Underspecification and contextual faithfulness in analysing opacity with OT and rule-based serialism

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Abstract: This paper discusses how the new analysis of self-destructive feeding (SDF) sheds light on the competition between rule-based serialism and OT. It was shown by Wang (2025) that SDF could be reduced to allomorph optimisation with appropriate constraints in Parallel OT, suggesting that OT may not be outperformed by rule-based serialism in the respect of analysing certain overapplication opacity. This paper proposes that rule-based serialism is still better insofar that the nature of rule-based phonology requires fewer analytical tools in its theoretical framework.

Keywords: *opacity*, *self-destructive feeding*, *underspecification*, *Parallel OT*, *rule-based serialism*

1 Background[1]

The long-standing debate about whether rule-based serialism (Chomsky & Halle 1968) or Optimality Theory (OT; Prince & Smolensky 1993) is the more appropriate theory of phonology has always concerned opacity, a phenomenon where the application or applicability of a rule is not straightforwardly recoverable from the SFs (Kiparsky 1973). Parallel versions of OT has been shown unable to account for opacity – overapplication opacity, in particular – because some constraints are not surface-true (Baković 2007, McCarthy 1999, 2003, Vaux 2008). Self-destructive feeding (SDF) is a type of overapplication opacity that poses such problems for Parallel OT.

[1]Unless otherwise stated, the Turkish data used in this paper are cited from the Turkish Electronic Living Lexicon (TELL; `http://linguistics.berkeley.edu/TELL/`) and the Javanese data come from personal elicitations and the SEAlang Library Javanese Resources (`http://sealang.net/java/corpus.htm`).

Defined as an interaction where "an earlier rule feeds a later rule that in turn crucially changes the string such that the earlier rule's application is no longer justified" (Baković 2007, 2011: 59), SDF has been documented in Turkish (1, 2), Javanese (3) and Japanese (4). Take Javanese (3) for example. The first rule n-deletion deletes [n] to create the environment for the second rule h-deletion to apply, but the application of h-deletion removes a crucial part of the structural description of n-deletion. Hence, the application of n-deletion is no longer justified and the two rules are in a SDF relationship.

(1) SDF with vowels in Turkish (adapted from Sprouse 1997)

	UR	a. /bebek+n/	b. /ip+n/	c. /bebek+i/
Epenthesis:	∅ ⟶ i / C_C#	i	i	
Velar Deletion:	k/g ⟶ ∅ / V_+V	∅		∅
	SF	[bebein]	[ipin]	[bebei]

Glosses: (1a) 'your baby', (1b) 'your rope', (1c) 'baby (ACC)'

(2) SDF with consonants in Turkish (adapted from Kenstowicz & Kisseberth 1979)

	UR	a. /ajak+sɯ/[2]	b. /tʃan+sɯ/	c. /bebek+i/
Elision:	s/j ⟶ ∅ / C_	∅	∅	
Velar Deletion:	k/g ⟶ ∅ / V_V	∅		∅
	SF	[ajaɯ]	[tʃanɯ]	[bebei]

Glosses: (2a) 'his foot', (2b) 'his bell', (2c) 'baby (ACC)'

(3) Javanese (Lee 1999, 2007)

	UR	a. /omah+ne/	b. /kulit̪+ne/	c. /səkolah+an/
n-deletion:	n ⟶ ∅ / C_	∅	∅	
h-deletion:	h ⟶ ∅ / V_V	∅		∅
	SF	[omae]	[kulit̪e]	[səkolaan]

Glosses: (3a) 'the house', (3b) 'the skin', (3c) 'school building'

(4) Japanese (Hall, Jurgec & Kawahara 2018, Poser 1988)

	UR	a. /kaw+ru/	b. /tob+ru/	c. /iw+e+ru/
Continuant Deletion:	[+cont] ⟶ ∅ / C_	∅	∅	
h-deletion:	w ⟶ ∅ / _[−low]	∅		∅
	SF	[kau]	[tobu]	[ieru]

Glosses: (4a) 'to buy', (4b) 'to fly', (4c) 'can say'

Baković (2007), Hall, Jurgec & Kawahara (2018), and Lee (1999, 2007) attempted to analyse SDF with Parallel OT but the analyses were somehow unsatisfactory. Wang (2025) provided a Parallel OT analysis by incorporating the underspecification theory (Kiparsky 1993) and

[2] This example was presented as /ajak+sɯ/ in Kenstowicz & Kisseberth (1979) and Baković (2007), but /ajag+sɯ/ in Baković (2011). I have chosen /ajak+sɯ/ based on the data in the Turkish Electronic Living Lexicon (TELL).

contextual faithfulness (Beckman 1998, Lombardi 1999, 2001, Steriade 2009, Wilson 2001, a.o.), which seems to suggest that Parallel OT is not outperformed by rule-based serialism any more. In this paper, I argue that rule-based serialism still has advantages in the sense that it requires fewer theoretical assumptions in its toolbox.

