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# AN INTERVIEW WITH PAUL FROMMER

## Fredrik Ekman

Constructed languages have been used for a long time in movies, but only since the 1980s have we seen a more regular use of languages constructed directly for the movies, Klingon being the most well-known early example. Lately, Paul Frommer's Na'vi for *Avatar* has received a good deal of attention. For the upcoming *John Carter* movie, based on Edgar Rice Burroughs' 1912 novel *A Princess of Mars*, Frommer has created a new language, based on the alien language in the novel and its sequels.

Burroughs is mostly known as the creator of Tarzan, but his science fiction stories have been extremely influential for the "sword and planet" genre, and are sometimes cited as part of the inspiration for movies such as *Star Wars* and *Avatar*.

The movie and novel are set on the planet Mars, as it was perceived in popular literature 100 years ago. In fact, Burroughs helped popularize (and partly create) the image of a dying planet populated by warring races of men and aliens. The planet is known as Barsoom by its inhabitants.

By expanding and formalizing the language from the novel that inspired *Avatar*, you could well say that Paul Frommer has come full circle. The following interview with Frommer was cunducted by e-mail at the end of January 2012.

*Fredrik Ekman:* **First of all, what do you call the language? Martian? Barsoomian? Something else?**

*Paul Frommer:* I've been calling it Barsoomian.

**Could you provide a sample phrase; something of your design that was used in the movie?**

Sure. Here's a Tal Hajus line that means, "When can I kill it, Jeddak?"

*Nar tu gheb nun thaala, Jeddak?*

The *gh* represents a scrapey sound, something like "Parisian r." (Linguists would call it a voiced velar fricative.) The double *a* in *thaala* is a long vowel, held roughly twice as long as the short *a* at the end. And the double *d* in *Jeddak* represents a "geminate" or long consonant—you hold this *d* longer than a "regular" one.

**Who contacted you to request the language? What were your instructions?**

My initial contact was Colin Wilson, Executive Producer on *Avatar* and Producer on *John Carter*. That contact led to a meeting with Andrew Stanton, the Director of *JC*.

After speaking with Andrew and understanding the scope of the project, it was clear that what I needed to do was develop a language that was well constructed and workable, that sounded interesting but that the actors could pronounce without too much difficulty, and that was consistent with all the linguistic material ERB had included in the 11-book Barsoom series.

**What were your initial feelings about the project?**

Of course I was delighted to have another major language assignment and the chance to work with Andrew. The challenge, I knew, would be the fact that I wouldn't be starting from scratch: there was already linguistic material in the Barsoom series. The guiding principle I used in developing the language was that unless there was a good reason not to, Barsoomian should be as consistent as possible with ERB's thoughts about it; that would respect the feelings of the fan base and help give the language consistency and integrity. The problem was that beyond about 400 words, Burroughs didn't give many specifics, so it would sometimes be necessary to guess what he had in mind.

**What background material were you given?**

I was sent all the books in the Barsoom series (I've read the first two cover to cover and started the third), and I also took a look at what fans had written about Barsoomian on the Internet. Perhaps the most useful resource, however, was John Flint Roy's *A Guide to Barsoom*, a real labor of love that I found invaluable. Roy had isolated all 420-or-so words ERB used in the series—mainly character and place names, but also a few measurement terms, numbers, plant names, etc.—which I entered into my database; that was a lot easier than having to comb through each of the 11 books to find the Barsoomian words!

**Language and linguistics aside, what did you think about the books?**

The books I read were imaginative, involving, and often exciting. I admired ERB's powers of description, the way he could make an alien landscape or creature come alive in vivid detail. I also found it interesting to see how his writing was sometimes a reflection of, sometimes a reaction to, the social attitudes of his time.

**In his books (especially the first two), Burroughs wrote that much of the communication on Mars is telepathic. How did you relate to that?**

I thought of telepathy and spoken language as separate. The spoken Barsoomian in the film is self-contained and doesn't rely on telepathy to get its meaning across.

**What existing languages inspired your design?**

That depends on whether you're talking about the phonetics and phonology—that is, the "sound system" of the language—or the morphology and syntax, i.e. the rules for forming words out of meaningful elements and combining them into phrases and sentences.

