Tense and modality

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Relevant theoretical proposals

- Binary tense theory
- Possible world semantics
- Grice's Cooperative Principle, especially the Maxim of Quantity
  - Make your contribution as informative as is required
  - Do not make your contribution more informative than is required

Binary tense Theory: General claims

- Mental temporal representations are built on the basis of three binary features; cf. (1).

  - [±past]: past versus present

  - [±posterior]: future versus non-future

  - [±perfect]: imperfect versus perfect

- Languages may differ with respect to the question of whether these oppositions are overtly expressed by morphological and/or syntactic means, or pragmatically implied.

Our claims on Dutch

- [±past] is overtly expressed by means of verbal inflection.

- [±perfect] is overtly expressed by means of past participles or perfect auxiliaries.

- [±posterior] is not overtly expressed by means of the auxiliary *zullen* 'will'.

- The verb *zullen* is an epistemic modal.

- The future interpretation of certain sentences with *zullen* is due to pragmatics (Grice's Maxim of Quantity).

Organization of the paper

- Informal introduction to binary tense theory
- Epistemic modality and the role of the maxim of quantity in deriving future interpretations
- The status of *zullen* 'will' as an epistemic modal verb that introduces possible worlds
- Consequences for the Dutch verbal tense system, including habitual/generic, conditional, hypothetical and counterfactual readings (if we get there).

Introduction to and modification of Binary Tense Theory

Binary Tense Theory

		present	past
synchronous	imperfect	simple present *Ik wandel* I walk	simple past *Ik wandelde* I walked
	perfect	present perfect *Ik heb gewandeld* I have walked	past perfect *Ik had gewandeld* I had walked
posterior	imperfect	future *Ik zal wandelen* I will walk	future in the past *Ik zou wandelen* I would walk
	perfect	future perfect *Ik zal hebben gewandeld* I will have walked	future perfect in the past *Ik zou hebben gewandeld* I would have walked

Table 2: Te Winkel (1866) & Verkuyl (2008)

Why Reichenbach's approach should not be adopted

- present (S,R), past (R—S) and future (S—R)
- simultaneous (R,E), anterior (E—R), and posterior (R—E)
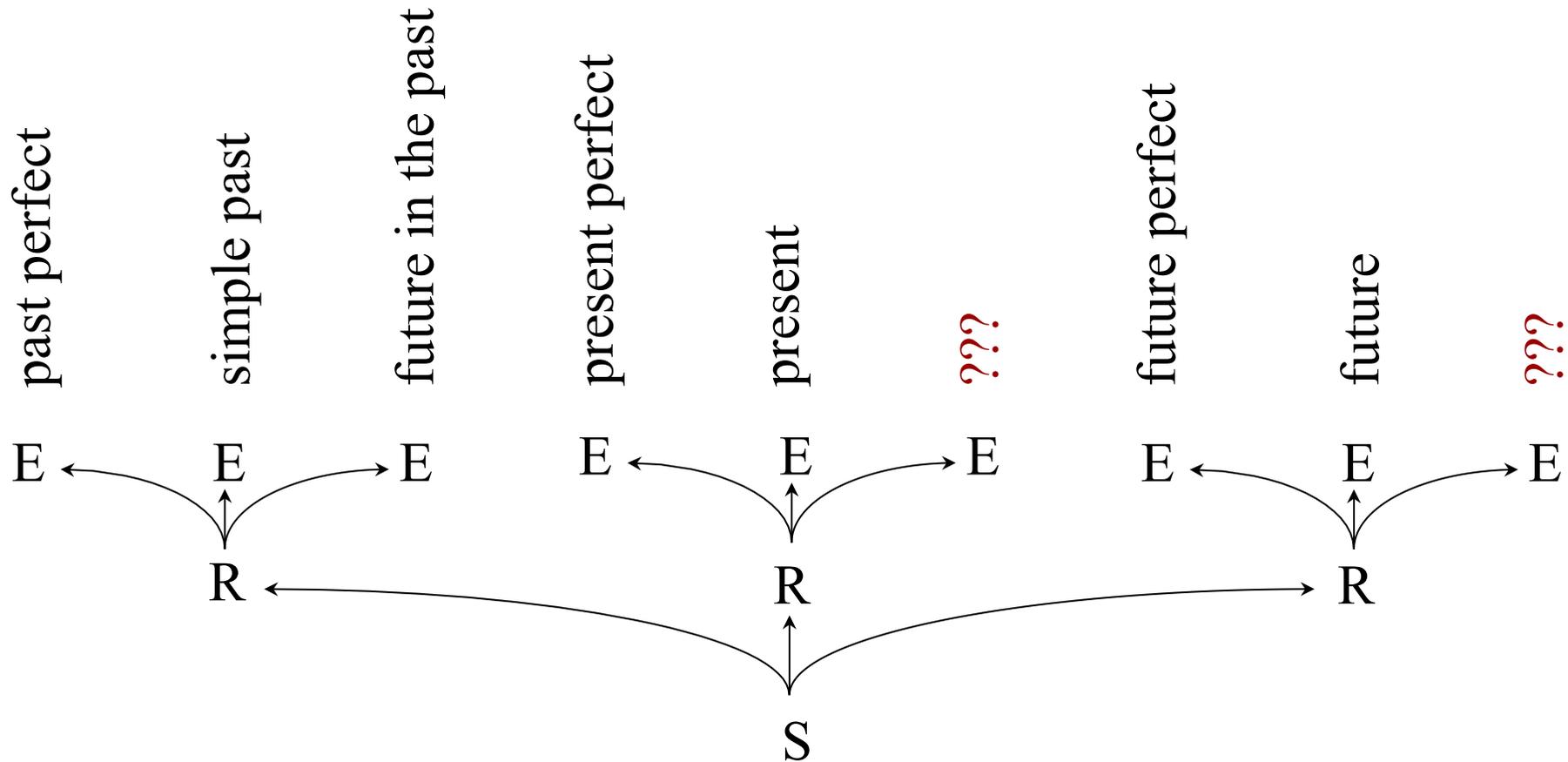
Reichenbach's approach is non-compositional

Table 11: Reichenbach's tense system matched to the Dutch system

	past (R—S)	present (S,R)	future (S—R)
anterior (E—R)	past perfect: *had gelopen* 'had walked'	present perfect *heeft gelopen* 'has walked'	future perfect *zal hebben gelopen* 'will have walked'
simultaneous (R,E)	present perfect *liep* 'walked'	present *loopt* 'walks'	future *zal lopen* 'will walk'
posterior (R—E)	future in past *zou lopen* 'would walk'	??? *zal lopen* 'will walk'	??? *zal (*zal) lopen* 'will walk'

Future perfect in the past cannot be derived

- Future in the past is constituted by:
  - Past: R—S
  - Perfect (anterior): E—R
  - Future in the past (posterior): R—E
- E—R & R—E constitutes a contradiction
- Proposed solution: the postulation of a *second* reference point R₂ (cf. Prior 1967; Haeseryn et al. 1997:116), but:
- this goes against the spirit of the proposal that the tense system can be described by postulating no more than three temporal points (S, R and E) on the basis of the two ternary oppositions in (281)

Conventions used in this talk

i j

i_a

$i_{\boxed{w}}$

Possible worlds

Time line

k

world 1

k

world 2

k

world 3

n/n'

[+perfect]
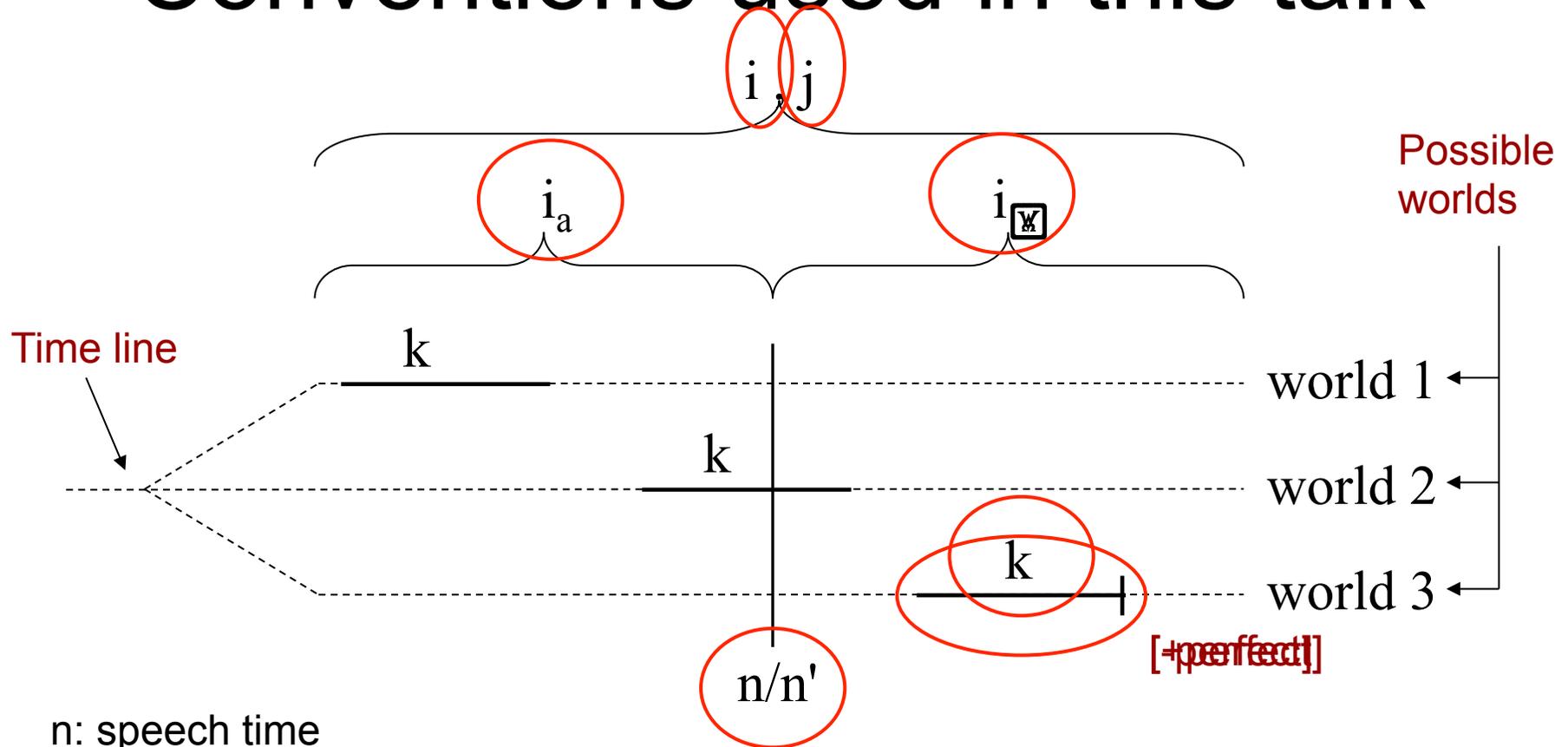
n: speech time

n' = "speech" time in the past

i: present/past tense interval   j: time span within which the eventuality k is located

i_a: actualized part of the present/past tense interval   k = eventuality (time interval)