2 How the Parallel OT analysis works

This section provides an overview of the Parallel OT analysis proposed in Wang (2025). Section 2.1 explains the motivations for incorporating underspecification (Kiparsky 1993) and contextual faithfulness (Beckman 1998, Lombardi 1999, 2001, Steriade 2009, Wilson 2001, a.o.) in the OT proposal. Section 2.2 shows how the proposal works.

2.1 Motivations

2.1.1 NDEB & underspecification

The main reason for employing underspecification is that all SDF interactions involve at least one process that is non-derived environment blocking (NDEB), which refers to cases where a phonological process is blocked unless the structural description is morphologically or phonologically derived (Kiparsky 1982, 1993). The classic example comes from Finnish (5), where Assibilation only takes place at morpheme concatenation boundaries (5a) or after the application of another phonological process like Vowel Raising (5b). (5c) undergoes neither rule because the environment of neither is satisfied. The word-initial /t/ in (5d) does not assibilate, although it appears before /i/, because it is neither at a morpheme boundary (i.e., a morphologically-derived environment) nor in front of a high vowel derived by other phonological rules (i.e., a phonologically-derived environment).

(5) Finnish Assibilation

	UR	a. /halut+i/	b. /vete/	c. /sata/	d. /tila/
Vowel Raising:	e ⟶ i / _#		i		
Assibilation:	t ⟶ s / _i	s	s		
	SF	[halusi]	[vesi]	[sata]	[tila]

Glosses: (5a) ‘wanted’, (5b) ‘water’, (5c) ‘hundred’, (5d) ‘order’

Interestingly, out of the seven processes in the aforementioned SDF cases, five are cases of NDEB. Elision and Velar Deletion in Turkish, n-deletion and h-deletion in Javanese and Continuant Deletion in Japanese only apply at morpheme concatenation boundaries, as shown in Table 1. Only Epenthesis in Turkish and w-deletion in Japanese are not NDEB. Turkish bans flat or rising sonority in coda positions (Clements & Sezer 1982) so Epenthesis takes place whenever such illegal sequences exist (Sprouse 1997). [w] + non-low vowel sequences are absent in Japanese in general, except for some loan words (Hall, Jurgec & Kawahara 2018: 604). Because each interaction includes at least one NDEB rule and all the rules involved are only locally adding or removing segments, all SDF cases are inevitably found at morpheme boundaries.

Turkish	UR	SF	Gloss
Elision	/tʃan+sɯ/	[tʃanɯ]	‘his bell’
	/isjan/	[isjan]	‘rebel’
	/iksiɾ/	[iksiɾ]	‘potion’
Velar Deletion	/bebek+i/	[bebei]	‘baby (ACC)’
	/avukat/	[avukat]	‘lawyer’
Javanese	**UR**	**SF**	**Gloss**
n-deletion	/kulit̪+ne/	[kulit̪e/]	‘skin (DEF)’
	/muŋgʊhne/	[muŋgʊhne]	‘supposing’
h-deletion	/səkolah+an/	[səkolaan]	‘school building’
	/dihin/	[dihin]	‘first’
Japanese	**UR**	**SF**	**Gloss**
Continuant Deletion	/tob+ru/	[tobu]	‘fly (INF)’
	/nenrei/	[nenrei]	‘age’

Table 1 NDEB processes in SDF

Underspecification is hence adopted to account for the NDEB feature of rules, because Rasin (2023) showed that underspecification is the only theory that accounts for NDEB without getting puzzles of persistent blocking, blocking within suffixes, and non-contrastive trigger (see Rasin 2023: sec. 4 for more details). The key is that some segments are underspecified for certain features while others are fully-specified in the UR, and phonological rules are feature-filling processes that only apply to underlyingly underspecified segments (Kiparsky 1982).

