to legal cases. We close with some indications of future research.

2 Emotions in the Law

As emotions are a widespread, salient experience of our lives and in our social encounters, it is unremarkable that they are the subject of legal proceedings, where human experience and behaviour is reasoned about and regulated. Considering legal contexts bounds our discussion in three respects. First, there are explicit arguments about emotions, so we need only be concerned with *explicit statements about emotions rather than their psychological or physical reality*. Second, the legal context is *normative* and *truth determining*; judges and juries decide, relative to a normative model of human emotional responses. This means that though a party to a legal case may claim an emotional state as justification for an action, the courts may decide otherwise based on arguments about evidence, testimony, normative reasoning about emotional states, etc. Third, the arguments we consider are about emotional states *after the fact*, for we are not considering emotions engendered during the court proceedings. This means that scientific indicators of the embodiment of the emotion, e.g. MRI brain scans along with other physiological measurements, are not relevant to our discussion. While we acknowledge theories bearing on the embodiment of mind and emotion [10], we can only relate to the issues raised in terms of normative legal arguments about claims of a past emotional state rather than the real time indicators of emotion.

2.1 Various Forms

Emotions in law appear in a variety of ways. In common law, among the *causes of action* we find *intentional or negligent infliction of emotional distress* and *sexual harassment*, which have emotional referents. Over the course of litigation, there will be arguments as to whether distress was caused, the extent of distress, along with supporting evidence or expert testimony. In *hate crimes*, the emotional disposition of the perpetrator, whether the perpetrator felt hate towards the victim, may be subject to argument [7]. The difference between *murder* and *voluntary manslaughter* can hinge on the emotional state of mind of the perpetrator, e.g. *heat of passion*. Where emotionality is said to interfere with rationality, time may be a crucial factor, for the more time that passes between the incident that instigates the emotion and the action, the more the perpetrator is normatively taken to return to his "right mind", making the action more premeditated, and therefore more severely punishable. In arguing a case, lawyers make *rhetorical appeals* to a jury, attempting to elicit pity, fear, or sympathy in an effort to sway a decision on behalf of their client. *Jury instructions* are given by the judge to the jury about how the jury should reason with the evidence, law, and arguments in reaching its decision. For example, a jury might receive instructions to reason strictly about the facts of the case with respect to the law, leaving aside emotional appeals. In cases of particularly heinous crimes, the *degree of outrage to the sensibilities* is relevant in meting out punishment. Finally, in coming to a decision, the judges may seek any relevant mitigating factors which warrant *mercy* and counterbalance an otherwise harsh decision.

In all these uses, we can reason and argue about emotional content. For example, to counter an emotional conclusion, one might question whether certain actions, statements, or circumstances are consistent with a normative standard under which the claimed emotion obtains. Where such inconsistencies arise, one may counter-claim that the emotion did not normatively obtain, undermining the claimants argument. Alternatively, there may be procedural moves, as in where an emotional claim or emotional argument is ruled inadmissible in court. In these various ways, we reason explicitly about arguments with emotional content rather than simply ruling them out. As argued in [9], by making emotional arguments explicit and formal, we can present better, clearer, and fuller representations of legal case arguments and decision making. The question is, then, just how to represent emotions so as to be arguable?

2.2   Jury Instructions

One approach to modeling legal reasoning would be to model individual cases or a corpus of legal cases, e.g. as in legal case-based reasoning [1]. We take a different but related approach by modeling aspects of the reasoning found in jury instructions, e.g. the *Judicial Council of California Criminal Jury Instructions (2011)* [12], which are developed and maintained by criminal justice systems as instructions and standards for judges, juries, and litigants on how legal issues are to be decided, giving indicative cases. As such, in other words, jury instructions are intended to be distilled guidance about normative legal reasoning that takes the proceedings, evidence, and arguments of the case over time as input and produces a decision.

We consider, in particular, California Criminal Jury Instruction CALCRIM No. 511 *Excusable Homicide: Accident in the Heat of Passion*, which establishes the conditions under which a homicide is excusable on the grounds of extreme emotion and cites cases for various points of the conditions, e.g. Substantial Emotional Distress Defined in People v. Ewing (1999) 76 Cal.App.4th 199, 210 [90 Cal.Rptr.2d 177].

