

# Morphosyntactic property sets at the interface of inflectional morphology and syntax



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# Talk outline

1. The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology
2. Noncanonical correspondences
3. Content paradigms and form paradigms

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1. The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology:

**The property set that determines a word's syntax  
*is the same as***

**the property set that determines its morphology**

2. Noncanonical correspondences
3. Content paradigms and form paradigms

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2. **Noncanonical correspondences**
3. Content paradigms and form paradigms

# Talk outline

1. The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology
2. Noncanonical correspondences :  
**The property set determining a word's syntax  
*is in some way distinct from*  
the property set determining that word's morphology**
3. Content paradigms and form paradigms

# Talk outline

1. The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology
2. Noncanonical correspondences
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**The canonical correspondence of morphosyntactic  
property sets at the interface of syntax  
with inflectional morphology**



# The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology

## Assumptions

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- a lexeme  $L$ 's paradigm is a set of cells;
- each cell is the pairing  $\langle Z, \sigma \rangle$  of a stem  $Z$  with a morphosyntactic property set  $\sigma$ .

# The canonical correspondence of morphosyntactic property sets at the interface of syntax with inflectional morphology

On those assumptions, the canonical correspondence is such that

when rules of syntax associate a morphosyntactic property set  $\sigma$  with a lexical node  $X$  occupied by a lexeme  $L$ ,

$L$ 's paradigm contains a cell  $\langle Z, \sigma \rangle$  that determines  $L$ 's morphological realization in that syntactic context.

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*Example*

Node X: {3rd singular present indicative}

[ *John* [ X *cheese* ] ]

The form of LIKE insertable into X is the realization of the cell

⟨*like*, {3rd singular present indicative}⟩

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**A noncanonical** correspondence of property sets  
at the interface of syntax  
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*Example*

Node X:  $\sigma$

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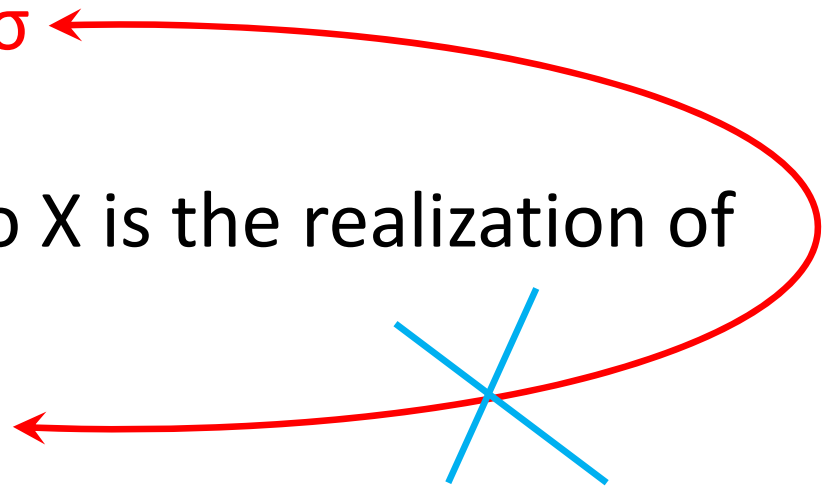
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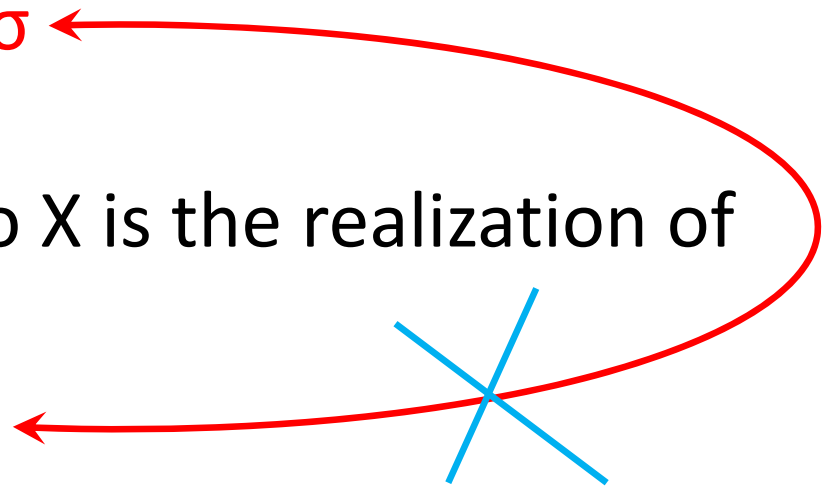
# A **noncanonical** correspondence of property sets at the interface of syntax with inflectional morphology

*Example*

Node X:  $\sigma$

The form of L insertable into X is the realization of

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I shall refer to the property set that determines a word's syntax as a ***syntactic property set*** (S-PS) and to the property set that determines its morphological realization as a ***morphological property set*** (M-PS).

In general, a S-PS  $\sigma$  is morphologically realized through the mediation of a M-PS  $\mu$ .