$i_{\boxed{w}}$: non-actualized part of the present/past tense interval

Definitions
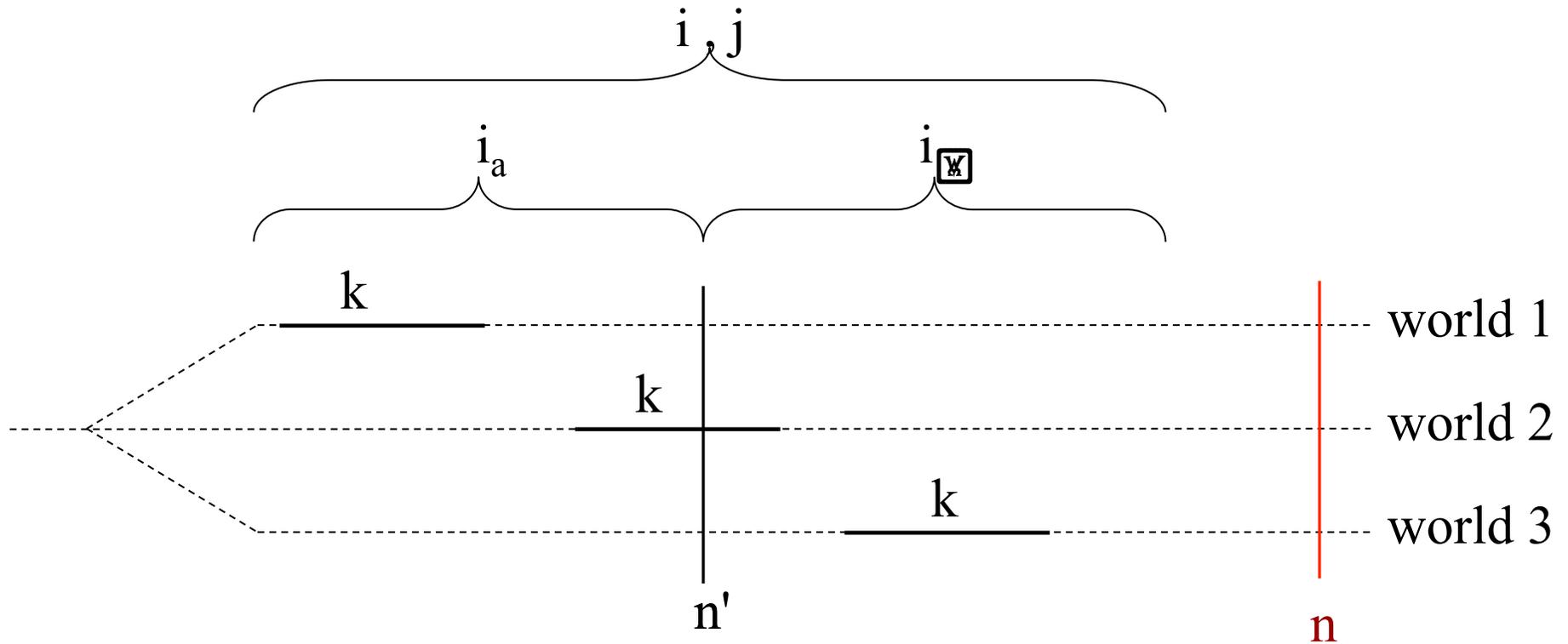
(10) The binary tense oppositions according to Verkuyl (2008):
a. [±past]: Present (i o n) - Past (i < n)
b. [±posterior]: Synchronous (j ⊠ i) - Posterior (i_a < j)
c. [±perfect]: Imperfect (k ⪯ j) - Perfect (k ≺ j)
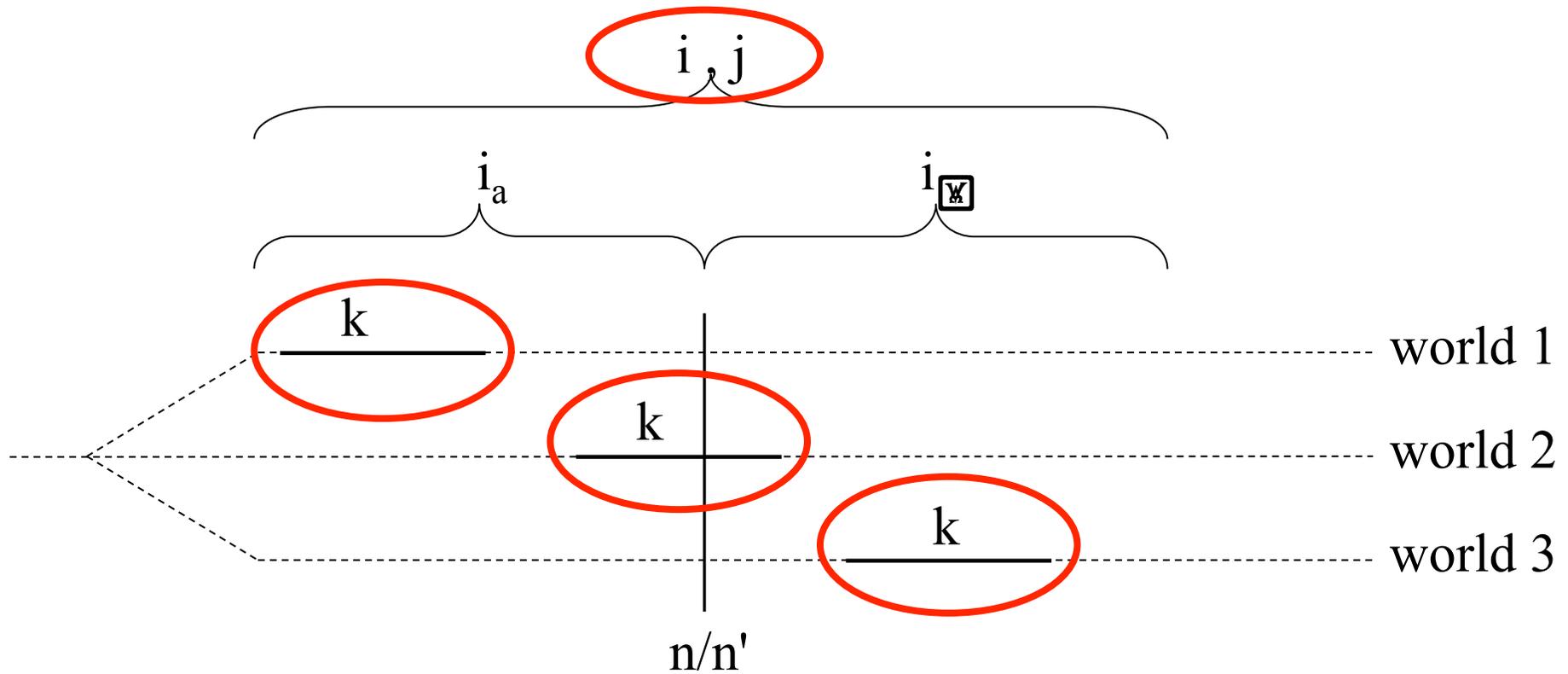
Definitions


(10) The binary tense oppositions according to Verkuyl (2008):

a. [±past]: Present ($i \circ n$) - Past ($i < n$)

b. [±posterior] Synchronous ($j \boxtimes i$) - Posterior ($i_a < j$)