For the sound system, what guided me was ERB himself. The sounds and combinations he used in his 400+ words formed the basis of the phonetics and phonology. However, since Burroughs's spelling was inconsistent and not always

clear, some of this was guesswork. For example, why did he use *ph* in some places and *f* in others—did he intend a difference in sound? What did he mean by *ch*—the sound in *church* or the one in *Bach* and *Chanukah*? What does *tj* indicate (used once in the word *Tjanath*)? How about *gh* as in *Ghasta* and *Ghron*—is that different from a plain *g*? What did he mean by *hn*, as in *Dihn*? Why do some words start with *z* and others *x*—did he mean two different sounds or only one (the z-sound)? In words like *Pnoxus* and *Ptarth*, is the *p* silent or pronounced? So I had to make decisions about all such things.

For the morphology and syntax, however, I was pretty much on my own. The only sentence I discovered in the entire Barsoom series was the one-word imperative, "*Sak!*" meaning "Jump!" Some of the grammatical elements I wound up using were inspired by things in the languages I was familiar with. For example, I indicated possession in Barsoomian the way it's done in Malay and Indonesian: the possessor follows the thing possessed with no special marking. So "John's house" is the equivalent of "house John." I also found use for a word that marks definite direct objects, the way Hebrew does.

### What was the first idea that came into your mind for this language? How did you initially envision the character and identity of the language?

The first idea, which remained my guiding principle, came directly from *A Princess of Mars*. In speaking about Barsoomian, John Carter says: "The Martian language . . . is extremely simple, and in a week I could make all my wants known and understand nearly everything that was said to me." Now of course the possibility of mastering a language in a week exists, at least for now, only in fantasy and science fiction; nevertheless, I took ERB's "extremely simple" seriously. I developed a very simple, transparent grammar for Barsoomian, which was quite a contrast from Na'vi!

As for the "character" of the language, I wanted something that would feel natural in the mouths of *all* the inhabitants of Barsoom, since as John Carter explains in *PM*, "All Barsoomians speak the same tongue from the ice-clad south to the ice-clad north… Only in the valley Dor…is there supposed to be a different language spoken."

### Did you strive to make it a human or an alien language? How does that choice manifest itself?

Well, given that John Carter proves so adept at Barsoomian, I didn't think it should be very different from a human language. Anything truly alien probably couldn't be learned, at least not with the rapidity JC mastered it. And of course the language had to be one the actors could pronounce. So there's little if anything in Barsoomian that isn't found in some actual human language.

For example, in keeping with the simplicity guideline, I chose not to use a case system for distinguishing grammatical relations, the way Latin and Russian do, but rather to rely on word order, as we do in English. Now in terms of Subject, Object, and Verb, there are six logically possible orders: SVO, SOV, VSO, VOS, OSV, OVS. The first three are the orders commonly found in human languages. (Klingon, by the way, uses OVS, which on earth is extremely rare. Na'vi, with its case system, has very free word order.) I chose VSO for Barsoomian, the third most common word order in human languages. (Languages with predominant VSO order include Classical Hebrew and Arabic and the Celtic languages.)

## So what are the main simplifications in terms of syntax and morphology?

There's not much inflectional morphology—no noun cases, not even a possessive case; little agreement phenomena in verbs; no grammatical gender; only a few inflectional suffixes. The word order, as I mentioned, is straightforward VSO, and modifiers consistently follow their heads.

## What are the most interesting (in your opinion) grammatical features?

Well, as I said, the morphology and syntax of Barsoomian are very simple. Perhaps the most interesting feature is the pronominal system, where there are distinct cases for subject and object (akin to English I/me, he/him, we/us, etc.). To form the objective case, you take the initial consonant of the pronoun and repeat it at the end of the word. So I = *tu*, me = *tut*; he = *ki*, him = *kik*. Then to form the plurals of these pronouns, you simply "voice" the unvoiced consonants—in these examples, *t* becomes *d* and *k* become hard *g*. So we = *du* and us = *dud*. I rather like that.

## How large is the lexicon?

It's quite small. The lexicon was driven by the needs of the script. It covers everything I had to translate but doesn't go very far beyond that.

## Could you resist the temptation to include some Easter eggs for Na'vi speakers?

I did resist that temptation. ☺ There are no Easter eggs in Barsoomian—at least not that I'm aware of.