To ground our analysis, we provide the relevant extracts from the two pages of the jury instructions for CALCRIM No. 511. We index clauses I - VII for reference, and we have omitted clauses irrelevant to our discussion relating to *undue advantage*, *dangerous weapons*, *cruelty or unusualness of killing*, *intent to kill*, *great bodily injury*, or *criminal negligence*:

[I] CLAIM: The defendant is not guilty of (murder/ [or] manslaughter) if (he/she) killed someone by accident while acting in the heat of passion. Such a killing is excused, and therefore not unlawful, if, at the time of the killing:

- **1. The defendant acted in the heat of passion;**
- **2. The defendant was (suddenly provoked by <insert name of decedent>/ [or] suddenly drawn into combat by <insert name of decedent>);**

– **3 - 7** indicate other, non-emotional conditions.

[II] A person acts in the heat of passion when he or she is provoked into doing a rash act under the influence of intense emotion that obscures his or her reasoning or judgment. The provocation must be sufficient to have caused a person of average disposition to act rashly and without due deliberation, that is, from passion rather than from judgment.

[III] Heat of passion does not require anger, rage, or any specific emotion. It can be any violent or intense emotion that causes a person to act without due deliberation and reflection.

[IV] In order for the killing to be excused on this basis, the defendant must have acted under the direct and immediate influence of provocation as I have defined it. While no specific type of provocation is required, slight or remote provocation is not sufficient. Sufficient provocation may occur over a short or long period of time.

[V] It is not enough that the defendant simply was provoked. The defendant is not allowed to set up (his/her) own standard of conduct. You must decide whether the defendant was provoked and whether the provocation was sufficient. In deciding whether the provocation was sufficient, consider whether a person of average disposition would have been provoked and how such a person would react in the same situation knowing the same facts.

[VI] The People have the burden of proving beyond a reasonable doubt that the killing was not excused. If the People have not met this burden, you must find the defendant not guilty of (murder/ [or] manslaughter).

The instructions also provide the duty of the trial court to give the instructions, related CALCRIM instructions, authorities (penal codes, case citations, secondary sources), and related issues (distinction between excusable, voluntary, and involuntary manslaughter).

[I1.] introduces the *heat of passion* element, which is clarified (somewhat) in [II] and [III] as a violent or intense emotion that interferes with rationality. In [II] and [V], the provocation must be *sufficient* to interfere in the rationality of a *person of average disposition*. [I2.] and [IV] highlight temporal dimensions: the provocation must be *sudden* (or combative) and be temporally close to the offending action; while the temporal extent of the overall provocation is underspecified, presumably the final "trigger" provocation is sudden. In [VI], the proof standard *beyond a reasonable doubt* is use to decide whether the killing was not excused; that is, if there is some reason that the killing was excused based on the conditions, then the jury should pass down this decision.

Having presented the elements of legal reasoning we model, we turn to outline computational models of emotions.

3 Analysis of Emotions

There has been substantial research on computational modeling of emotions in agents and in modeling the concerns of others. The Ortony, Clore, and Collins (OCC) model of the emotions [15] decomposes emotions according to whether they are reactions to the consequences of events pertaining to the goals of an agent, consequences of an agent's actions, and an agent's attitude towards certain objects. One of the key ideas of the model is that the same event/action/object (EAO) may elicit different emotional responses from different agents depending upon how it impacts upon their goals, standards, or attitudes (GSA). For example, suppose two agents (i and j) are held at gunpoint and threatened; agent i may feel fearful whereas agent j may feel angry. Furthermore, the emotional intensity of the emotion may vary according to the settings of several sorts of parameters. *Central* variables include desirability, praiseworthiness, and appealingness; they pertain to the intensity of emotions regarding events, actions, and objects respectively. *Global* variables, reality, proximity, unexpectedness, arousal, effect every emotion type: with *sense of reality*, the issue is whether the eliciting EAO actually occurred or was a hypothetical situation; *proximity* relates to how temporally close the EAO prompt is; *unexpectedness* bears on whether the agent was surprised or not with the EAO; and *arousal* expresses the degree to which the agent is attentive prior to and during the EAO. Finally, *local* variables are specific to one emotion type, for example, *likelihood* is associated with the emotion types *hope* and *fear*. Each variable has a value and weight that determines whether the emotion is triggered (the emotional threshold has been attained) and at what intensity. Emotions and their intensities also have rates of *decay* [18]. To determine whether a particular emotion holds or not of an agent, each of the values of the variables must be given, then input to calculate the values for *intensity*, *threshold*, and rate of *decay*.