c. [±perfect]: Imperfect ($k \preceq j$) - Perfect ($k \prec j$)
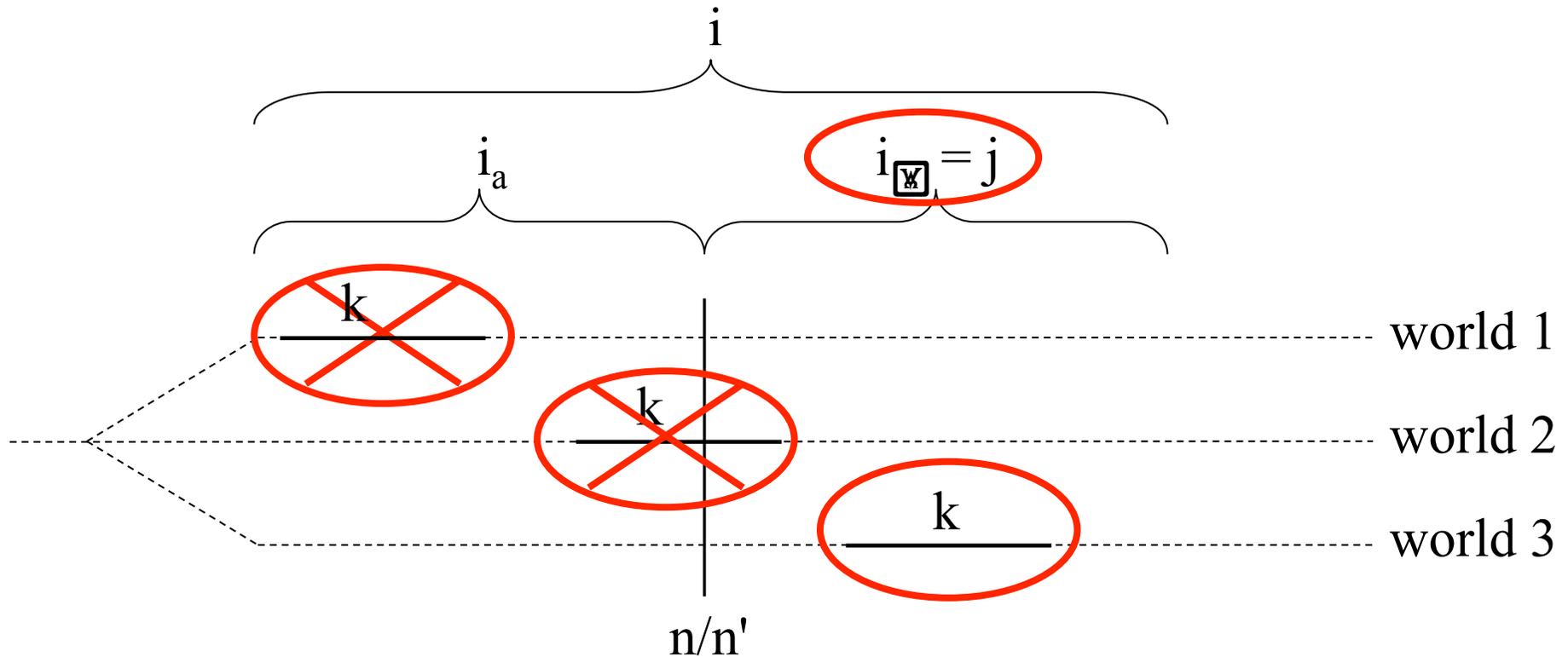
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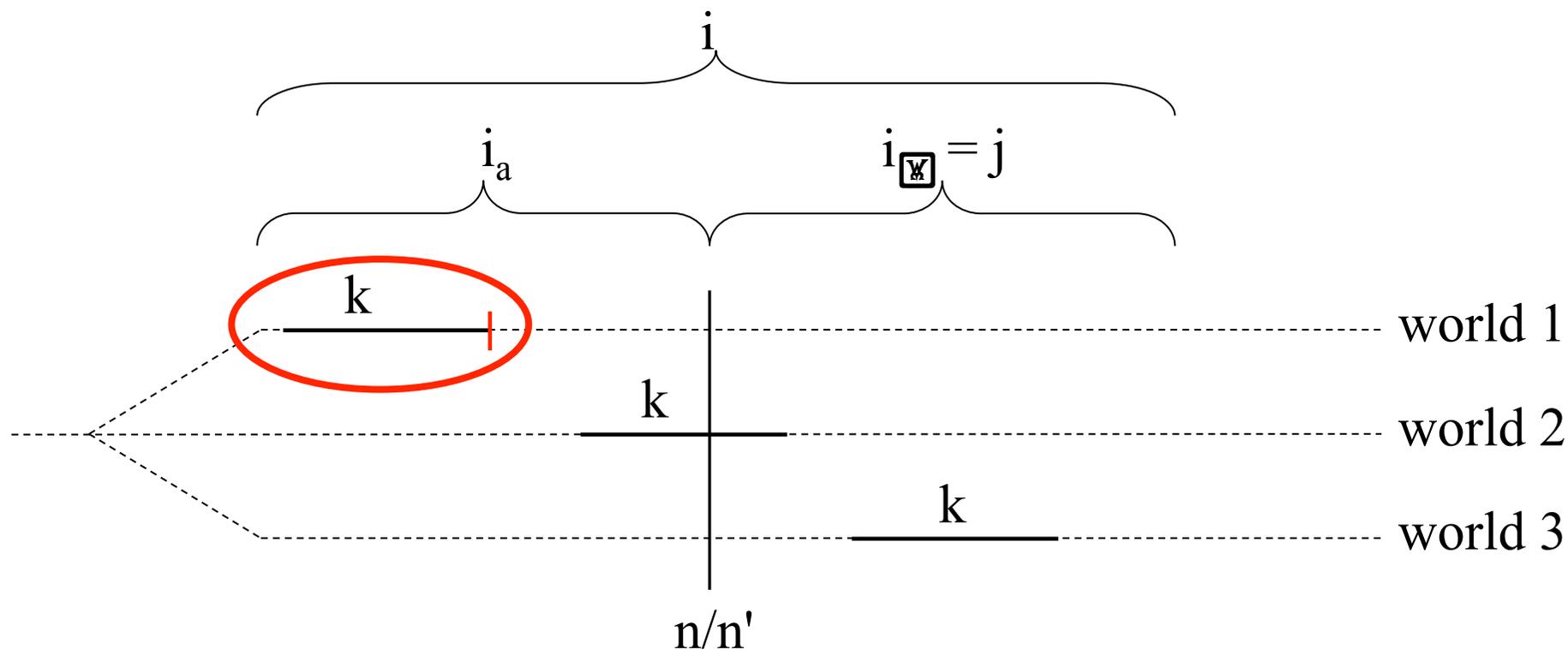

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Interpretation of the eight tenses

- This part discusses the semantic interpretation of the eight tenses predicted by binary tense theory.

- The following is intended as an illustration of the cross-linguistic mental representations predicted by binary tense theory, not as a/ our description of the Dutch verbal tense system.

- In Dutch, some of the tenses have more restricted or special readings; some of the these will be discussed later.

Present tense interval

- The present tense domain *i* is superordinated to speech time *n.*
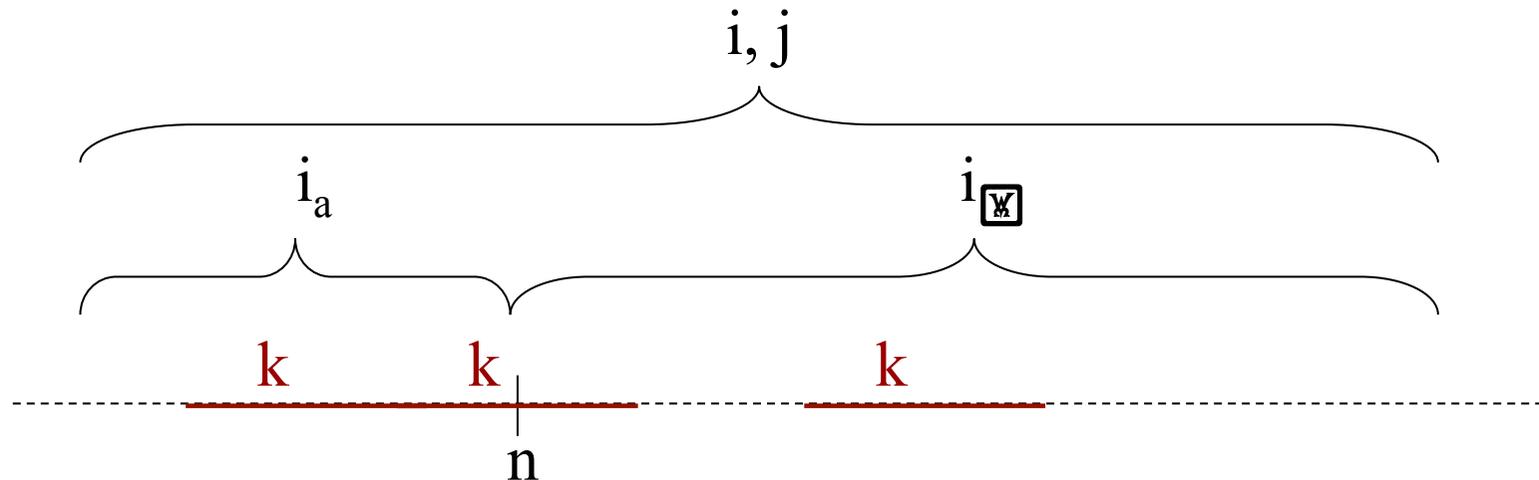
- Running time of eventuality *k* may but need not to include *n*. This depends on the type of present tense; see example (2).
- The present tense domain can be infinitely large; see example (3).

Simple present

- *Ik wandel* 'I am walking'
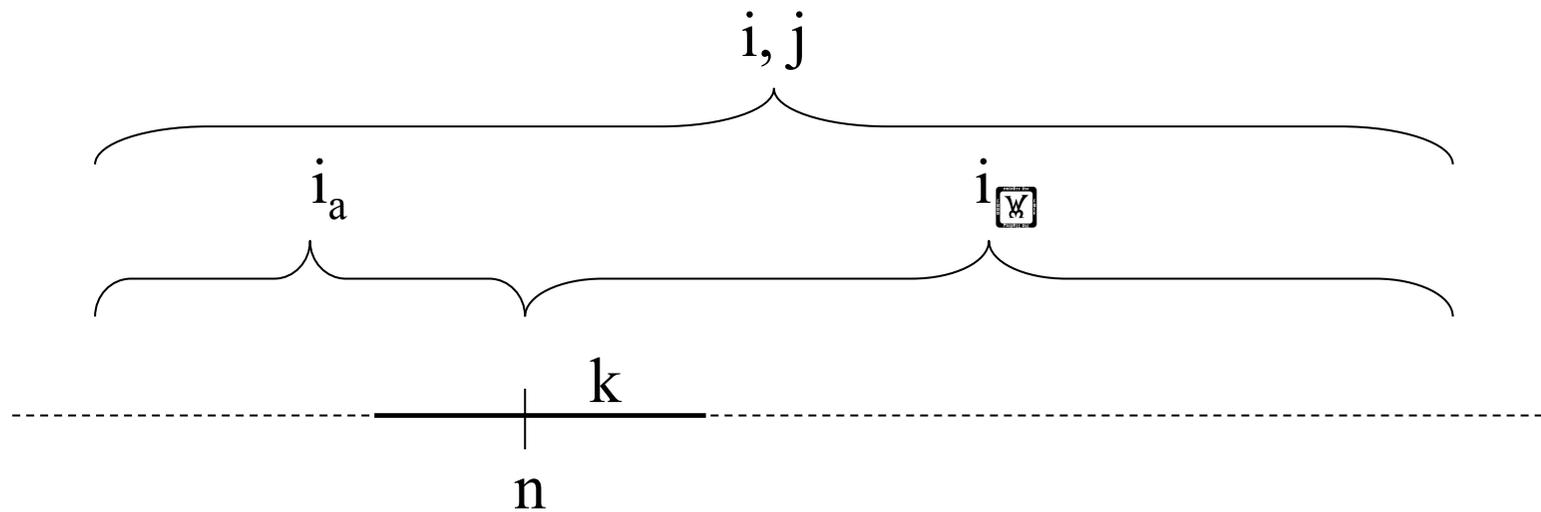
Present Perfect

- *Ik heb gewandeld* 'I have walked'
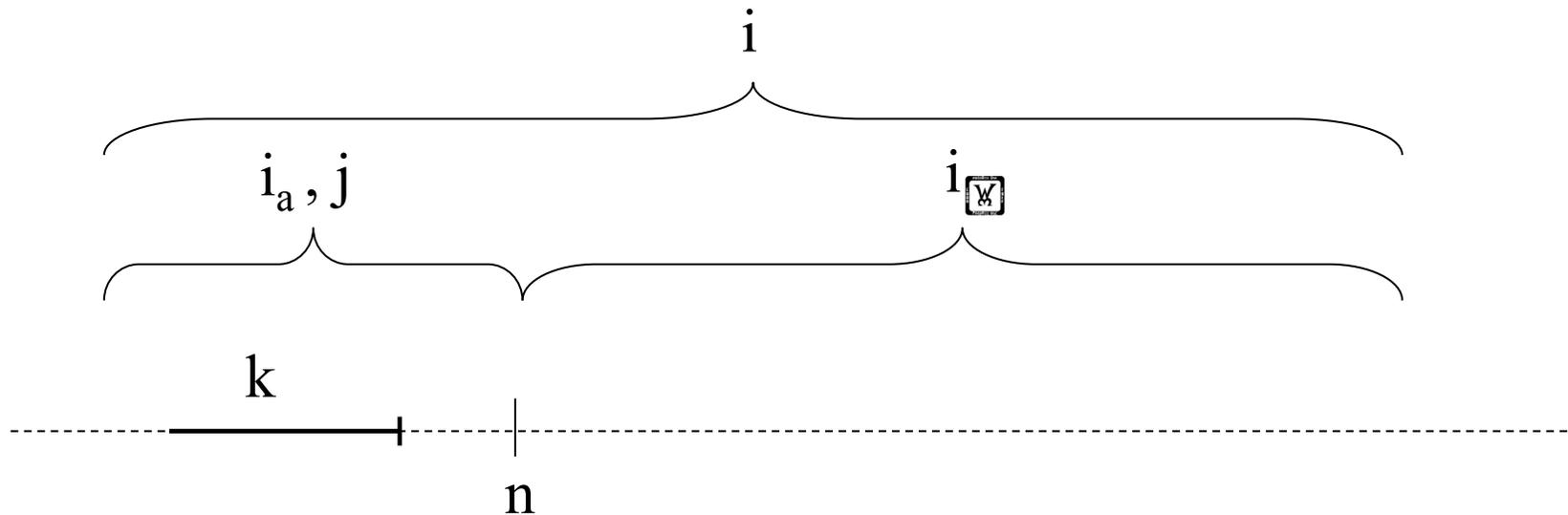
- Since the perfect tense can be described without appealing to the internal temporal structure of the event, we adopt a non-aspectual view on the perfect tense.