## Disney has revealed an alphabetic script for the language on their web site. Were you in any way involved with the creation of that script?

No, I wasn't. I had nothing to do with that alphabet.

*The 26 letters and 10 digits of Disney's Barsoomian script.*

**If you had constructed a Barsoomian script, how would you have done it?**

Well, first of all we should note that although the spoken language of Barsoom is universal, many different writing systems are found on the planet: "No two nations have the same written language, and often cities of the same nation have a written language that differs greatly from that of the nation to which they belong." So lots of approaches to Barsoomian script are possible.

There's a daunting array of writing systems for human and human-like languages. (The Wikipedia article "List of writing systems" is eye-opening.) For Barsoomian, I think an alphabetic system, with separate symbols for consonants and vowels, is the easiest and most efficient. But an important decision that needs to be made is whether the system is supposed to have been designed "scientifically" through a perceptive analysis of the language (like the Korean alphabet, for example) or whether it evolved over time in a less deliberate way.

As a linguist designing an alphabetic script, I'd aim for a system free of ambiguity and indeterminacy. That is, if you see something in written form, you know for certain how to pronounce it, and if you hear something, you know for certain how to write it down. That requires an analysis of the distinctive sounds of the language, the general principle being that each distinctive consonant and vowel gets its own symbol. But beyond that, interesting questions arise. For example, take the sounds *p*, *t*, *k*. Those are "unvoiced"—they're produced without vibration of the vocal cords. If you voice them, you get *b*, *d*, *g*. Now should the written symbols reflect that fact? For example, should the symbols for *b*, *d*, *g* be derived from the ones for *p*, *t*, *k* in the same way, with the same modification? That's a possibility!

One thing I'd like to see for Barsoomian script is a length marker. Since Barsoomian distinguishes between long and short consonants as well as long and short vowels, the same length marker could serve both purposes, for example turning *a* into *aa* and *d* into *dd*.

**Who owns the rights to your language?**

I'm not up on all the legalities, but as far as I know it's Walt Disney Studios.

**Do you know if there are currently any plans to publish a Barsoomian grammar or dictionary?**

None that I know of.

**I have heard that you did not work directly with the actors. Could you describe the process?**

That's correct—I had no direct contact with the actors. I had been invited to "Thark Camp" in London in January 2010 but couldn't attend due to other obligations. All my direct contact was with Andrew Stanton and the dialect coaches. I provided translations of all the required lines, in a spelling system consistent with the one ERB had used but with stressed syllables underlined. I also recorded mp3 files, where I spoke the lines at three speeds—first slowly, then faster, then at normal conversational speed.

**Have you heard the actors voice your language?**

No, I haven't yet heard the actors speaking the language. As I said, I interacted directly with the dialect coaches, who in turn worked with the actors. I'm very much looking forward to the film and hearing the finished product! The premiere is coming up, so it won't be long now.

**Have you done any work on the language after the shooting was completed, e.g. for tie-in products?**

No, I haven't.

**In your opinion, what is the reason that constructed languages have become more common in movies during the past few decades?**

Well, the main impetus, I think, was Klingon. It's a well-constructed—and complex!—language put together by a bona fide linguist, Marc Okrand, and it's still being studied by fans after something like 25 years. After Klingon, unanalyzable gibberish just didn't cut it. Besides, I think some moviegoers can tell whether or not a language sounds consistent, even if they don't consciously understand a word. Such consistency can add to the sense of realism.

**While making your two movie languages, have you learned anything about natural languages?**

More than anything, it's been driven home to me how complicated natural languages are! You can come up with general principles, but when you get down to the details and try to use the language for genuine communication, you discover how many little decisions have to be made along the way—how much territory a particular word should cover, how a particular grammatical structure should function in an unanticipated context, things like that. What we as speakers of natural languages do every day of our lives without even thinking about it is absolutely extraordinary.

**The Avatar fans really took Na'vi to their hearts. Do you see that something similar could happen with Barsoomian? Is it anything you wish for?**

That's hard to say. Of course I hope the language is well received by the fans. Beyond that we'll have to see what happens.

**Do you know if your services will be required for a possible sequel?**

I don't know. But of course I hope so!

**Thank you very much for your time and effort!**