Wang (2025) further proposed that only alternating segments are underspecified and non-alternating segments are always fully-specified, as argued by the Alternation-sensitive Lexicon Optimisation theory (Inkelas 1995, 2000). So, the underspecified segments in the UR of SDF cases are as follows (6), represented with capital letters:

(6) Underspecification representations for all SDF examples

Turkish:	a. /bebeK+In/	Javanese:	c. /omaH+Ne/
	b. /ajaK+Sɯ/	Japanese:	d. /kaW+Ru/

The feature to underspecify is the linkage between the segment on the melodic tier and the autosegmental C/V slots on the skeletal tier, analogous to the proposal for Kiparsky’s (1993) Finnish Consonant Gradation. The reason for choosing this proposal is that SDF always concerns segment ~ ∅ alternations and Kiparsky’s (1993) proposal indeed uses the linking and delinking between a consonant and a C slot to determine a consonant’s presence or absence, which is suitable for SDF. So, the SDF examples have their underspecified segments not linked to C or V slots but fully-specified ones linked to skeletal slots (7).

(7) Autosegmental underspecification representation for all SDF examples

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             C V C V C   V C                  V C V C   C V
             | | | |       |                  | | |       |
Turkish:  a. b e b e K + I n   Javanese:  c. o m a H + N e
             V C V C   C V                    C V C   C V
             | | |       |                    | |       |
          b. a j a K + S ɯ     Japanese:  d. k a W + R u
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2.1.2 Consonant cluster reduction & contextual faithfulness

The adoption of contextual faithfulness constraints is mainly to account for the suffix-initial consonant or vowel alternations in Turkish, Javanese and Japanese. On the one hand, the first rule in each interaction (i.e., vowel insertion rule or consonant deletion rule) always aims to resolve a consonant cluster (Wang 2025). However, if one of the consonants in an intervocalic cluster C_1C_2 should be removed, C_1 is more likely to be removed than C_2 crosslinguistically because of C_1's reduced perceptibility (Wilson 2001). But it is always C_2 that gets removed in these three rules, as shown in Table 2. Traditional literature on allomorphy in these languages (van der Hulst & van de Weijer 1991, Kurisu 2012, Lee 1999, a.o.) and observations of the data also show that consonant-initial suffixes [-n], [-sɯ], [-ne] and [-ru] surface after vowel-ending roots, and the vowel-initial suffixes [-in], [-ɯ], [-e] and [-u] appear after consonant-ending roots. Wilson (2001) attributed these "restricted exceptions" to the suffixal status of C_2, because segments in the root have a special faithfulness requirement (Beckman 1998, Casali 1997, McCarthy & Prince 1995, Zoll 1998).

		Gloss	Root UR	Suffixation	SF
Turkish	a. alay	'regiment'	/alaj/	alaj+sɯ	[alajɯ]
	b. karar	'decision'	/kaɾaɾ/	kaɾaɾ+sɯ	[kaɾaɾɯ]
	c. çan	'bell'	/tʃan/	tʃan+sɯ	[tʃanɯ]
	d. gülüş	'smile'	/gylyʃ/	gylyʃ+sɯ	[gylyʃɯ]
	e. top	'ball'	/top/	top+su	[topu]
Javanese	a. bénér	'right'	/bener/	bener+ne	[benere]
	b. béring	'unbalanced'	/beriŋ/	beriŋ+ne	[beriŋe]
	c. tégés	'significance'	/teges/	teges+ne	[tegese]
Japanese	a. shir	'to know'	/ʃir/	ʃir+ru	[ʃiru]
	b. shin	'to die'	/ʃin/	ʃin+ru	[ʃinu]
	c. hanas	'to speak'	/hanas/	hanas+ru	[hanasu]

Table 2 Consonant reduction rules remove C_2

On the other hand, Turkish, Javanese and Japanese all have a strong preference for the CV syllable structure (van der Hulst & van de Weijer 1991, Vance 2008, Yip 1989). So the suffix-initial alternations above could be interpreted as the result of pursuing the CV-alternating pattern by preserving the segments that already form a CV syllable in the UR. /I/ is underlyingly between two consonants in /bebeK+In/, and /S/, /N/ and /R/ are underlyingly between two vowels when they are attached to vowel-ending roots, regardless of whether their neighbours are fully-specified. Removing these segments in turn destroys the preferred syllable structure, which is already in place.

