

Look again at that one paragraph from [Strong and Efficient Cache Side-Channel Protection Using Hardware Transactional Memory](#) (2017 USENIX). I have parsed this paragraph (see [Part 3](#)) for clauses. Now I parse its system of Theme-Rheme, drawing your attention to all thematic materials in green.

	Theme		Rheme	
	grammatical Theme	topical Theme	expected Theme	
1		HTM		allows for the efficient implementation of parallel algorithms [27]
2		it		is commonly used to elide expensive software synchronization mechanisms [16, 63]
3	informally	for a CPU thread executing a hardware transaction	all other threads	appear to be halted
4	whereas	from the outside	a transaction	appears as an atomic operation
5		a transaction		fails if the CPU cannot provide this atomicity due to resource limitations or conflicting concurrent memory accesses
6	in this case	all transactional changes		need to be rolled back
7		to be able to detect conflicts and revert transactions	the CPU	needs to keep track of transactional memory accesses
8	therefore	transactional memory		is typically divided into a read set and a write set

9		a transaction's read set		contains all read memory locations
10		concurrent read accesses by other threads to the read set		are generally allowed
11	however	concurrent writes		are problematic
11'	and	depending on the actual HTM implementation and circumstances	[concurrent writes]	likely lead to transactional aborts
12	further	any concurrent accesses to the write set		necessarily lead to a transactional abort

The green marking puts the weave-function of Theme on display. In these thematic columns of the parse you see variation on the topic of Hardware Transaction. The clear tendency here is for progression of the paragraph itself to be matched by progression in detail of the one topic, and that effect is achieved through the interweave of Themes around the topic Hardware Transaction.

For example, clauses No.1 and No.2 quite predictably just foreground HTM. I mean, the paragraph really must start off by indicating what this is about, in the broadest of terms. But notice how from there the variation progresses. Already by clause No.3, the thematic material is quite complex: All three positions in the thematic columns fill. However, it is the topical Theme there (i.e., *for a CPU thread executing a hardware transaction*) that matters most because the topical Theme serves as the connector between this narrow topic of Thread and that broad topic of Hardware Transaction.

These first three clauses of the paragraph present a fine example of how a Theme serves to hook the clause in to the fabric of the weaving text.

This weave-function is performed by all the clauses, really, in their own ways, but I would draw special attention to clauses No.7 and No.11' because these are woven in to the paragraph in as complex a fashion as clause No.3 is woven in. But again, no Theme is privileged and all Themes attract our attention for how they (a) connect what has gone before and how they (b) foretell what will come after.

So, ultimately, it is this high functionality of the Theme which causes the Rheme to get overlooked. Basically, in the system of Theme-Rheme, the function of the Rheme is actually just to pick up and hold any thread of the weaving text which does not hook in tightly to the fabric of all preceding and subsequent clauses. In comparison to a Theme, the Rheme is small-time and ordinary.

Still, do let me be clear here. I am *not* saying that the material held by the Rheme is unimportant. Not at all. The material in the Rheme is as important as is the material in the Theme, just in a different way. In fact, to really appreciate the material held in the Rheme we need to shift perspectives out of the system Theme-Rheme and in to the system of Given-New.

First, I'll give this rapid summary of the perspective from inside the system Theme-Rheme. Really, it's the perspective of the writer. The contribution of Theme to text is really to make the text itself. What I mean is, the threading in of every next Theme is an action of arranging and ordering and structuring the broad topic. However, the material taken up in those Themes is normally not all that informative. Particularly the topical Theme will have become quite expectable and predictable by that point in the discourse, and really, that's just as it

should be, because the Theme is there to connect, remember? So, inasmuch as we can even talk about information in the Theme, we need to recognize that it is information intended to direct attention rather than to impart knowledge. The Theme is, from this perspective on its informational value, not informative but instead orientational. And that is why I say the perspective from inside the system of Theme-Rheme is the perspective of the writer.

The Theme-Rheme system serves a writer's aim of deciding what to and what not to say next. Just consider for a moment the role played by the writer in managing the full quantity of information in one single paper. In that role, the writer is really **the one who has all the information**. Of course, this is a sort-of abstraction, because no real writer actually *has* all the information. But in a sense, even real writers actually kinda do. I mean, it is logically and also practically necessary to assume that the authors of any particular paper in security and privacy do, in fact, possess all the details relevant to their paper. Any other way would mean that they couldn't write the paper, right? This is why I say that the role played by the writer is the role of information-possessor, and further, it is from this that I draw the conclusion that the Theme serves the writer in the task of weaving a text.

The writer's first view is to all the information available on the subject matter of the paper, but the second view – the critical view, the view that makes or breaks any paper – that view is to the selection from all the information just that which makes for good topic-material. This is an action of include-exclude, and by doing it, the writer greatly improves his or her clarity on where to put what and what to put at all. The action of Theme selection is the action of thinking across many flows of many

discourses in order to connect things up into the one flow of this one discourse called the paper. Really, every decision about every next Theme entails the content to include in the follow-on Rheme; therefore, from a writer's perspective, it is the Theme that is decisive, and the compliant Rheme just waits to pick up the details relevant to that chosen Theme. The best evidence for my position here is this: Which do you find more challenging, (a) finishing a sentence you have begun or (b) beginning a next sentence from scratch? As I've hopefully made clear, the beginnings of sentences are thematic. That's the location of every writer's management of informational sorting.

But where there be writers, there too will be readers, and it is the readerly perspective which runs the system dedicated to the management of informational value. In other words, the role of the reader is to have only that information which the topics provide; or, if you like, readers automatically trace the weave of a text, so a reader will always head in the direction he or she is sent. But the crucial action of the reader is to be searching, ever searching for why he or she should be sent that way. Because, unlike the all-knowing writer, a reader is a possessor of only partial information. Therefore, a reader's perspective on clauses is very different to a writer's perspective. A reader absorbs the progression of topics, really on a subconscious level, because the thing that the reader really cares to have is more informative, more telling, more detailed information. And it is to this end that another whole system has evolved in the grammar, and that system is the one I've already referred to, namely, the system of Given-New.

So, in Part 10, I will take on the dual subject of the reader and the Given-New.