Canonically,  $\sigma = \mu$ .

Syntactic property set $\sigma$	Morphological property set $\mu$	
{p q}	{p q}	(canonical)

In noncanonical cases,  $\mu$  may differ from  $\sigma$  in various ways.



Syntactic property set $\sigma$	Morphological property set $\mu$	
{p q}	{p q}	(canonical)
{p q}	{p}	( $\mu$ is a proper subset of $\sigma$ )

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{p q}, {p r}	{p r}	( $\mu$ is a referral)
{p q}, {p r} {p q}, {r s}	{p [q $\vee$ r]} {p q} $\vee$ {r s}	( $\mu$ has disjunctive properties or is a disjunction of property sets)

Syntactic property set $\sigma$	Morphological property set $\mu$	
$\{p\ q\}$	$\{p\ q\}$	(canonical)
$\{p\ q\}$	$\{p\}$	( $\mu$ is a proper subset of $\sigma$ )
$\{p\ q\}, \{p\ r\}$	$\{p\ r\}$	( $\mu$ is a referral)
$\{p\ q\}, \{p\ r\}$ $\{p\ q\}, \{r\ s\}$	$\{p\ [q \vee r]\}$ $\{p\ q\} \vee \{r\ s\}$	( $\mu$ has disjunctive properties or is a disjunction of property sets)
$\{p\ q\}$	$\{c\}$	( $\mu$ has morphomic properties)

M-PS  $\mu$  is a proper subset of S-PS  $\sigma$

In Bhojpuri (Indo-Aryan), a verb's synthetic inflection expresses

3 persons

× 2 numbers

× 2 genders

× 4 tense/mood properties

= 48 morphosyntactic property sets.

## Inflection of the Bhojpuri verb DĒKH 'see'

		Singular		Plural	
		masculine	feminine	masculine	feminine
Present indicative	1	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	2	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
	3	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
Past indicative	1	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
	2	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
	3	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
Future indicative	1	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
	2	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>
	3	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>
Optative	1	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
	2	<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>
	3	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>

## Inflection of the Bhojpuri verb DĒKH ‘see’

		Singular		Plural	
		masculine	feminine	masculine	feminine
Present indicative	1	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>
	2	<i>dēkh-āl-ā</i>	<i>dēkh-æl-iu</i>	<i>dēkh-āl-ā</i>	<i>dēkh-æl-iu</i>
	3	<i>dēkh-āl-ā</i>	<i>dēkh-ēl-ē</i>	<i>dēkh-æl-ǣ</i>	<i>dēkh-æl-ini</i>
Past indicative	1	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>
	2	<i>dekh-al-ā</i>	<i>dekh-al-iu</i>	<i>dekh-al-ā</i>	<i>dekh-al-iu</i>
	3	<i>dēkh-al</i>	<i>dēkh-al-i</i>	<i>dekh-al-ǣ</i>	<i>dekh-al-ini</i>
Future indicative	1	<i>dēkh-ab</i>	<i>dēkh-ab</i>	<i>dekh-ab-ǣ</i>	<i>dekh-ab-ǣ</i>
	2	<i>dekh-ab-ā</i>	<i>dekh-ab-iu</i>	<i>dekh-ab-ā</i>	<i>dekh-ab-iu</i>
	3	<i>dēkh-ī</i>	<i>dēkh-ī</i>	<i>dekh-ih-ǣ</i>	<i>dekh-ih-ǣ</i>
Optative	1	<i>dēkh-ĩ</i>	<i>dēkh-ĩ</i>	<i>dēkh-ĩ</i>	<i>dēkh-ĩ</i>
	2	<i>dēkh-ā</i>	<i>dēkh-ā</i>	<i>dēkh-ā</i>	<i>dēkh-ā</i>
	3	<i>dēkh-æ</i>	<i>dēkh-æ</i>	<i>dēkh-ǣ</i>	<i>dēkh-ǣ</i>



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Present indicative	1	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>	<i>dēkh-īl-ā</i>
	2	<i>dēkh-āl-ā</i>	<i>dēkh-æl-iu</i>	<i>dēkh-āl-ā</i>	<i>dēkh-æl-iu</i>
	3	<i>dēkh-āl-ā</i>	<i>dēkh-ēl-ē</i>	<i>dēkh-æl-ǣ</i>	<i>dēkh-æl-ini</i>
Past indicative	1	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>	<i>dekh-al-ĩ</i>
	2	<i>dekh-al-ā</i>	<i>dekh-al-iu</i>	<i>dekh-al-ā</i>	<i>dekh-al-iu</i>
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	2	<i>dekh-ab-ā</i>	<i>dekh-ab-iu</i>	<i>dekh-ab-ā</i>	<i>dekh-ab-iu</i>
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	2	<i>dēkh-ā</i>	<i>dēkh-ā</i>	<i>dēkh-ā</i>	<i>dēkh-ā</i>
	3	<i>dēkh-æ</i>	<i>dēkh-æ</i>	<i>dēkh-ǣ</i>	<i>dēkh-ǣ</i>

