



Model of the State of Mind V1.7

Complement of the Deliverable “The Model of Reading” on the State of Mind

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Author: Alessio Antonini -
alessio.antonini@open.ac.uk

Executive Summary

This deliverable complements the deliverable D1 on “Model of Reading” (V1.6) by discussing the gaps concerning the definition of the State of Mind and describing an extended framework of concepts implemented from the V1.7 the Data model onward.

Contributors

Alessio Antonini	Knowledge Media Institute	alessio.antonini@open.ac.uk
François Vignale	Le Mans Université	francois.vignale@univ-lemans.fr
Guillaume Gravier	IRISA	guig@irisa.fr

Changelog

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On STATE OF MIND in the Data Model V1.6

The model of reading V1.6 introduces STATE OF MIND and a set of sub-concepts and relations. Following, the deliverable provides a summary of these concepts and clarifies their use.

Types of STATE OF MIND

The analysis of sources of reading experience highlighted several different types of cognitive response to reading. In the ontology of reading v1.6, we identified an open list of subtypes: JUDGMENT, EMOTION, AIM, ACHIEVEMENT, REMEMBRANCE, SELF-REFLECTION and readers' DISPOSITIONS.

In general, STATE OF MIND is Oriented toward the "self" (the reader) or an "external" entity, such as a fragment of content or a contingency of reading. In the reading ontology v1. Orientation is a feature of STATE OF MIND with possible values "self" or "external". Furthermore, a STATE OF MIND does have a Sentiment value: "positive", "negative" or "neutral".

The open list of possible types of STATE OF MIND can be sorted by considering a direct or indirect involvement of the activity of reading. Indeed, DISPOSITION are STATE OF MIND which do not emerge or guide directly the reading but indirectly affect the reader, e.g. literacy, political stand, social group, nationality. A DISPOSITION concerns the identity of a reader, his beliefs and skills of relevance for reading. Differently, the remaining types of STATE OF MIND are directly related to the activity of reading. The rest of the open list can be further sorted into three general categories:

- MEMORY, concerning the recalling of facts or events of which the reader has experience of
 - REMEMBRANCE
- FEELING, concerning the feeling response of the reader
 - EMOTION
- BELIEF, concerning ideas and concepts directly or indirectly conceived by the reader
 - JUDGMENT
 - AIM
 - ACHIEVEMENT
 - SELF-REFLECTION

Summarising, the STATE OF MIND can concerns multiple aspects, such as cognitive skills, beliefs, memories, feelings. The reader's mind includes all of the previous and more, and what we are able to capture are the changes fostered by reading and what the reader's self awareness can point out as relevant.

Reader's DISPOSITION(s)

The concept of DISPOSITION may include all the above, MEMORY, FEELING and BELIEF, but includes reader's skills and habits of relevance for reading.

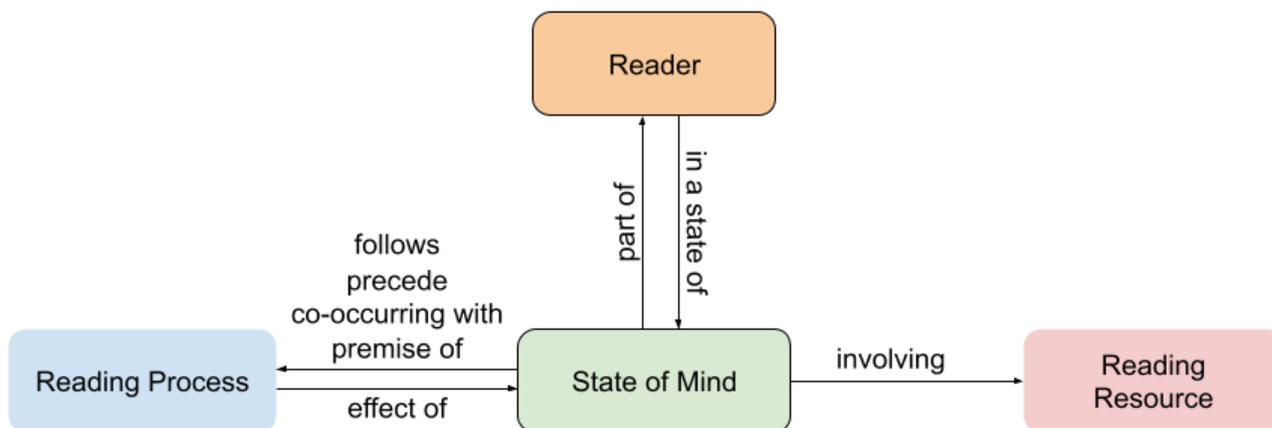
The ontology of reading V1.6 includes Habits as a feature of READER. HABIT was defined as the intensive description of the reader's reading processes, i.e. a synthesis of how a reader reads. As such, HABIT is a combination of beliefs grounded on previous experiences, and thus, it is a STATE OF MIND. Furthermore, the cognitive SKILL of a reader, e.g. language skills, analytical skills, concern also the STATE OF MIND.

In this framing, we can define DISPOSITION a type of STATE OF MIND not directly related to a specific instance of READING PROCESS, but to a class (defined by a subset of features). For instance, a HABIT can concern an activity, place, time, topic, author, such as bedtime stories, while on travelling at work or russian authors.

Summarising, DISPOSITION should be framed as a type of role of a STATE OF MIND and the types of STATE OF MIND should include HABIT and SKILL.

Relations of STATE OF MIND

In READ-IT conceptual model of reading experience, the concept STATE OF MIND represent the cognitive state of the reader. This concept is related to the READER, as state of the person engaged in a reading activity, to the READING PROCESS (abstraction of READING, READING SESSION and READING EXPERIENCE), and to the READING RESOURCE (abstraction of CONTENT and MEDIUM).