Combining these two factors, it can be concluded that (1) languages exhibiting SDF patterns strongly prefer CV syllables, and (2) to maximally keep the CV-alternating pattern, these languages choose to delete certain "unprotected" segments. The idea to protect a certain pattern in the UR, namely contextual faithfulness (Beckman 1998, Lombardi 1999, 2001, Steriade 2009, Wilson 2001), is therefore adopted. The kind of constraints used by Wang (2025) were the ones developed by Steriade (2009) in her P(erceptibility)-map theory. Such constraints like MAX/_*K* (where *K* stands for the context) aim to preserve segments in certain UR environments. Segments that already contribute to the CV-alternating pattern are preserved in these languages (Wang 2025).

2.2 Proposal

Based on the aforementioned theories, a list of constraints (8) were drawn by Wang (2025) to account SDF and its accompanying characteristics in Parallel OT. The tableaux in Table 3 to 6 illustrate how the proposal works with the Javanese example.

(8) a. SPECIFY: Assign one violation (AOV henceforth) for each segment that is not linked to a C/V slot (cf. SPECIFY[T] in Myers 1997: 861 and Zoll 2003: 241).
   b. MAX_{full}: AOV for each underlying fully-specified segment removed[3].
   c. *VkV (for Turkish): AOV for each [k] or [g] between two vowels.
   *VhV (for Javanese): AOV for each [h] between two vowels.
   *w[−low] (for Japanese): AOV for each [w] followed by a non-low vowel.
   d. MAX-V/C_C: AOV for each vowel between two consonants in the input that is deleted in the output.
   MAX-C/V_V: AOV for each consonant between two vowels in the input that is deleted in the output.
   e. DEPLINK: AOV for each association line added between a segment and a C/V slot (cf. NOLINK[place] in McCarthy 2008: 278).
   f. MAX: AOV for each segment removed.

This analysis reduced SDF to the relative ranking between three constraints: SPECIFY ≫ DEPLINK ≫ MAX. For an underspecified segment, the best solution is to remove it completely (violating MAX), so as to avoid violations of more highly ranked SPECIFY and DEPLINK. Underspecified segments are only preserved when their preservation contributes to a more harmonic phonologically structure (e.g., the CV syllable structure) or word-edge alignment (as in Table 8). An additional constraint for word-edge alignment is also needed (9).

(9) ANCHOR-W-IO: AOV for each misaligned input-output word edge (McCarthy & Prince 1993, 1995).

[3] Note that MAX_{full} and MAX penalise the complete removal of a segment instead of the delinking between a segment and a C/V slot.

/omaH+Ne/	Specify	Max$_{\text{full}}$	*VhV	Max-C/V_V	DepLink	Max
[0.5ex] a. ☞ omae						**
b. omane					*!	*
c. omahne					*!*	
d. omahe			*!		*	*
e. omaHNe	*!*					

Table 3 Javanese SDF accounted for

/səkolaH+an/	Specify	Max$_{\text{full}}$	*VhV	Max-C/V_V	DepLink	Max
[0.5ex] a. ☞ səkolaan				*		*
b. səkolahan			*!		*	
c. səkolaHan	*!					

Table 4 h-deletion: underspecified /H/ are removed

/kulit̪+Ne/	Specify	Max$_{\text{full}}$	*VhV	Max-C/V_V	DepLink	Max
[0.5ex] a. ☞ kulit̪e						*
b. kulit̪ne					*!	
c. kuline		*!			*	*
d. kulie		*!				**
e. kulit̪Ne	*!					

Table 5 n-deletion: takes place after consonant-ending roots

/dihin/	Specify	Max$_{\text{full}}$	*VhV	Max-C/V_V	DepLink	Max
[0.5ex] a. ☞ dihin			*			
b. diin		*!		*		*

Table 6 NDEB: fully-specified /h/ are not removed

In brief, the NDEB and root faithfulness phenomena are captured by the contrast between underlyingly under- and fully-specified segments. Since the underspecified segments that can undergo alternations are always on the edge of a morpheme, these processes are necessarily NDEB. Max$_{\text{full}}$ $\gg$ Max implies that the deletion of a fully-specified segment leads to a more severe consequence than that of an underspecified segment. The consonant cluster reduction

/kopi+Ne/	Specify	Max_{full}	*VhV	Max-C/V_V	DepLink	Max
[0.5ex] a. ☞ kopine					*	
b. kopie				*!		*
c. kopiNe	*!					