## Affixal exponents of Bhojpuri verb inflection

		Present indicative		Past indicative		Future indicative		Optative	
		sg	pl	sg	pl	sg	pl	sg	pl
1	masc	<i>-īlā</i>		<i>-alī</i>		<i>-ab</i>	<i>-abāẽ</i>	<i>-ĩ</i>	
	fem								
2	masc	<i>-ālā</i>		<i>-alā</i>		<i>-abā</i>		<i>-ā</i>	
	fem	<i>-æliu</i>		<i>-aliu</i>		<i>-abiu</i>			
3	masc	<i>-ālā</i>	<i>-ælāẽ</i>	<i>-al</i>	<i>-alāẽ</i>	<i>-ī</i>	<i>-ihāẽ</i>	<i>-æ</i>	<i>-āẽ</i>
	fem	<i>-ēlē</i>	<i>-ælini</i>	<i>-ali</i>	<i>-alini</i>				

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		Present indicative		Past indicative		Future indicative		Optative	
		sg	pl	sg	pl	sg	pl	sg	pl
1	masc	1		2		3	4	5	
	fem								
2	masc	6		7		8		9	
	fem								
3	masc	13	14	15	16	17	18	19	20
	fem	21	22	23	24				

The form inserted into a syntactic context associated with the S-PS (1) is morphologically realized through the mediation of the M-PS (2).

(1) {1st singular masculine present indicative}

(2) {1<sup>st</sup> present indicative}

## Inflection of the Bhojpuri verb DĒKH 'see'

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1	masc	1		2		3	4	5	
	fem								
2	masc	6		7		8		9	
	fem	10		11		12			
3	masc	13	14	15	16	17	18	19	20
	fem	21	22	23	24				

S-PS  $\sigma$  is referred to M-PS  $\mu$

Turkish nouns inflect for number, case and the person and number of a possessor.



## Possessive inflection of Turkish ADAM 'man'

Possessor		Nominative	Accusative	Dative
Singular	1sg	<i>adam-ım</i>	<i>adam-ım-ı</i>	<i>adam-ım-a</i>
	2sg	<i>adam-ın</i>	<i>adam-ın-ı</i>	<i>adam-ın-a</i>
	3sg	<i>adam-ı</i>	<i>adam-ın-ı</i>	<i>adam-ın-a</i>
	1pl	<i>adam-ımız</i>	<i>adam-ımız-ı</i>	<i>adam-ımız-a</i>
	2pl	<i>adam-ınız</i>	<i>adam-ınız-ı</i>	<i>adam-ınız-a</i>
	3pl	<i>adam-lar-ı</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>
Plural	1sg	<i>adam-lar-ım</i>	<i>adam-lar-ım-ı</i>	<i>adam-lar-ım-a</i>
	2sg	<i>adam-lar-ın</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>
	3sg	<i>adam-lar-ı</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>
	1pl	<i>adam-lar-ımız</i>	<i>adam-lar-ımız-ı</i>	<i>adam-lar-ımız-a</i>
	2pl	<i>adam-lar-ınız</i>	<i>adam-lar-ınız-ı</i>	<i>adam-lar-ınız-a</i>
	3pl	<i>adam-lar-ı</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>

## Possessive inflection of Turkish ADAM 'man'

Possessor		Locative	Ablative	Genitive
Singular	1sg	<i>adam-ım-da</i>	<i>adam-ım-dan</i>	<i>adam-ım-ın</i>
	2sg	<i>adam-ın-da</i>	<i>adam-ın-dan</i>	<i>adam-ın-ın</i>
	3sg	<i>adam-ın-da</i>	<i>adam-ın-dan</i>	<i>adam-ın-ın</i>
	1pl	<i>adam-ım-ız-da</i>	<i>adam-ım-ız-dan</i>	<i>adam-ım-ız-ın</i>
	2pl	<i>adam-ın-ız-da</i>	<i>adam-ın-ız-dan</i>	<i>adam-ın-ız-ın</i>
	3pl	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>
Plural	1sg	<i>adam-lar-ım-da</i>	<i>adam-lar-ım-dan</i>	<i>adam-lar-ım-ın</i>
	2sg	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>
	3sg	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>
	1pl	<i>adam-lar-ım-ız-da</i>	<i>adam-lar-ım-ız-dan</i>	<i>adam-lar-ım-ız-ın</i>
	2pl	<i>adam-lar-ın-ız-da</i>	<i>adam-lar-ın-ız-dan</i>	<i>adam-lar-ın-ız-ın</i>
	3pl	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>

## Four forms of Turkish ADAM 'man'

Stem	Number	Possessor		Case	
		person	number		
<i>adam</i>	<i>-lar</i>	<i>-im</i>	<i>-iz</i>	<i>-dan</i>	'from our men'
<i>adam</i>	–	<i>-im</i>	<i>-iz</i>	<i>-dan</i>	'from our man'
<i>adam</i>	<i>-lar</i>	<i>-im</i>	–	<i>-dan</i>	'from my men'
<i>adam</i>	<i>-lar</i>	<i>-im</i>	<i>-iz</i>	–	'our men (nominative)'