[16,17] refine and formalize the OCC model in an agent specification language, introducing a logical language and its semantics. For our purposes, such a representation provides the *terms* that can be used in argumentation schemes to *justify* emotions. Models of agents emotional states can be modeled in knowledge bases. For example, *fear* occurs when an agent i with plan π believes that certain constituent parts of π, e.g. K, may not be achieved, resulting in a failure to execute the overall plan. This is formulated as: $fear_i\ (\pi, \neg K)$. Clearly, if any portion of the representation fails to hold, *fear* does not hold for that agents.

For our purposes, it is not only necessary to represent the emotions of individual agents, but also to be able to model the emotional representations of others, particularly the defendant and the abstract *person of average disposition* referred to in CALCRIM No. 511 since these are compared in giving a decision. [8] extends the OCC model to model and reason about the concerns of others (COO), including the emotions of other agents. Agents build and maintain databases of COOs and use them to reason deductively and abductively about the emotions of other agents in the environment. In [8], agents possess *interpretative* and *manifestative* personalities. The interpretive personality is used to generate an emotion from a certain situation by referring to the goals, stan-

dards, and preferences (GSP) of an agent. The manifestative personality is used to generate an action in accordance with the emotion generated. The two are used in conjunction in order to allow an agent to make an explanatory inference with respect to another agent. For an agent to model how another agent will behave it needs some understanding of both these personalities. In addition, [8] introduce the idea of satellite COO's, which are models that one agent has of another agent's models of others, e.g. *what I think you think of others (perhaps including me)*. Such COOs may also used for *hypothetical reasoning* as in *how would I feel in such a situation?*, which could then be used to predict the behaviour of a stranger. In addition to the GSP of individual agents, we can have a system-wide GSP which sets a standard and can be consider to be the GSP of a the abstract *person of average disposition*.

4 Argumentation Schemes

Argumentation schemes describe normative, presumptive, defeasible reasoning patterns [21], that is, they describe patterns of how certain reasoning patterns do and should appear, how the conclusions are presumed to follow from the premises, and how the reasoning can be defeated in various ways. They cover a broad spectrum reasoning, including what is often referred to as *fallacious* argumentation, arguments which can be shown to be false in terms of reasoning or in light of additional facts or growth of information.

One example argument pattern is *Argument from Distress*.

Premise 1: Agent x is in distress (is suffering).
Premise 2: Agent y's bringing A will relieve or help to relieve this distress.
Conclusion: Agent y ought to bring about A.

There are various objections one might make about this argument: x is not in distress; even if y brings about A, it will not relieve this distress; it is not possible for y to bring about A; or, there are negative side effects to bringing about A that preclude bringing it about. If one agrees with one or more of these objections, then the presumptive conclusion does not hold, and the argument is defeated. The objections might, in a dialogue, be cast as questions such as *Is it the case that x is in distress?*, where the negative answer introduces the objection, while the positive answer upholds the presumptive conclusion.

In this scheme, the emotional term *distress* appears among the premises; that is, we do not have an argument for *distress*, where a statement such as *Agent x is in distress* is the conclusion of an argument which follows from some specified premises. While there are many other argumentation schemes that have emotional terms among their premises, e.g. Threat, Fear Appeal, Danger, Need for Help, and Distress [21], we know of no schemes for emotional conclusions, where the emotion statement is the conclusion of the argument rather than a premise; in other words, we have yet to presumptively argue *for* an emotion.

In a legal setting, as outlined in section 2.2, determining whether the emotion *normatively* and *plausibly* holds or not is crucial to the legal decision. Not

only must the premises be supported with reports and evidence from the defendant and witnesses, but also a COO must be constructed for that emotion that represents the *person of average disposition*. The emotional models for both the defendant and the COO for the person of average disposition are compared. It may, in addition, be argued that the defendant and COO models must be relative (e.g. child, psychologically abnormal, unusual circumstance, etc), subclassing the person of average disposition relative to the defendant's class. It is also worth noting as an aside that argumentation schemes with such emotional terms among their premises may also be considered *rhetorical* schemes which are used to persuade others. For example, Argument from Distress might be used as an argument by a prosecuting attorney that the jury ought to make some particular decision in a case. As part of this, the attorney would construct a COO model of the individual bearing the distress. Alternatively, in an Argument from Fear Appeal, the jury members' own concerns might be offered as a reason for making a decision, thus requiring the prosecutor to model the jurors' hypothetical concerns.

Another important scheme in [21] for our purposes is the abductive *Backward Argumentation Scheme*, which allows reasoning from data to the most plausible hypothesis.