Future

- *Ik zal wandelen* 'I will walk'
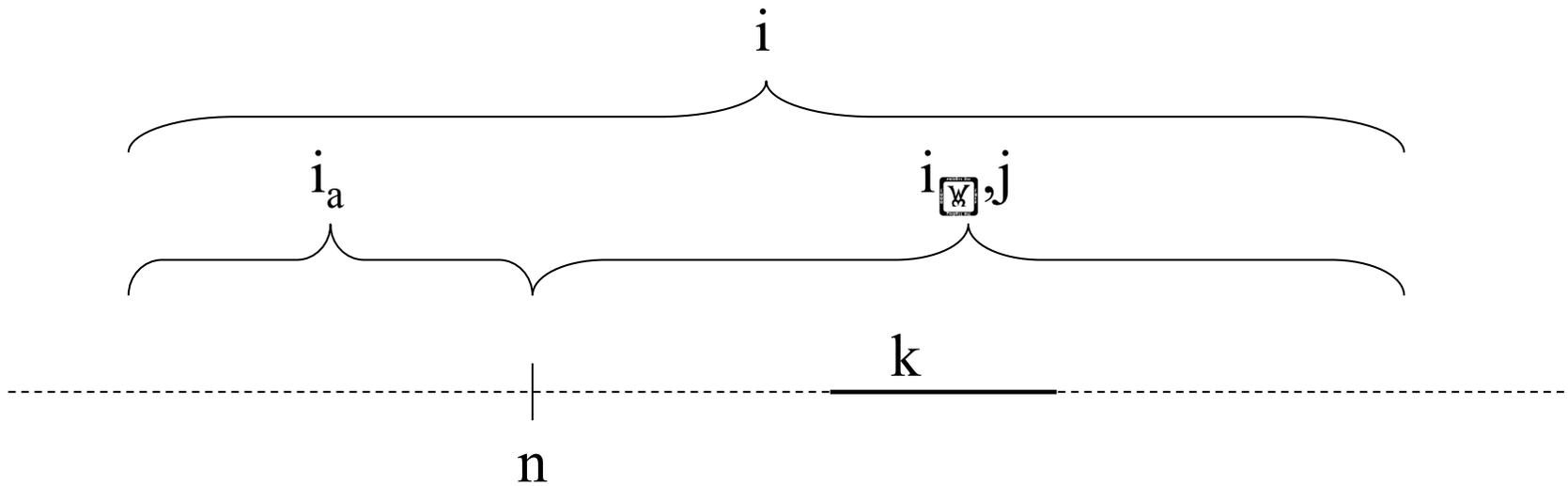
Future perfect

- *Ik zal hebben gewandeld* 'I will have walked'
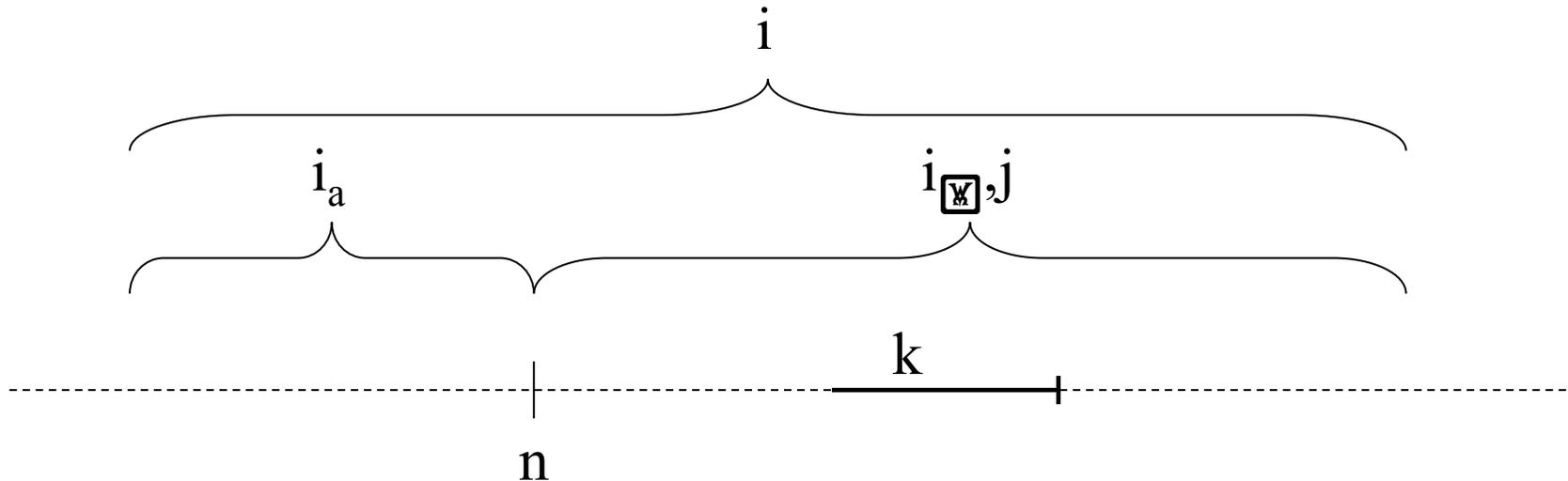
- The difference between the future and the future perfect is that in the former the focus is on the eventuality as a whole, whereas in the latter the focus is on the completion of the eventuality. The difference is especially clear in the case of telic events; see examples (4) and (5).

The need to distinguish *i* and *j*

(6) a. We zijn thuis.
      we are at.home
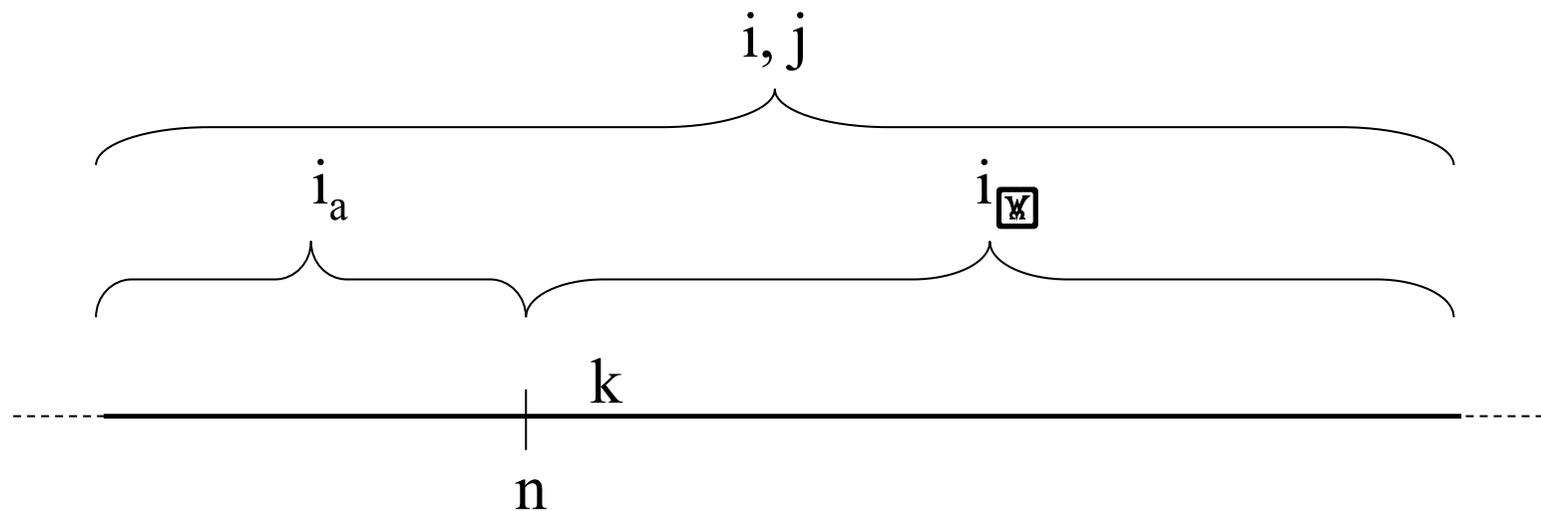
The need to distinguish *i* and *j*