Table 7 Intervocalic /N/'s correctly retained

/omaH/	Specify	Anchor-W-IO	DepLink	Max
[0.5ex] a. ☞ omah			*	
b. oma		*!		*
c. omaH	*!			

Table 8 Example: Correct SFs derived for Javanese roots (only crucial constraints shown)

observed is captured by the contextual faithfulness constraints outranking DepLink and Anchor-W-IO so intervocalic consonants in the UR can be preserved. It also needs to be outranked by the markedness constraint because data in Table 4 show that underspecified segments on morpheme edges, even though they contribute to the CV alternating pattern, are still removed to avoid violation of markedness constraints. Consequently, in a consonant cluster where C_1 in the root is fully-specified but C_2 in the suffix is underspecified, the second consonant in the suffix gets deleted because it violates the fewest constraints.

One of the advantages of this proposal is that it makes SDF pose no problem to Parallel OT, so modified (sometimes serial) versions of OT are no longer needed, including Sympathy (Lee 1999, McCarthy 1999) and OT with Candidate Chains (OT-CC; McCarthy 2006) for Javanese, as well as the turbidity theory (Goldrick 2000) for Turkish (Baković 2007).

A more implicit consequence of this proposal, which Wang (2025) did not mention, is that it gives Parallel OT more advantages in the competition between OT and rule-based serialism. As argued in Section 1, the inability to account for overapplication opacity like SDF is a major drawback of Parallel OT as an appropriate theory for phonological grammar. If SDF does not pose challenges to Parallel OT any more, Parallel OT is thus less disadvantaged in the serialism-parallelism debate.

3 In rule-based serialism

Last section has demonstrated how Parallel OT manages to account for SDF with a new proposal using underspecification and contextual faithfulness, suggesting at least that Parallel OT is no longer a less appropriate theory for SDF than rule-based serialism. In this section, I argue that this success does not necessarily indicate the superiority of OT and rule-based serialism still outperforms OT, because rule-based serialism eliminates this type of opacity after adopting underspecification *only*.

As argued by Wang (2025), there are three central tenets of her proposal. I argued that they can be reduced to two as shown in (10):

(10) a. NDEB effects and the atypical resolution to consonant cluster are the result of the contrast between fully- and underspecified segments;
b. Underspecified segments only surface when they contribute to a more harmonic phonological pattern – in this case, syllable structure and word-edge alignment.

It can be seen that these points are both based on the assumption of underspecification and aim to determine when an underspecified segment sppear on the surface. (10b) is in fact more essential and (10a) is a by-product of (10b) because of the distribution of underspecified segments in Turkish, Javanese and Japanese. Since underspecified segments tend to appear at morpheme boundaries and fully-specified segments appear morpheme-medially in these languages, NDEB effects are observed. When a fully-specified root segment precedes an underspecified suffix segment, the suffix-initial consonant in the cluster is removed.

Closer observation actually shows that the effects of contextual faithfulness constraints are implied by these two principles. Under these principles, the rules in SDF can be changed from segment deletion or insertion rules into those determining the appearance of underspecified segments as in Table 9.

	Old	**New**
Turkish vowel-SDF:	∅ ⟶ i / C_C# k/g ⟶ ∅ / V_V	I ⟶ i / C_C K ⟶ k / _#
Turkish consonant-SDF:	s/j ⟶ ∅ / C_ k/g ⟶ ∅ / V_V	S/J ⟶ s/j / V_V K ⟶ k / _#
Javanese:	n ⟶ ∅ / C_ h ⟶ ∅ / V_V	N ⟶ n / V_V H ⟶ h / _#
Japanese:	r ⟶ ∅ / C_ w ⟶ ∅ / _[−low]	R ⟶ r / V_V W ⟶ w / _#

Table 9 New rules with using underspecification

As the nature of rule-based phonology dictates that rules specify how URs are mapped onto SFs, the preservation of intervocalic consonants and interconsonantal vowels are incorporated into the rules determining the presence of these underspecified segments. The rule making underspecified segments fully-specified, which is a necessary process when the underspecification theory is used, has the effect of preserving such segments. Unlike SPECIFY, MAX_{full} and DEPLINK whose existence crucially depends on the assumption of underspecification, contextual faithfulness constraints are independent and can be applied to any UR in any context necessary – it just happens to be intervocalic or interconsonantal underspecified segments in these SDF cases. In other words, rule-based serialism can achieve the same results as Parallel OT does without formally incorporating the idea that segments in certain contexts are less prone to changes.