Premise 1: D is a set of data or supposed facts in a case.
Premise 2: Each one of a set of accounts A_1,..., A_n explains D.
Premise 3: A_i is the account that explains D most successfully.
Conclusion: A_i is the most plausible hypothesis in the case.

This is particularly useful in a legal setting where from known facts and several candidate theories, we reason to a plausible hypothesis, from which some legal decision will follow. Emotional conclusions may appear as parts of the accounts. For example, given as a fact that a perpetrator murdered a victim, the particular emotional context of the act may be significant in the legal judgment. If the best account for the murder includes a significant negative, shocking event which might (in the person of average disposition) induce emotional distress (even where this is not claimed by the defendant), this might be a mitigating factor in the judgment, deciding in favour of excusable homicide; alternatively, if no such abductive argument to an emotional state can be made, the absence of an emotion might be an aggravating factor. There are a range of objections one can raise for abductive arguments concerning the facts, the accounts for the facts, the success ranking, etc..

While argumentation schemes for emotions have not been discussed in the literature, the role of emotions in the *course* of arguing has been. In [19,20], fallacious arguments are conversational moves that, while appearing to contribute to the purpose of a conversation, interfere with it. In this view, emotional arguments have an adjunct status: "good" emotional arguments can be used to direct an agent towards a prudent course of action to achieve a desired goal, while "poor" emotional arguments can detract from it. Thus, normatively, one should only use good and avoid fallacious argument forms. While there are argumentation schemes with emotional content, the emphasis is on filtering "poor"

arguments from the otherwise "rational" discussion rather than reasoning with them.

[14] integrates the OCC model into a decision-making model that uses an action formalism with the *Practical Reasoning Argumentation Scheme* [2], argumentation frameworks, and value-based argumentation [5]. In this analysis, emotions play an adjunct role of influencing an agent's decision-making with respect to what course of action to follow; emotions can increase or decrease the priority given to alternative value rankings, thereby influencing the choice of action.

5 Emotional Argumentation Schemes for CALCRIM No. 511

As outlined in section 4, emotions in the context of argumentation have been regarded as unargued for premises or as adjuncts in reasoning. However, as claimed in [4,11], emotions have a direct role in argumentation in terms of how we normatively analyze and evaluate emotional appeals. In [13] it is argued that emotions themselves should be viewed as *objects* of argumentation rather than serving only to enhance the persuasiveness of reasoning in an argument. Thus, rather than filtering out or subordinating to rational argument, emotions can be *first class* citizens of argumentation. In addition, we see the main advantage of introducing emotions as first class citizens of argumentation schemes is that we can then *argue about the emotions*, which is what occurs in legal contexts.

We introduce *emotional argumentation schemes*, where emotion terms are the conclusions of argumentation schemes and follow from premises which are given by the OCC. Thus, as with other defeasible arguments, we can argue for or against emotional arguments. These emotional conclusions may then serve as premises of other arguments such as *Argument from Distress* or as components of such premises as in the abductive argumentation schemes.

As we do not have the space in this paper to give analyses of all possible emotional argumentation schemes, we provide one illustrative example which represents the elements taken from the full analysis of the emotion *anger* in the OCC. We have been concerned to represent the key clauses of CALCRIM No. 511, particularly:

- Heat of passion.
- Sufficient provocation.
- Sudden provocation.
- Temporal proximity between provocation and offending action.
- Beyond reasonable doubt.

The objective of reasoning about these elements is to determine whether or not the defendant was irrational at the time of committing the offending action. Our strategy has been to identify sub-arguments which form a tree of justification, linking conclusions of one argument with premises of another till we conclude with the root of the whole argument. In these schemes, the root conclusion is

Agent x was irrational at the time of doing action a3, which is because Agent x was in the heat of a passion that interfered with rationality.

We relate the schemes here to the OCC in that we take into consideration the concepts and relationships the OCC uses to explain emotions. The OCC has formulae which calculate, from the values of several variables, the values of other variables, e.g. intensity; in addition, there are complex issues about *decay* rates. For our purposes, we do not provide a full analysis, including arguments and formulae, for all these elements. In addition, the OCC and related work analyse a spectrum of emotions in a range of degrees, while we are only interested in creating arguments relevant to CALCRIM No. 511. In the following, premises are introduced which would themselves require further argumentation and eventual grounding in some base model of the emotions (for related treatments of argumentation and semantic models see [22,3]).

The schemes we introduce below would be used in several different ways: *forward* or *backwards/abductive* inference; comparing the emotional states and actions of the defendant to those of the person of average disposition. The comparison may give rise to further schemes and objections, which we do not introduce here.