(6) b. We zijn vandaag thuis.
    we   are   today   at.home
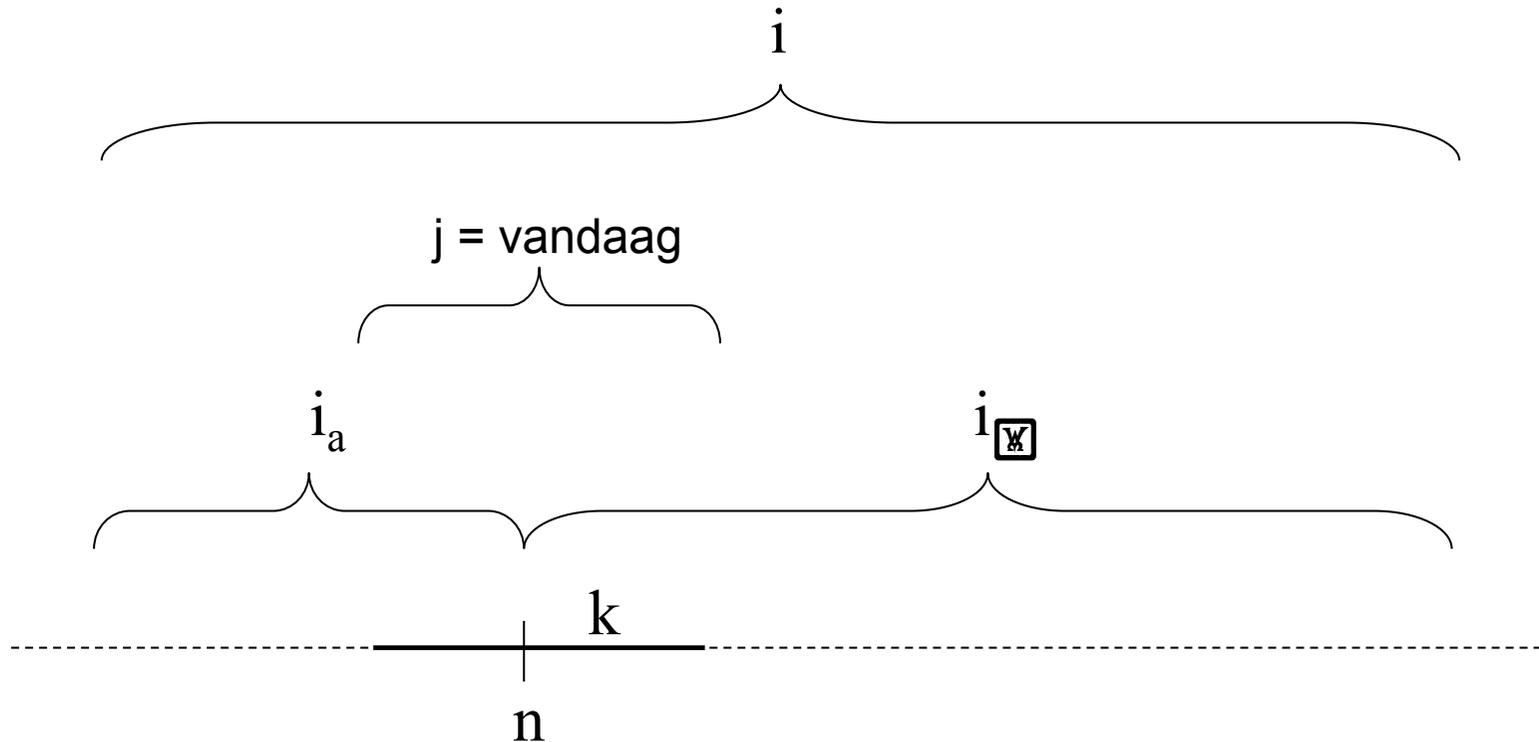
The need to distinguish *i* and *j*

(6) c. We zijn morgen   thuis.
         we   are   tomorrow at.home
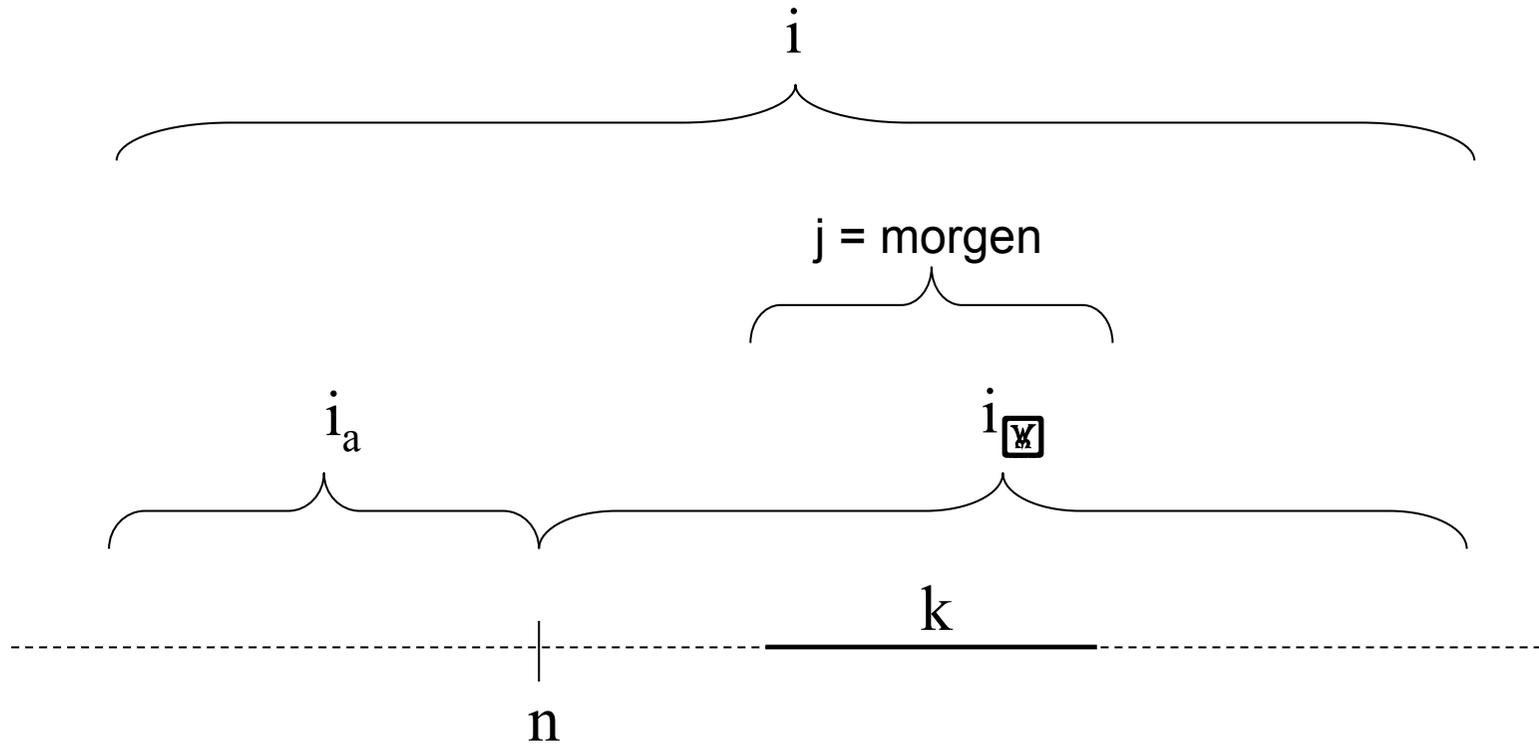
The need to distinguish *i* and *j*

(6) d. We zijn vandaag thuis   en   morgen   in Utrecht.
        we are   today   at.home and tomorrow in Utrecht
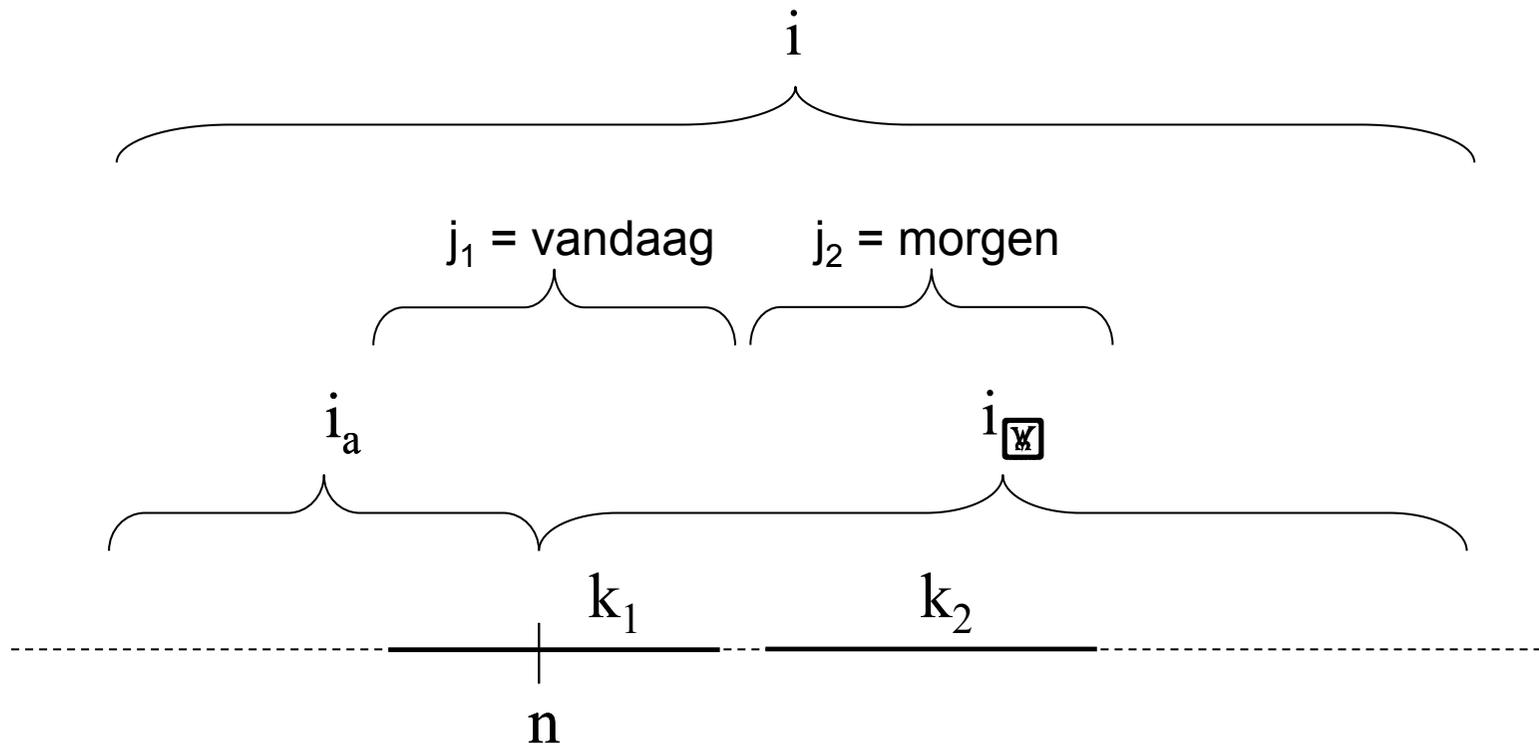
Past tense interval

- The past tense domain involves some larger time interval, which can be subdivided in smaller intervals in a similar way as the present tense domain; cf. (7).