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	3sg	<i>adam-ı</i>	<i>adam-ın-ı</i>	<i>adam-ın-a</i>
	1pl	<i>adam-ımız</i>	<i>adam-ımız-ı</i>	<i>adam-ımız-a</i>
	2pl	<i>adam-ınız</i>	<i>adam-ınız-ı</i>	<i>adam-ınız-a</i>
	3pl	<i>adam-lar-ı</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>
Plural	1sg	<i>adam-lar-ım</i>	<i>adam-lar-ım-ı</i>	<i>adam-lar-ım-a</i>
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	3sg	<i>adam-lar-ı</i>	<i>adam-lar-ın-ı</i>	<i>adam-lar-ın-a</i>
	1pl	<i>adam-lar-ımız</i>	<i>adam-lar-ımız-ı</i>	<i>adam-lar-ımız-a</i>
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## Possessive inflection of Turkish ADAM 'man'

	Possessor	Locative	Ablative	Genitive
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	2sg	<i>adam-ın-da</i>	<i>adam-ın-dan</i>	<i>adam-ın-ın</i>
	3sg	<i>adam-ın-da</i>	<i>adam-ın-dan</i>	<i>adam-ın-ın</i>
	1pl	<i>adam-ım-ız-da</i>	<i>adam-ım-ız-dan</i>	<i>adam-ım-ız-ın</i>
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	3sg	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>
	1pl	<i>adam-lar-ım-ız-da</i>	<i>adam-lar-ım-ız-dan</i>	<i>adam-lar-ım-ız-ın</i>
	2pl	<i>adam-lar-ın-ız-da</i>	<i>adam-lar-ın-ız-dan</i>	<i>adam-lar-ın-ız-ın</i>
	3pl	<i>adam-lar-ın-da</i>	<i>adam-lar-ın-dan</i>	<i>adam-lar-ın-ın</i>

(3) adam-lar-in-dan

man-PL-3SG-ABL

‘from his men’ or  
‘from their man’ or  
‘from their men’

*adam-lar-in-dan*

- a. {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}: 'from her/his men'
- b. {NUMBER:singular, POSSESSOR:{3 pl}, CASE:ablative}: 'from their man'
- c. {NUMBER:plural, POSSESSOR:{3 pl}, CASE:ablative}: 'from their men'

*adam-lar-in-dan*

- a. {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}: 'from her/his men'
- b. {NUMBER:singular, POSSESSOR:{3 pl}, CASE:ablative}: 'from their man'
- c. {NUMBER:plural, POSSESSOR:{3 pl}, CASE:ablative}: 'from their men'



*adam-lar-in-dan*

- a. {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}: ‘from her/his men’
- b. {NUMBER:singular, POSSESSOR:{3 pl}, CASE:ablative}: ‘from their man’
- c. {NUMBER:plural, POSSESSOR:{3 pl}, CASE:ablative}: ‘from their men’

*adam-lar-in-dan*

- a. {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}: ‘from her/his men’
- b. {NUMBER:singular, POSSESSOR:{3 pl}, CASE:ablative}: ‘from their man’
- c. {NUMBER:plural, POSSESSOR:{3 pl}, CASE:ablative}: ‘from their men’

The form inserted into a syntactic contexts associated with the S-PSs in (4) is morphologically realized through the mediation of the M-PS (5).

- (4) a. {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}
  - b. {NUMBER:singular, POSSESSOR:{3 pl}, CASE:ablative}
  - c. {NUMBER:plural, POSSESSOR:{3 pl}, CASE:ablative}
- (5)       {NUMBER:plural, POSSESSOR:{3 sg}, CASE:ablative}

S-PS  $\sigma$  is a disjunct of M-PS  $\mu$

In cases of nondirectional syncretism, the syncretic form may be seen as realizing a disjunction of morphosyntactic property sets.

In Sanskrit, for example, the instrumental, dative and ablative cases are invariably syncretized in the dual.

Declension of Sanskrit MITRA 'friend'			
	Singular	Dual	Plural
Nominative	<i>mitras</i>	<i>mitrau</i>	<i>mitrās</i>
Vocative	<i>mitra</i>	<i>mitrau</i>	<i>mitrās</i>
Accusative	<i>mitram</i>	<i>mitrau</i>	<i>mitrān</i>
Instrumental	<i>mitrena</i>	<i>mitrābhyām</i>	<i>mitrais</i>
Dative	<i>mitrāya</i>	<i>mitrābhyām</i>	<i>mitrebhyas</i>
Ablative	<i>mitrāt</i>	<i>mitrābhyām</i>	<i>mitrebhyas</i>
Genitive	<i>mitrasya</i>	<i>mitrayos</i>	<i>mitrānām</i>
Locative	<i>mitre</i>	<i>mitrayos</i>	<i>mitreṣu</i>

Accordingly, the form *mitrābhyām* ‘with/to/from two friends’ may be seen as realizing the property set in (6):

(6) {masculine [[instrumental  $\vee$  dative]  $\vee$  ablative] dual}

This is a **constraint on MPSs** (Gazdar et al. 1988) which is satisfied by any of the three MPSs in (7):

- (7)
- a. {masculine instrumental dual}
  - b. {masculine dative dual}
  - c. {masculine ablative dual}

Thus, the form of MITRA realizing M-PS (6) may be inserted into any syntactic context associated with one of the S-PSs in (7).