As we are providing defeasible argumentation schemes, used in context where knowledge is partial or perhaps inconsistent, there may be a variety of ways to defeat the arguments: one may object directly that some premise (or the conclusion) is false, giving the premises from which this objection presumptively follows; one may object that while a premise is not false, it is insufficiently supported, then providing an argument with the selected premise as conclusion, but the argument itself has a falsifiable premise; one may argue that the scheme is inapplicable in a particular circumstance; one might cite exceptions which hold, so the presumptive conclusion does not obviously follow. We leave implicit these various ways of arguing against the schemes. However, these various ways to attack the scheme represent the distinct ways that the arguments can be attacked, moving closer to the goal of making such reasoning explicit and formal [9]. In a legal setting, they could be used by legal professionals to analyse the emotional arguments.

Disapproval/Blameworthy Scheme
Premise 1a: Agent y performs action a1.
Premise 1b: Action a1 highly conflicts with the standards of Agent x.
Conclusion c1: Agent x highly disapproves of Agent y's highly blameworthy action a1.

Intense Displeasure Scheme
Premise 2a: Agent y performs action a2.
Premise 2b: Agent x intensely desires goal g.
Premise 2c: Action a2 results in not g.
Conclusion c2: Agent x is intensely displeased that not g holds.

Intense Anger Scheme

Premise 3a: Agent x highly disapproves of Agent y's highly blameworthy action a1.

Premise 3b: Agent x is intensely displeased that not g holds.

Premise 3c: The action a1 which Agent y performed is action a2 which results in not g.

Conclusion c3: Agent x was intensely angry at Agent y with respect to action a1.

Emotionally Overwhelmed Scheme

Premise 4a: Agent x was intensely angry at Agent y with respect to action a1.

Premise 4b: Agent x performs action a3, which is not equal to action a1.

Premise 4c: Action a1 happened in close temporal proximity to action a3.

Premise 4d: Action a1 was sudden and highly unexpected by Agent x.

Conclusion c4: Agent x was emotionally overwhelmed while doing action a3.

Irrationality Scheme

Premise 5a: Agent x was emotionally overwhelmed while doing action a3.

Premise 5b: Being emotionally overwhelmed precludes being rational.

Conclusion c5: Agent x was irrational at the time of doing action a3.

The schemes for **Disapproval/Blameworthy** and **Intense Displeasure** are used to argue for the conclusion of **Intense Anger Scheme**. The **Emotionally Overwhelmed Scheme** uses the intense anger conclusion along with temporal proximity and suddenness to conclude that the agent is emotionally overwhelmed. The **Irrationality Scheme** uses this conclusion along with a premise about the relationship between emotionality and rationality to conclude that the agent was irrational. This last conclusion is the target required (for our purposes) for *excusable homicide* – the killer was in the *heat of passion*, so not rationally in control of (or responsible for) his actions. Of course, a range of other conditions (not given) are required as well since the killing must also be accidental. Finally, for the burden of proof to be satisfied, there ought to be no reasonable means to defeat these arguments for irrational behaviour.

A fully spelled out range of argumentation schemes would be more extensive than these several schemes and include reasoning about the various elements of the OCC, the COO, the comparison between the defendant and a person of average disposition, auxiliary supporting evidence, and reported bodily states. Nonetheless, our analysis gives a clear indication of how emotional argumentation schemes can constructed, linked to further arguments, such as the relationship between emotionality and rationality, and elaborated further. In our view, a key advantage of presenting emotional argumentation schemes is not only the explicitness and clarity, but that we can introduce objections at key points which undermine the presumptive conclusions. Such objections are key in legal arguments and reaching judgments.

6 Future Work

We propose to continue to research into the many facets of emotions in legal reasoning so that they may be better understood and used in argumentation schemes and argumentation frameworks. Achieving this would facilitate a discussion of the relevant emotions present in the case by the judge, jury and lawyers rather than dismissing them as *ad hoc* arguments. One potentially useful approach is to use the argumentation schemes we have introduced along with argumentation schemes used to argue about stories and criminal evidence [6], where emotional states of participants may be important components. One current, generic problem with argumentation schemes of [21] is that other than the premise-claim structure, they are largely unconstrained; to make a computationally satisfactory theory, some well-formedness conditions would have to be introduced.