- The fact that the present tense subintervals are defined by means of speech time n and the fact that we find similar subintervals in the past tense suggest that we must postulate a virtual "speech time in the past", which we will refer to as n' .
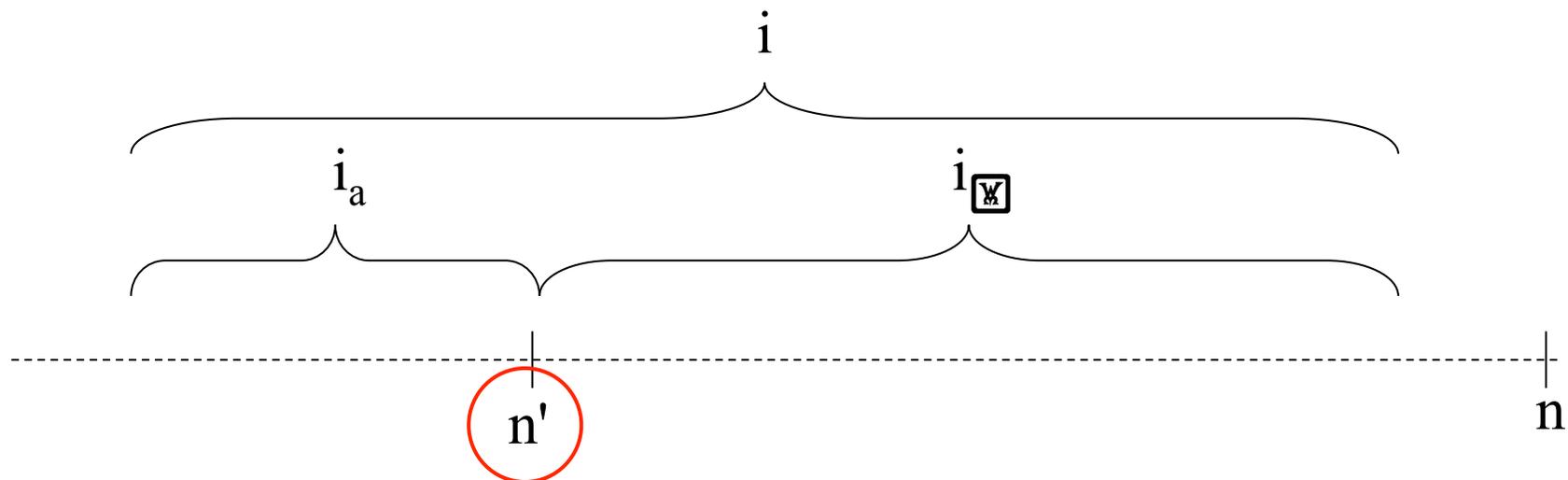
Past tense interval (continued)

- To make the notion of *n'* a bit more concrete, assume that the speaker of the discourse chunk in (7) giving a report about a conversation he has had with Els. We may then identify *n*⬚ with the moment that this conversation took place; the speaker is repeating the information provided by Els from the perspective of that specific point in time.

Simple past

- *Ik wandelde* 'I am walking'
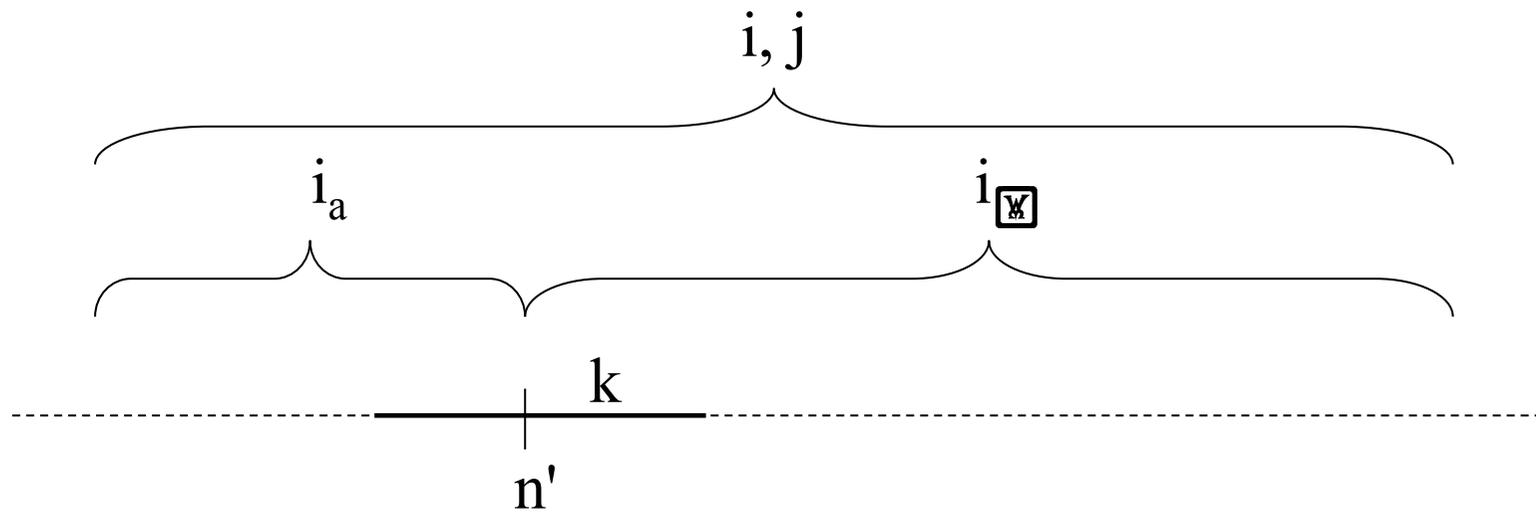
Past Perfect

- *Ik had gewandeld* 'I had walked'
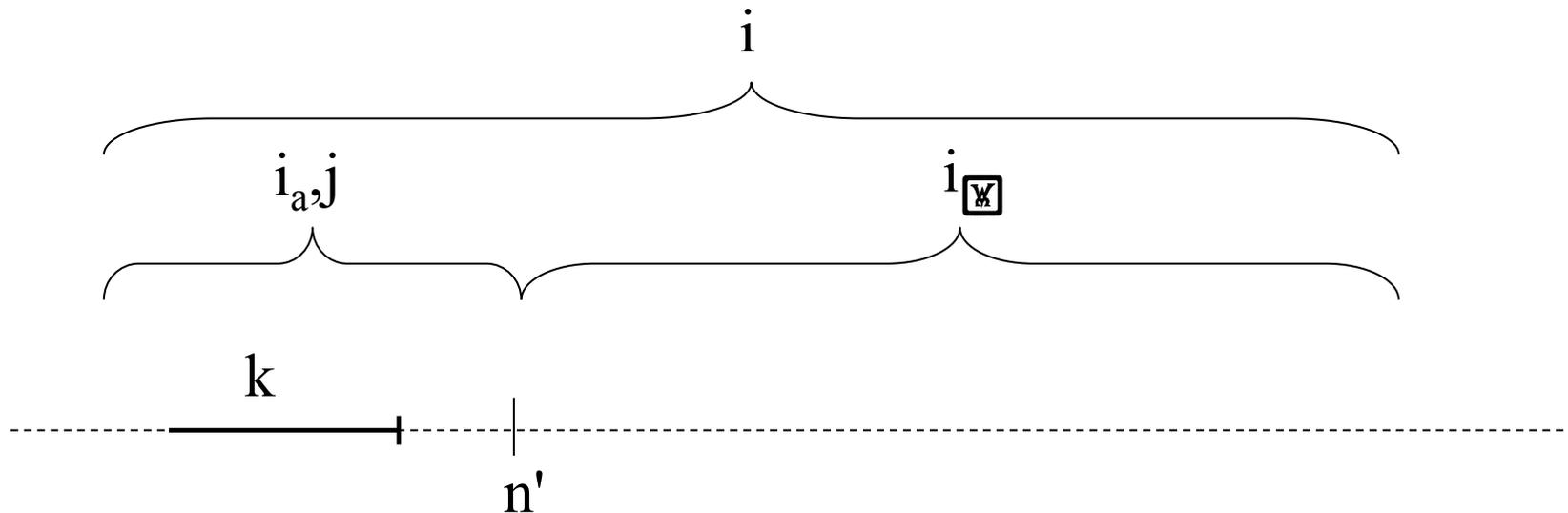
- Since the perfect tense can be described without appealing to the internal temporal structure of the event, we adopt a non-aspectual view on the perfect tense.

Future in the past

- *Ik zou wandelen* 'I would walk'
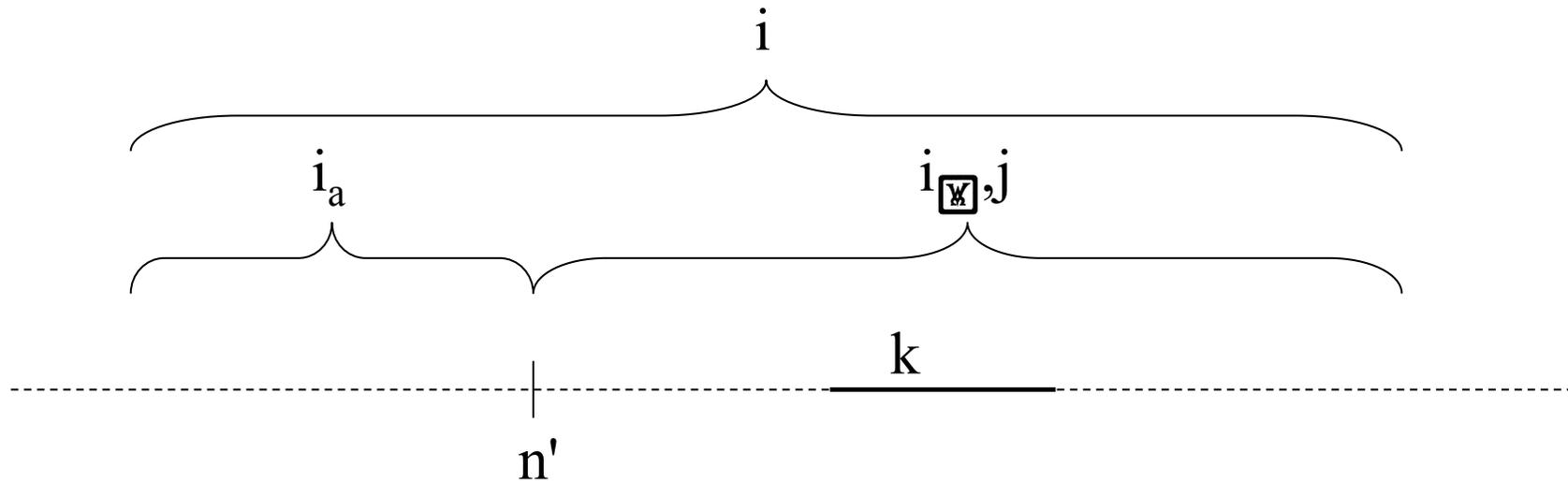
Future perfect in the past