(6) {masculine [[instrumental  $\vee$  dative]  $\vee$  ablative] dual}

- (7)
- a. {masculine instrumental dual}
  - b. {masculine dative dual}
  - c. {masculine ablative dual}



M-PS  $\mu$  *contains one or more  
morphomic properties*

In some instances, the set of morphosyntactic properties employed in the inflectional realization of a language's lexemes includes properties to which syntax is insensitive; these properties are **morphomic** (Aronoff 1994).

In the syntax of Hua (Trans-New-Guinea), a verb inflects for twelve modal properties—

### Modal properties expressed by verb inflection in Hua

Indicative	Inconsequential
Interrogative	Medial: a. Coordinate b. Subordinate
Relative	Exclamatory
Purposive	Assertive
Concessive-expectant	Counterfactual: a. Protasis b. Apodosis

—and agrees with its subject in person (1/2/3) and number (sg/du/pl).

In the morphology of Hua, the properties of number are instead 'dual' and 'C'.

In particular, the correspondence of S-MPSs to M-MPSs is as follows (Haiman 1980):

For any mood  $\alpha$ , the inflectional realization of a lexeme L occupying a syntactic context specified as S-PS is determined by the corresponding M-PS.

S-PS	M-PS
{1 sg $\alpha$ }	{1 $\alpha$ }
{2 sg $\alpha$ }	{2 C $\alpha$ }
{3 sg $\alpha$ }	{3 $\alpha$ }
{1 du $\alpha$ }	{1 du $\alpha$ }
{2 du $\alpha$ }	{2 du $\alpha$ }
{3 du $\alpha$ }	{2 du $\alpha$ }
{1 pl $\alpha$ }	{1 C $\alpha$ }
{2 pl $\alpha$ }	{2 $\alpha$ }
{3 pl $\alpha$ }	{2 $\alpha$ }

In particular, the correspondence of S-MPSs to M-MPSs is as follows (Haiman 1980):

For any mood  $\alpha$ , the inflectional realization of a lexeme L occupying a syntactic context specified as S-PS is determined by the corresponding M-PS.

The property 'C' is shared by 2sg and 1pl forms. It has no relevance to syntax, semantics or phonology; it is morphomic (Aronoff 1994).

S-PS	M-PS
{1 sg $\alpha$ }	{1 $\alpha$ }
{2 sg $\alpha$ }	{2 C $\alpha$ }
{3 sg $\alpha$ }	{3 $\alpha$ }
{1 du $\alpha$ }	{1 du $\alpha$ }
{2 du $\alpha$ }	{2 du $\alpha$ }
{3 du $\alpha$ }	{2 du $\alpha$ }
{1 pl $\alpha$ }	{1 C $\alpha$ }
{2 pl $\alpha$ }	{2 $\alpha$ }
{3 pl $\alpha$ }	{2 $\alpha$ }

# Interrogative forms of Hua HU 'do'

arranged by content

	SG	DU	PL
1 <sup>st</sup>	<i>hu-ve</i>	<i>hu-'ve</i>	<i>hu-pe</i>
2 <sup>nd</sup>	<i>ha-pe</i>	<i>ha-'ve</i>	<i>ha-ve</i>
3 <sup>rd</sup>	<i>hi-ve</i>		

arranged by form

	non-DU non-C	DU	C
1 <sup>st</sup>	<i>hu-ve</i>	<i>hu-'ve</i>	<i>hu-pe</i>
2 <sup>nd</sup>	<i>ha-ve</i>	<i>ha-'ve</i>	<i>ha-pe</i>
3 <sup>rd</sup>	<i>hi-ve</i>		

1sg	1du	1pl
2/3pl	2/3du	2sg
3sg		

# Subject markers in Hua

	Indicative	Interrogative	Relative	Purposive	Concessive-expectant	Inconsequential	Medial		Exclamatory	Assertive	Counterfactual	
							Coordinate	Subordinate			Protasis	Apodosis
<b>-DU, -C</b>	<i>-e</i>	<i>-ve</i>	<i>-ma'</i>	<i>-mi'</i>	<i>-va</i>	<i>-mana</i>	<i>-ga</i>	<i>-ma</i>	<i>-mane</i>	<i>-mae</i>	<i>-hipana</i>	<i>-hine</i>
<b>DU</b>	<i>-'e</i>	<i>-'ve</i>	<i>-'ma'</i>	<i>-'mi'</i>	<i>-'va</i>	<i>-'mana</i>	<i>-'ga</i>	<i>-'ma</i>	<i>-'mane</i>	<i>-'mae</i>	<i>-'hipana</i>	<i>-'hine</i>
<b>C</b>	<i>-ne</i>	<i>-pe</i>	<i>-pa'</i>	<i>-pi'</i>	<i>-pa</i>	<i>-pana</i>	<i>-na</i>	<i>-pa</i>	<i>-pane</i>	<i>-pae</i>	<i>-sipana</i>	<i>-sine</i>



The form of HU 'do' inserted into a syntactic context associated with the S-PS (8) is morphologically realized through the mediation of the M-PS (9).