We have here *presumed* the OCC and COO accounts of the structures of the emotions rather than providing them explicitly either as formulae or as argumentation schemes. It remains to be developed how to account for intensity, decay, and the role of *moods* which alter the parameters. Nor have we provided argumentation schemes for the spectrum of emotions. Similarly, our schemes may need to be enriched with other aspects of reasoning about the emotions that are relevant in a legal context. This said, argumentation schemes along the lines such as we have provided do seem plausible as representations of emotional arguments in legal settings; they also provide an extensible and flexible structure for further development.

7 Acknowledgements

References

1. Ashley, K.: Modelling Legal Argument: Reasoning with Cases and Hypotheticals. Bradford Books/MIT Press, Cambridge, MA (1990)
2. Atkinson, K., Bench-Capon, T.: Action-based alternating transition systems for arguments about action. In: AAAI'07: Proceedings of the 22nd national conference on Artificial intelligence. pp. 24–29. AAAI Press (2007)
3. Atkinson, K., Bench-Capon, T., Cartwright, D., Wyner, A.: Semantic models for policy deliberation. In: Proceedings of the Thirteenth International Conference on Artificial Intelligence and Law (ICAIL 2011). Pittsburgh, PA, USA (2011), to appear
4. Ben-Ze'ev, A.: Emotions and argumentation. Informal Logic 17, 1–11 (1995)
5. Bench-Capon, T.J.M.: Persuasion in practical argument using value-based argumentation frameworks. Journal of Logic and Computation 13(3), 429–448 (2003)

6. Bex, F.: Arguments, Stories and Criminal Evidence: A Formal Hybrid Theory. Springer, Dordrecht (2011)
7. Chakraborti, N., Garland, J.: Hate Crime: Impact, Causes and Responses. Sage (2009)
8. Elllott, C., Ortony, A.: Point of view: Reasoning about the concerns of others. In: Proceedings of the Fourteen Annual Conference of Cognitive Science. pp. 809–814. Cognitive Science Society, Bloomingto, Indiana (1992)
9. Kahan, D.: The anatomy of disgust in criminal law. Michigan Law Review, Vol. 96, No. 6, 1998. Michigan Law Review, Vol. 96, No. 6, 1998.(112), 1621–1657 (1998)
10. Lakoff, G., Johnson, M.: Philosophy In The Flesh: the Embodied Mind and its Challenge to Western Thought. Basic Books (1999)
11. Manolescu, B.: A normative pragmatic perspective on appealing to emotions in argumentation. Argumentation 20, 327–343 (2006)
12. Margulies, H.S.L. (ed.): Judicial Council of California Criminal Jury Instructions (2011). LexisNexis Matthew Bender (2010)
13. Micheli, R.: Emotions as objects of argumentative constructions. Argumentation 24, 1–17 (2010)
14. Nawwab, F.S., Bench-Capon, T., Dunne, P.: Exploring the role of emotions in rational decision making. In: Baroni, P., Cerutti, F., Giacomin, M., Simari, G. (eds.) Computational Models of Argument. Proceedings of COMMA 2010. pp. 367–378. No. 216 in Frontiers in Artificial Intelligence and Applications, IOS Press, Amsterdam (2010)
15. Ortony, A., Clore, G., Collins, A.: The Cognitive Structure of Emotions. Cambridge University Press (1988)
16. Steunebrink, B., Dastani, M., Meyer, J.J.: A logic of emotions for intelligent agents. In: Holte, R., Howe, A. (eds.) Proceedings of AAAI-07. pp. 142–147. AAAI Press., Vancouver, Canada (2007)
17. Steunebrink, B., Dastani, M., Meyer, J.J.: A formal model of emotions: Integrating qualitative and quantitative aspects. In: Mali, G., Spyropoulos, C., Fakotakis, N., Avouris, N. (eds.) Proceedings of the 18th European Conference on Artificial Intelligence (ECAI'08). pp. 256–260. IOS Press., Amsterdam (2008)
18. Velásquez, J.: When robots weep: Emotional memories and decision-making. In: Proceedings of American Association for Artificial Intelligence. pp. 70–75 (1998)
19. Walton, D.: The Place of Emotion in Argument. Pennsylvania State University Press (1992)
20. Walton, D.: A Pragmatic Theory of Fallacy. The University of Alabama Press (2003)
21. Walton, D., Reed, C., Macagno, F.: Argumentation Schemes. Cambridge University Press (2008)
22. Wyner, A., Bench-Capon, T., Atkinson, K.: Formalising argumentation about legal cases. In: Proceedings of the Thirteenth International Conference on Artificial Intelligence and Law (ICAIL 2011). Pittsburgh, PA, USA (2011), to appear