- *Ik zou hebben gewandeld* 'I would have walked'
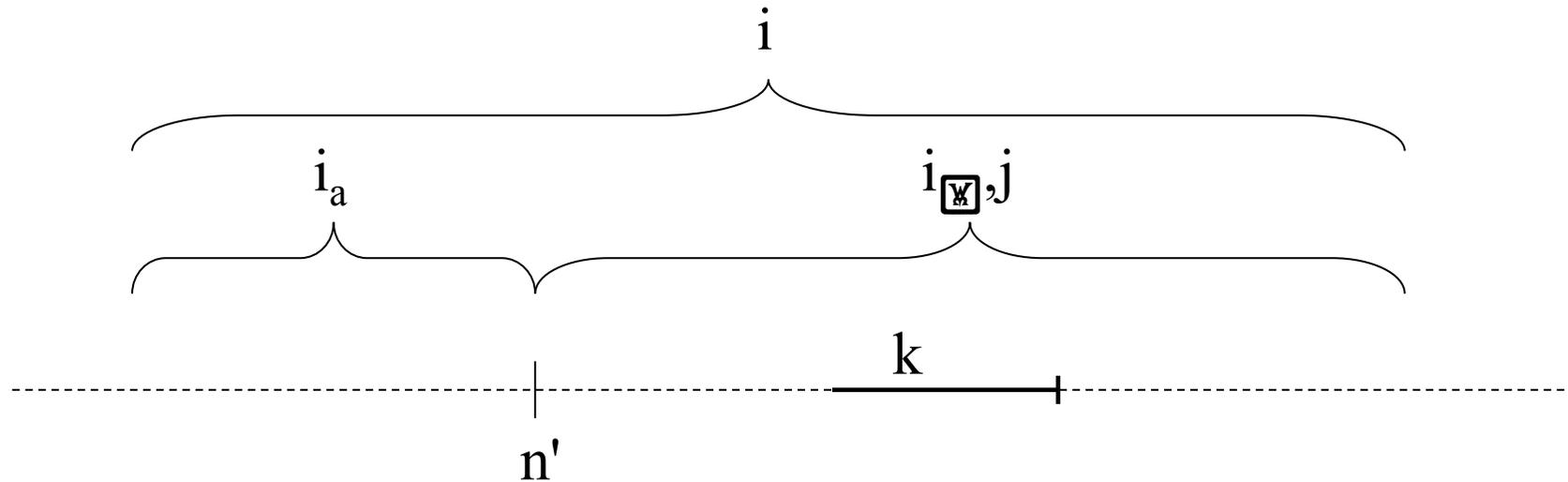
- The difference between the future in the past and the future perfect in the past is that in the former the focus is on the eventuality as a whole, whereas in the latter the focus is on the completion of the eventuality. The difference is especially clear in the case of telic events: see examples (8) and (9).

The definition of [±past]

(10) The binary tense oppositions according to Verkuyl (2008):
    a. [±past]: Present (i o n) - Past ($i < n$)
    b. [±posterior]: Synchronous (j ⊻ i) - Posterior ($i_a < j$)
    c. [±perfect]: Imperfect ($k \preceq j$) - Perfect ($k \prec j$)

Problems

(11) a. Els zou   gisteren   wandelen.   [past *i* precedes *n*]
       Els would yesterday walk
      b. Els zou   morgen   wandelen.   [past *i* includes *n*]
       Els would tomorrow walk

(12) a. Jan zou   gisteren   een brief geschreven hebben.   [past *i* precedes *n*]
       Jan would yesterday a letter   written   have
       'Jan would have written a letter yesterday.'
      b. Jan zou   morgen   een brief geschreven hebben.   [past *i* includes *n*]
       Jan would tomorrow a letter   written   have
       'Jan would have written a letter tomorrow.'

The definition of [±past]

(13) The binary tense oppositions (revised)
   a. [±past]: Present (i o n) - Past (i o n'), where n' < n
   b. [±posterior]: Synchronous (j ⊠ i) - Posterior (i < j)
   c. [±perfect]: Imperfect (k $\preceq$ j) - Perfect (k $\prec$ j)

- Advantages:
  - We account for the acceptability of (11b) and (12b): like the present, the past *i* can stretch infinitely and there is therefore no *a priori* reason to assume that it cannot include *n.*
  - (13a) solves the problem that *n* ⊠ does not play an explicit role in the definitions of the three binary oppositions in (10) and is therefore in a sense left undefined.
  - The definition in (13a) emphasizes the parallel architecture of the present and the past, given that they have essentially the same definition.
  - (13a) leaves the central claim of binary tense theory intact; we are still dealing with a binary opposition.

Present/Past:
a matter of perspective

- Sequence of Tense

    - $Jan vertrok morgen.
      Jan left   tomorrow
      'Jan was leaving tomorrow.'
    - Els zei   [dat Jan morgen   vertrok].
      Els said   that Jan tomorrow come
      'Els said that Jan was leaving tomorrow.'

    - Jan zei   [dat Els zwanger was].
      Jan said that Els pregnant was
      'Jan said that Els was pregnant.'
    - Jan zei   [dat Els zwanger is].
      Jan said that Els pregnant is
      'Jan said that Els is pregnant.'

Present/Past: a matter of perspective

- Sequence of Tense

  - Jan zei   [dat Els zwanger was];
    Jan said that Els pregnant was
    ze   zal ondertussen wel moeder zijn.
    she will by.now   prt mother be
    'Jan said that Els was pregnant; she will probably be a mother by now.'
  - $Jan zei   [dat Els zwanger is];
    Jan said that Els pregnant is
    ze   zal ondertussen wel moeder zijn.
     she will by.now   prt   mother be
    'Jan said that Els is pregnant; she will probably be a mother by now.'

Present/Past:
a matter of perspective

- Retoric questions
  - *Je komt morgen toch?*

    you come tomorrow prt

    'You have the intention to come tomorrow, don't you?'

    - *According to my current information, you will be here tomorrow; Is this information still valid?*

  - *Je kwam morgen toch?*

    you come tomorrow prt

    'You had the intention to come tomorrow, didn't you?'

    - *According to the information I had some time ago, you will be here tomorrow; Is this information still valid?*

Present/Past: a matter of perspective

- Reminder questions
  - Wie komt   er   morgen?

    who comes there tomorrow

    'Who is coming tomorrow?'

    - *According to my current information, someone will be coming tomorrow; Who is this person?*
  - Wie kwam er   morgen   ook al weer?

    who came there tomorrow untranslatable

    'Please, tell me again who will come tomorrow?'

    - *According to the information I had some time ago, someone will be coming tomorrow; I even recall that I had information about the identity of this person, but I forgot. Please, can you remind me?*

The interaction of Modality and Binary Tense Theory

Our claims on Dutch (repeated)

- [±past] is overtly expressed by means of verbal inflection.
- [±perfect] is overtly expressed by means of past participles or perfect auxiliaries.
- [±posterior] is not overtly expressed by means of the auxiliary *zullen* 'will' .
- The verb *zullen* is an epistemic modal.
- The future interpretation of certain sentences with *zullen* is due to pragmatics (Grice's Maxim of Quantity).

Epistemic modality

- Epistemic modality is concerned with the mental representation of the world of the language user, who may include:
  - states-of-affairs as they will hold in the future
  - states-of-affairs different from what they are in the actual world
  - etc.
- Epistemic modality therefore evokes the notion of possible worlds.
- Epistemic verbs, adverbs, etc. may quantify over possible worlds.

Epistemic modality (continued)
Barbiers (1995)

(19) a. Jan moet schaatsen.
  Jan must skate

  b. (i) Dispositional: Jan definitely wants to skate.
    (ii) Directed deontic: Jan has the obligation to skate.
   (iii) Non-directed deontic: It is required that Jan skate.
   (iv) Probability: It must be the case that Jan skates.

(20) a. Jan heeft gisteren   moeten schaatsen.   [non-epistemic reading]
     Jan has   yesterday must   skate

  b. Jan moet gisteren   hebben geschaatst.   [epistemic reading]
     Jan must yesterday have   skated

     'It must be the case that Jan has skated yesterday .'

Moeten 'has to' (universal quantification)

(21b) Dat huis moet instorten 'that house has to collapse'

i

i_a

$i_{\boxed{\text{w}}}, j$

k — — — world 2

k — — — world 3

n

k — — — world 4
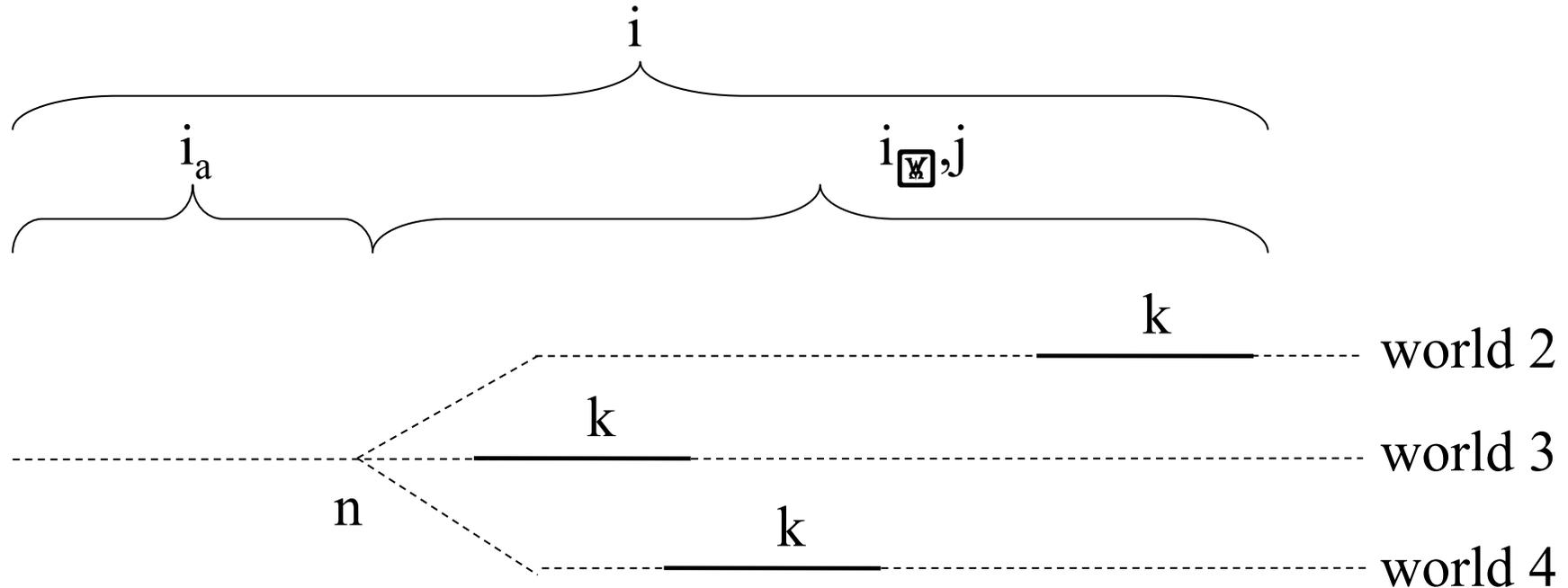
Temporal effect: epistemic *moeten* triggers a future interpretation.

Maxim of Quantity: if the speaker knows that the event took place before n, he could be more precise by using the present perfect:
Dat huis is ingestort 'That house has collapsed'.