In the last formulation, READER is a state of the person. Thus, STATE OF MIND is part of of the READER. In the READ-IT ontology we express also the inverse relation READER “in a state of” STATE OF MIND.

An instance of STATE OF MIND should target one or more instances of READING RESOURCE. We represent this relation with STATE OF MIND “involving” “READING RESOURCE”, for instance a book, a sentence, a topic, a character, a story being target of a feeling, memory or belief.

Roles of STATE OF MIND

The relations between STATE OF MIND and READING PROCESS are more articulated. An instance of STATE OF MIND can “precede”, “follow” or “co-occurring with” a READING PROCESS. This temporal articulation between STATE OF MIND and READING PROCESS is related to causal relations between READING PROCESS and STATE OF MIND. Indeed, an instance of a STATE OF MIND can be “premise of” a READING PROCESS or a READING PROCESS can be “effect of” a STATE OF MIND. The combination of temporal and causal relations configure three roles of STATE OF MIND in relations with a READING PROCESS: PREMISE, EFFECT and OUTCOME.

	Roles of STATE OF MIND			
	DISPOSITION	PREMISE	EFFECT	OUTCOME
Temporal constraints	precedes / co-occurring with	precedes	follows	follows / co-occurring with
Causal constraints	not premise of / not effect of	premise of	effect of READING EXPERIENCE	effect of READING SESSION / effect of READING
Categories of STATE OF MIND	SKILL HABIT MEMORY FEELING BELIEF	MEMORY FEELING BELIEF	MEMORY FEELING BELIEF	MEMORY FEELING BELIEF

The articulation of the READING PROCESS used in the ontology of reading V1.6 include:

READING, as the whole reading activity including reading sessions and pauses, e.g. the reading of Moby Dick taking several months

READING SESSION, a continuative interaction with a READING RESOURCE, e.g. from opening to closing Moby Dick.

READING EXPERIENCE, the event of triggering a change in STATE OF MIND as effect of the reading activity and during a READING SESSION.

In this frame, READING and READING SESSION do have a duration and can include other READING PROCESSES. We generalise the READING and READING SESSION with the abstract class READING FRAME. A READING FRAME can have PREMISE(s) and OUTCOME(s) while READING EXPERIENCE is considered an atomic event occurring in the frame of a session and reading. Thus, concerning the READING EXPERIENCE, we consider only following EFFECT, i.e. immediate responses.

	READING PROCESS		
	READING FRAME		
	READING	READING SESSION	READING EXPERIENCE
precedes	DISPOSITION PREMISE	DISPOSITION PREMISE	Not Applicable
co-occurring with	EFFECT	EFFECT	
follows	OUTCOME	OUTCOME	EFFECT

	READING PROCESS		
	READING FRAME		
	READING	READING SESSION	READING EXPERIENCE
DISPOSITION	<i>precedes</i> OR <i>co-occurring</i> (if it <i>precedes</i> a READING SESSION)	<i>precedes</i>	N.A.
PREMISE	<i>precedes</i> OR <i>co-occurring</i> (if it <i>precedes</i> a READING SESSION)	<i>precedes</i>	N.A.
EFFECT	N.A.	N.A.	<i>follows</i>
OUTCOME	<i>follows</i> OR <i>co-occurring</i> (if it <i>follows</i> a READING SESSION)	<i>follows</i> OR <i>co-occurring</i>	N.A.

Framework of STATE OF MIND - V1.7

By considering the three roles, the first three categories of STATE OF MIND, and the orientation, we can attempt structuring the open list of types of STATE OF MIND and identify missing concepts (highlighted below with a *).

	FEELING		
Orientation	PREMISE	EFFECT	OUTCOME
self	EMOTION		

external	AFFECT*
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In this framing, we consider EMOTION the feeling toward the self and AFFECT all feelings oriented toward other things, i.e. relational feelings.

	MEMORY		
Orientation	PREMISE	EFFECT	OUTCOME
self	REMEMBRANCE	ASSOCIATION*	REMEMBRANCE
external			

In this framing, we consider REMEMBRANCE the recollection of memory concerning reading but fostered by the reader during the preparation to, the reasoning about a reading or as delayed effect of reading. On the other hand, the concept of ASSOCIATION concerns the recollection of memory directly fostered by the direct interaction with a READING RESOURCE (during and effect of reading), i.e. mental associations created during reading.

	BELIEF				
Orientation	PREMISE		EFFECT	OUTCOME	
self	AIM	REFLECTION	IMPRESSION*	AIM	REFLECTION
external	ACHIEVEMENT	JUDGEMENT	NOTION*	ACHIEVEMENT	JUDGEMENT

In this framing, AIM ACHIEVEMENT, REFLECTION and JUDGMENT are either a PREMISE or an OUTCOME of reading. On the other hand, the immediate response, i.e. effect of READING EXPERIENCE, to reading could be either an IMPRESSION or NOTION as immediate response to reading.

Conclusions

The presented framework of State of Mind V1.7 clarifies the use of the related concepts and highlights new concepts which did not emerge from the analysis of sources but logically derived from the V1.6 model. As for the previous version, the framing of the State of Mind is to be intended as a landscape to be filled by research partners and further developed in the context of case studies.

This update of State of Mind is been implemented in the stand-alone ontology of the Reading Experience Ontology available on the READ-IT GitHub repository (<https://github.com/eureadit/reading-experience-ontology>), data model V2.0+ (<https://github.com/eureadit/reading-experience-ontology/blob/master/data-model-v2.owl>).