Proto-Tocharian had among other consonants the three voiceless stops /p/, /t/, and /k/. There was also /s/, but no other voiceless fricatives or affricates! PT had a basic five-vowel system /i/, /u/, /e/, /o/ and /a/, with contrasting short and long varieties of each. The symbol <ä> used below represents a high central vowel (like English “barred i” [i]). The symbol <š> represents a voiceless palatal fricative, and <c> a voiceless palatal affricate.

Analyze the following changes first in structuralist terms and then in terms of generative rule change. Assume that the changes took place in the order given.

1. *t → *c /__V[front]  e.g. *-onti → *-onci (present third plural ending) *temp- → *cemp- ‘be able’
2. *e → ä  e.g. *cemp → cämp-
3. *i & *u → *ä  e.g. *-onci → oncä *tupro- → täpro- ‘high’
4. *k → š /__e:  e.g. *ke:rwo- → *še:rwo- ‘hunter’
5. *e: & *o → e  e.g. *še:rwo- → šerwe- *komo- → keme- ‘tooth’