To illustrate my point my clearly, imagine a language called "pseudo-Javanese" with the two rules in the left column of Table 10, written with fully-specified segments. Pseudo-Javanese also resembles Javanese in the sense that NDEB effects also exist. Its crucial difference from Javanese is that the second rule with [t~s] alternation – similar to that in Finnish Assibilation – cannot be expressed in contextual faithfulness once written with underspecification, because the UR /T/ lacks a feature that stays "faithful". A /T/ → [s] change fills in a [+cont] feature and a /T/ → [t] change fills in a [−cont] feature. The UR /T/ has neither [+cont] or [−cont] to remain unchanged[4]. In contrast, rules that change underspecified segments to fully-specified ones, without reference to keeping certain features constant, can still derive the correct SF (see Table 10).

Old	
UR	/arat+ni/
n ⟶ ∅ / t_	∅
t ⟶ s / _i	∅
SF	[arasi]

New[5]	
UR	/araT+Ni/
N ⟶ n / ¬t_	
T ⟶ t / _¬i	
N ⟶ ∅	∅
T ⟶ s	s
SF	[arasi]

Table 10 Pseudo-Javanese old and new rule interactions

In brief, rule-based serialism can use rules that determine whether an underspecified segment should surface to derive the correct SFs, without the aid of contextual faithfulness. The process of making underspecified URs fully-specified is necessary if one adopts the theory of underspecification, and the rules that seem to implement the idea of contextual faithfulness in SDF cases simply have environments that coincide with those viable contextual faithfulness constraints preserving syllable structure, and keeping a feature constant is not required for underspecification rules. Therefore, rule-based serialism arguably achieves the same effects as Parallel OT does with only underspecification in its toolbox. Along with the fact that rule-based serialism dispenses the need of ordering rules to derive the correct SF and "eliminates" SDF as in Table 11 (Wang 2025), I argue that it still provides a more elegant analysis than parallelism.

4 Conclusion

This paper discusses how a new analysis of SDF contributes to the debate about whether rule-based serialism or OT is the more suitable theory for phonological grammar. After reviewing the analysis employing underspecification and contextual faithfulness which successfully

[4]This problem is similar to the P-Map's Input Problem (PMIP) pointed out by McCarthy (2009).

[5]The rules in this table are only written in non-standard format for the sake of simplicity. One could argue that the standard rules are overcomplicated. But the corresponding contextual faithfulness constraints, if exist, are also complicated and over-specific, as pointed out by Wang (2025) as a drawback of the constraints in Hauser & Hughto (2020). So I will not make this a valid aspect to compare serialism and parallelism.

UR	/omaH+Ne/	UR	/omaH+Ne/
N ⟶ n / V_V		H ⟶ h / _#	
H ⟶ h / _#		N ⟶ n / V_V	
N ⟶ ∅	∅	H ⟶ ∅	∅
H ⟶ ∅	∅	N ⟶ ∅	∅
SF	[omae]	SF	[omae]

Table 11 Ordering of the two new rules no longer matters, shown with Javanese

accounts for SDF in Parallel OT by Wang (2025), I asked the question of whether this is an indication that one type of overapplication opacity no longer poses problems for the parallelism framework. This paper re-examines the tenets behind using underspecification and contextual faithfulness, and further argues that rule-based serialism can provide a more elegant solution. After rewriting the segment deletion and insertion rules into those determining the appearance of the underspecified segments in rule-based serialism, the idea of keeping features or segments in certain contexts constant is in fact not required. Rule-based serialism thus provides a slightly more elegant solution of understanding overapplication opacity (or at least SDF) than Parallel OT, as a simpler theory with fewer analytical tools. Since the ability to account for opacity is essential in the serialism-parallelism debate, rule-based serialism may be argued to still outperform parallelism in certain aspects.

Abbreviations

ACC = accusative, DEF = definite, INF = infinitive.

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