(8) {2<sup>nd</sup> singular interrogative}

(9) {2<sup>nd</sup> C interrogative}

A theoretical interpretation

Mismatches between S-PSs and the M-PSs that mediate their morphological realization draw attention to the fact that inflectional paradigms have three functions:

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Mismatches between S-PSs and the M-PSs that mediate their morphological realization draw attention to the fact that inflectional paradigms have three functions:

- They identify the range of morphosyntactic property sets with which a lexeme may be paired in syntax.
- They identify the range of morphosyntactic property sets for which a stem may inflect.
- They identify a morphosyntactic property set's inflectional realization.

Ordinarily, we think of the same paradigm as fulfilling all three functions, but certain phenomena instead suggest that they are fulfilled by distinct sorts of paradigms.

# Three types of paradigm in natural language

Type of paradigm	Definition
<b>Content paradigm</b>	<p>a set of <b>content cells</b>, each the pairing of a lexeme L with a morphosyntactic property set with which L may be associated in syntax</p> <p>Example: ⟨NATIONAL, {masc pl}⟩</p>



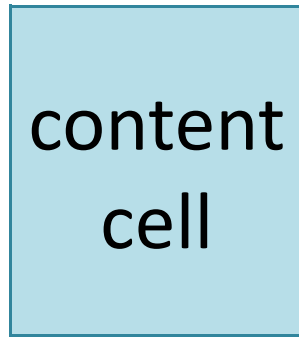
# Three types of paradigm in natural language

Type of paradigm	Definition
<b>Form paradigm</b>	<p>a set of <b>form cells</b>, each the pairing of a stem with a morphosyntactic property set for which it is inflectable</p> <p>Example: ⟨/nasjonal/, {masc pl}⟩</p>

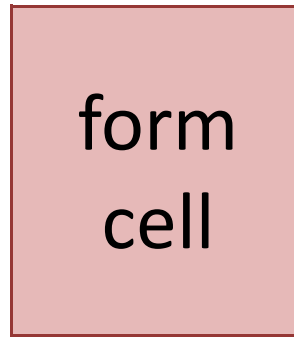
# Three types of paradigm in natural language

Type of paradigm	Definition
<b>Realized paradigm</b>	<p>a set of <b>realized cells</b>, each the pairing of an inflected word form with the morphosyntactic property set that it expresses.</p> <p>Example: ⟨/nasjono/, {masc pl}⟩</p>

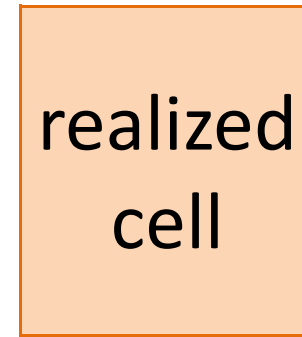
# The interface of content paradigms, form paradigms and realized paradigms



$\langle L, \sigma \rangle$



$\langle Z, \tau \rangle$



$\langle X, \tau \rangle$

$\langle L, \sigma \rangle$  is realized as  $\langle X, \tau \rangle$  through the mediation of  $\langle Z, \tau \rangle$ .

In any such instance, the relation between  $\langle L, \sigma \rangle$  and  $\langle Z, \tau \rangle$  is the ***form-correspondence*** relation, and the relation between  $\langle L, \sigma \rangle$  or  $\langle Z, \tau \rangle$  and  $\langle X, \tau \rangle$  is the ***realization*** relation.

## Declensional paradigm of Turkish ADAM 'man'

	Singular	Plural
Nominative	<i>adam</i>	<i>adam-lar</i>
Accusative	<i>adam-ı</i>	<i>adam-lar-ı</i>
Dative	<i>adam-a</i>	<i>adam-lar-a</i>
Locative	<i>adam-da</i>	<i>adam-lar-da</i>
Ablative	<i>adam-dan</i>	<i>adam-lar-dan</i>
Genitive	<i>adam-ın</i>	<i>adam-lar-ın</i>

# The canonical relation between content paradigms and form paradigms, exemplified by the declension of ADAM 'man'

Content paradigm	Form paradigm	Realized paradigm
⟨ADAM, {nom sg}⟩	⟨ <i>adam</i> , {nom sg}⟩	⟨ <i>adam</i> , {nom sg}⟩
⟨ADAM, {acc sg}⟩	⟨ <i>adam</i> , {acc sg}⟩	⟨ <i>adamı</i> , {acc sg}⟩
⟨ADAM, {dat sg}⟩	⟨ <i>adam</i> , {dat sg}⟩	⟨ <i>adama</i> , {dat sg}⟩
⟨ADAM, {loc sg}⟩	⟨ <i>adam</i> , {loc sg}⟩	⟨ <i>adamda</i> , {loc sg}⟩
⟨ADAM, {abl sg}⟩	⟨ <i>adam</i> , {abl sg}⟩	⟨ <i>adamdan</i> , {abl sg}⟩
⟨ADAM, {gen sg}⟩	⟨ <i>adam</i> , {gen sg}⟩	⟨ <i>adamin</i> , {gen sg}⟩
⟨ADAM, {nom pl}⟩	⟨ <i>adam</i> , {nom pl}⟩	⟨ <i>adamlar</i> , {nom pl}⟩
⟨ADAM, {acc pl}⟩	⟨ <i>adam</i> , {acc pl}⟩	⟨ <i>adamları</i> , {acc pl}⟩
⟨ADAM, {dat pl}⟩	⟨ <i>adam</i> , {dat pl}⟩	⟨ <i>adamlara</i> , {dat pl}⟩
⟨ADAM, {loc pl}⟩	⟨ <i>adam</i> , {loc pl}⟩	⟨ <i>adamlarda</i> , {loc pl}⟩
⟨ADAM, {abl pl}⟩	⟨ <i>adam</i> , {abl pl}⟩	⟨ <i>adamlardan</i> , {abl pl}⟩
⟨ADAM, {gen pl}⟩	⟨ <i>adam</i> , {gen pl}⟩	⟨ <i>adamların</i> , {gen pl}⟩

## form-correspondence relation

Content paradigm		Form paradigm	Realized paradigm
⟨ADAM, {nom sg}⟩	⇒	⟨ <i>adam</i> , {nom sg}⟩	⟨ <i>adam</i> , {nom sg}⟩
⟨ADAM, {acc sg}⟩	⇒	⟨ <i>adam</i> , {acc sg}⟩	⟨ <i>adamı</i> , {acc sg}⟩
⟨ADAM, {dat sg}⟩	⇒	⟨ <i>adam</i> , {dat sg}⟩	⟨ <i>adama</i> , {dat sg}⟩
⟨ADAM, {loc sg}⟩	⇒	⟨ <i>adam</i> , {loc sg}⟩	⟨ <i>adamda</i> , {loc sg}⟩
⟨ADAM, {abl sg}⟩	⇒	⟨ <i>adam</i> , {abl sg}⟩	⟨ <i>adamdan</i> , {abl sg}⟩
⟨ADAM, {gen sg}⟩	⇒	⟨ <i>adam</i> , {gen sg}⟩	⟨ <i>adamin</i> , {gen sg}⟩
⟨ADAM, {nom pl}⟩	⇒	⟨ <i>adam</i> , {nom pl}⟩	⟨ <i>adamlar</i> , {nom pl}⟩
⟨ADAM, {acc pl}⟩	⇒	⟨ <i>adam</i> , {acc pl}⟩	⟨ <i>adamları</i> , {acc pl}⟩
⟨ADAM, {dat pl}⟩	⇒	⟨ <i>adam</i> , {dat pl}⟩	⟨ <i>adamlara</i> , {dat pl}⟩
⟨ADAM, {loc pl}⟩	⇒	⟨ <i>adam</i> , {loc pl}⟩	⟨ <i>adamlarda</i> , {loc pl}⟩
⟨ADAM, {abl pl}⟩	⇒	⟨ <i>adam</i> , {abl pl}⟩	⟨ <i>adamlardan</i> , {abl pl}⟩
⟨ADAM, {gen pl}⟩	⇒	⟨ <i>adam</i> , {gen pl}⟩	⟨ <i>adamların</i> , {gen pl}⟩

## realization relation

Content paradigm		Form paradigm		Realized paradigm
⟨ADAM, {nom sg}⟩	⇒	⟨ <i>adam</i> , {nom sg}⟩	→	⟨ <i>adam</i> , {nom sg}⟩
⟨ADAM, {acc sg}⟩	⇒	⟨ <i>adam</i> , {acc sg}⟩	→	⟨ <i>adamı</i> , {acc sg}⟩
⟨ADAM, {dat sg}⟩	⇒	⟨ <i>adam</i> , {dat sg}⟩	→	⟨ <i>adama</i> , {dat sg}⟩
⟨ADAM, {loc sg}⟩	⇒	⟨ <i>adam</i> , {loc sg}⟩	→	⟨ <i>adamda</i> , {loc sg}⟩
⟨ADAM, {abl sg}⟩	⇒	⟨ <i>adam</i> , {abl sg}⟩	→	⟨ <i>adamdan</i> , {abl sg}⟩
⟨ADAM, {gen sg}⟩	⇒	⟨ <i>adam</i> , {gen sg}⟩	→	⟨ <i>adamin</i> , {gen sg}⟩
⟨ADAM, {nom pl}⟩	⇒	⟨ <i>adam</i> , {nom pl}⟩	→	⟨ <i>adamlar</i> , {nom pl}⟩
⟨ADAM, {acc pl}⟩	⇒	⟨ <i>adam</i> , {acc pl}⟩	→	⟨ <i>adamları</i> , {acc pl}⟩
⟨ADAM, {dat pl}⟩	⇒	⟨ <i>adam</i> , {dat pl}⟩	→	⟨ <i>adamlara</i> , {dat pl}⟩
⟨ADAM, {loc pl}⟩	⇒	⟨ <i>adam</i> , {loc pl}⟩	→	⟨ <i>adamlarda</i> , {loc pl}⟩
⟨ADAM, {abl pl}⟩	⇒	⟨ <i>adam</i> , {abl pl}⟩	→	⟨ <i>adamlardan</i> , {abl pl}⟩
⟨ADAM, {gen pl}⟩	⇒	⟨ <i>adam</i> , {gen pl}⟩	→	⟨ <i>adamların</i> , {gen pl}⟩

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Content paradigm		Form paradigm		Realized paradigm
⟨ADAM, {nom sg}⟩	⇒	⟨ <i>adam</i> , {nom sg}⟩	→	⟨ <i>adam</i> , {nom sg}⟩
⟨ADAM, {acc sg}⟩	⇒	⟨ <i>adam</i> , {acc sg}⟩	→	⟨ <i>adamı</i> , {acc sg}⟩
⟨ADAM, {dat sg}⟩	⇒	⟨ <i>adam</i> , {dat sg}⟩	→	⟨ <i>adama</i> , {dat sg}⟩
⟨ADAM, {loc sg}⟩	⇒	⟨ <i>adam</i> , {loc sg}⟩	→	⟨ <i>adamda</i> , {loc sg}⟩
⟨ADAM, {abl sg}⟩	⇒	⟨ <i>adam</i> , {abl sg}⟩	→	⟨ <i>adamdan</i> , {abl sg}⟩
⟨ADAM, {gen sg}⟩	⇒	⟨ <i>adam</i> , {gen sg}⟩	→	⟨ <i>adamin</i> , {gen sg}⟩
⟨ADAM, {nom pl}⟩	⇒	⟨ <i>adam</i> , {nom pl}⟩	→	⟨ <i>adamlar</i> , {nom pl}⟩
⟨ADAM, {acc pl}⟩	⇒	⟨ <i>adam</i> , {acc pl}⟩	→	⟨ <i>adamları</i> , {acc pl}⟩
⟨ADAM, {dat pl}⟩	⇒	⟨ <i>adam</i> , {dat pl}⟩	→	⟨ <i>adamlara</i> , {dat pl}⟩
⟨ADAM, {loc pl}⟩	⇒	⟨ <i>adam</i> , {loc pl}⟩	→	⟨ <i>adamlarda</i> , {loc pl}⟩
⟨ADAM, {abl pl}⟩	⇒	⟨ <i>adam</i> , {abl pl}⟩	→	⟨ <i>adamlardan</i> , {abl pl}⟩
⟨ADAM, {gen pl}⟩	⇒	⟨ <i>adam</i> , {gen pl}⟩	→	⟨ <i>adamların</i> , {gen pl}⟩



Research on inflectional morphology has tended to focus on the realization relation; but a complete account of inflectional morphology—in particular, a complete account of its interface with syntax—necessitates greater attention to the form-correspondence relation.

The form-correspondence relation has two components.

On one hand, the association of a content cell  $\langle L, \sigma \rangle$  with a form cell  $\langle Z, \tau \rangle$  necessitates the selection of a stem  $Z$  appropriate for the realization of  $L$  and  $\tau$ .

On the other hand, the association of  $\langle L, \sigma \rangle$  with  $\langle Z, \tau \rangle$  necessitates a mapping from  $\sigma$  to  $\tau$  — a ***property mapping***.

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- a proper subset of  $\sigma$ ,

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But other kinds of mappings are possible: given a property mapping ***pm*** and a morphosyntactic property set  $\sigma$ , the value of ***pm***( $\sigma$ ) may be

- a proper subset of  $\sigma$ ,
- a contrasting property set to which  $\sigma$  is referred,

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But other kinds of mappings are possible: given a property mapping *pm* and a morphosyntactic property set  $\sigma$ , the value of *pm*( $\sigma$ ) may be

- a proper subset of  $\sigma$ ,
- a contrasting property set to which  $\sigma$  is referred,
- a constraint on property sets that is satisfied by  $\sigma$ , or

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- a proper subset of  $\sigma$ ,
- a contrasting property set to which  $\sigma$  is referred,
- a constraint on property sets that is satisfied by  $\sigma$ , or
- a property set containing morphomic properties.



A comprehensive theory and typology of property mappings await future research.