Kunnen 'may' (existential quantification)

(21c) Dat huis kan instorten 'that house may collapse'
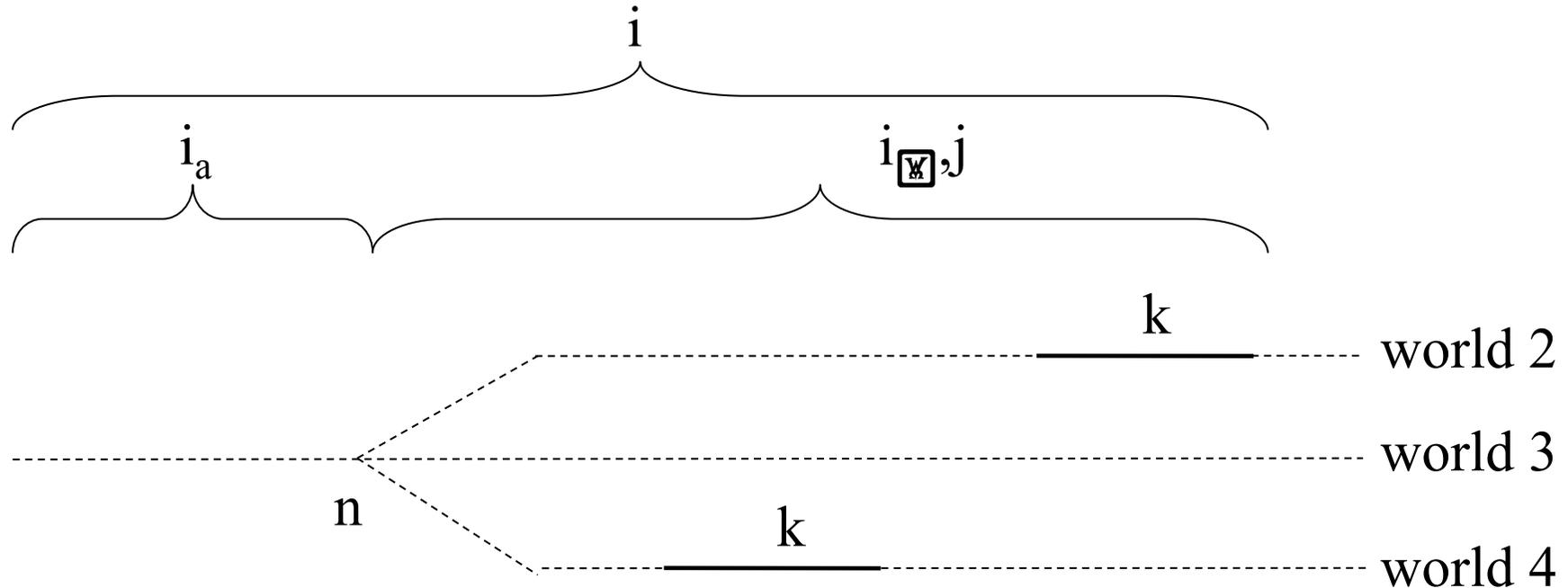
Temporal effect: epistemic *kunnen* triggers a future interpretation.

Maxim of Quantity: if the speaker knows that the event took place before *n*, he could be more precise by using the present perfect: *Dat huis is ingestort* 'That house has collapsed'.

- Split-off point of the possible worlds may also precede *n:*
  - When the speaker is underinformed, eventuality *k* can precede *n*
  - When the speaker is not underinformed, eventuality *k* cannot precede *n* (maxim of quantity favors the present perfect)

(24) Mijn huis moet deze week instorten 'My house has to collapse this week'
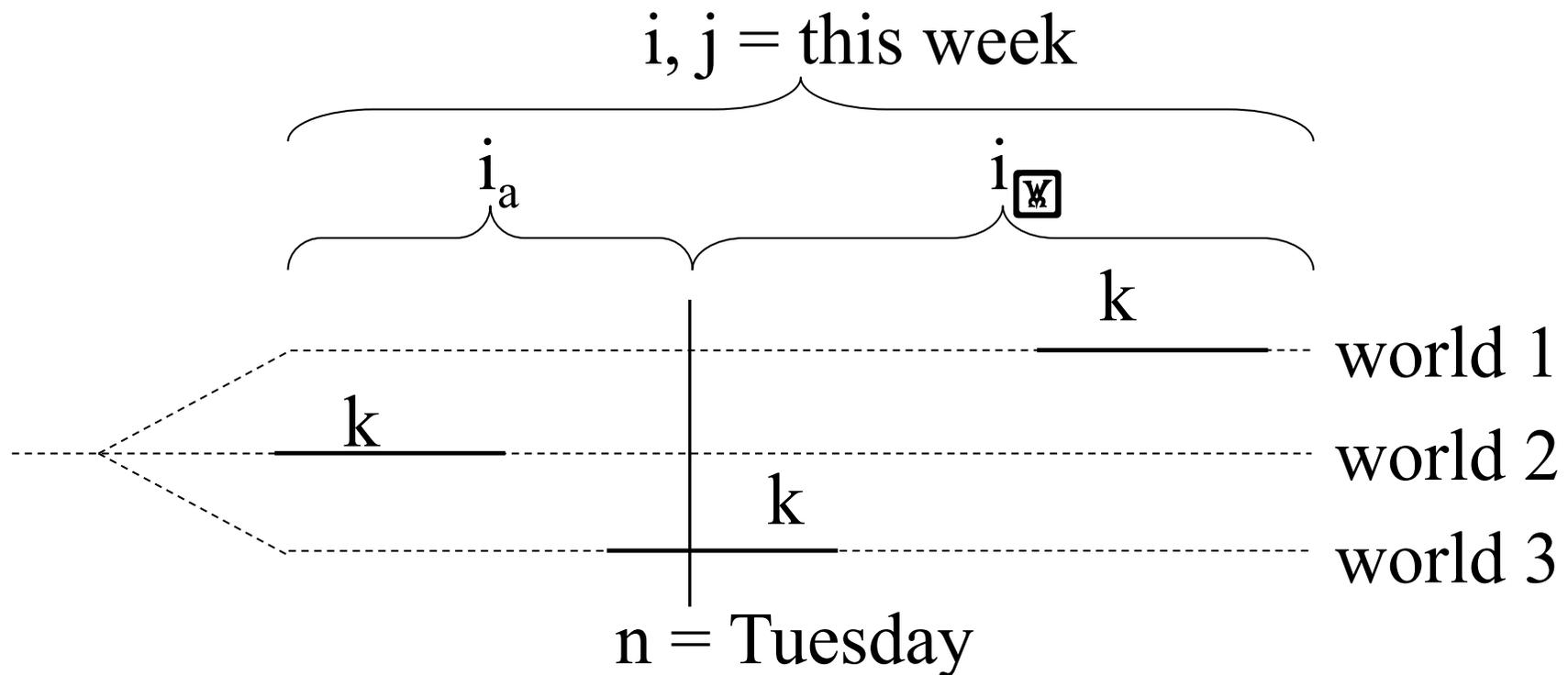
Summary

- Modal verbs evoke possible worlds and may restrict the temporal interpretation of the sentence.
- Whether or not the temporal interpretation of j is restricted to $i_\Diamond$, depends on the split-off point of the possible worlds.
  - Split-off point is $n \rightarrow$ future reading (maxim of quantity)
  - Split-off point precedes n: the interpretation depends on the knowledge state of the speaker:
    - The speaker is underinformed (that is, not able to immediately observe whether the event denoted by the verb takes place)
      $\rightarrow$ non-future reading
    - The speaker is not underinformed (that is, able to immediately observe whether the event denoted by the verb takes place)
      $\rightarrow$ future reading (maxim of quantity)

Intermezzo:
Special effects in the past tense

- We take it for granted that the Maxim of Quantity triggers a future interpretations of simple past sentences when the split-off of the possible worlds is n': if the speaker(-in-the-past) knows that the event took place before n', he can be more precise by using the past perfect.

- In addition, the Maxim of Quantity triggers other effects that are related to the knowledge state of the speaker-in-the-present.

(22a) Dat huis moest (wel) instorten 'that house had to collapse'
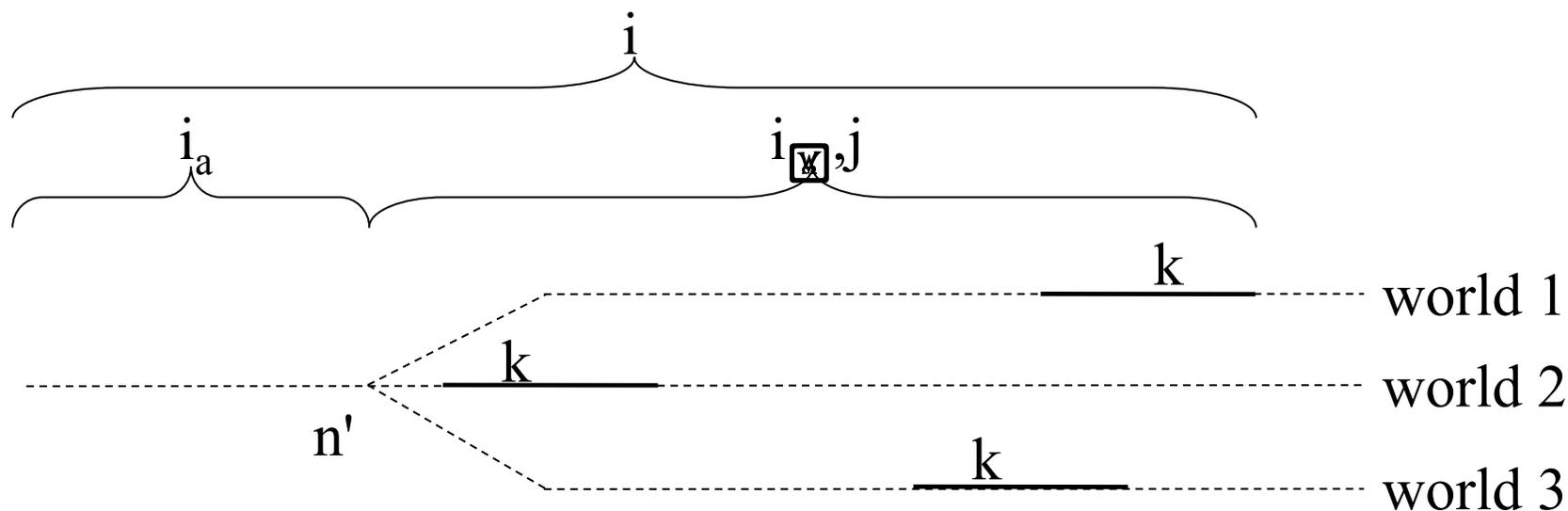
Maxim of Quantity: future reading (see previous slide).

Special effect: since speech time *n* may be included in the past tense domain, example (22a) would be true when the event takes place AFTER *n.* Nevertheless (22a) suggests that the house has already collapsed at *n.*

Maxim of Quantity: if the speaker-in-the-present knows that the event did not take yet place before *n*, he can be more precise by using the simple present/future: *Dat huis moet wel instorten*.

(22b) Dat huis kon (elk moment) instorten 'that house could collapse'
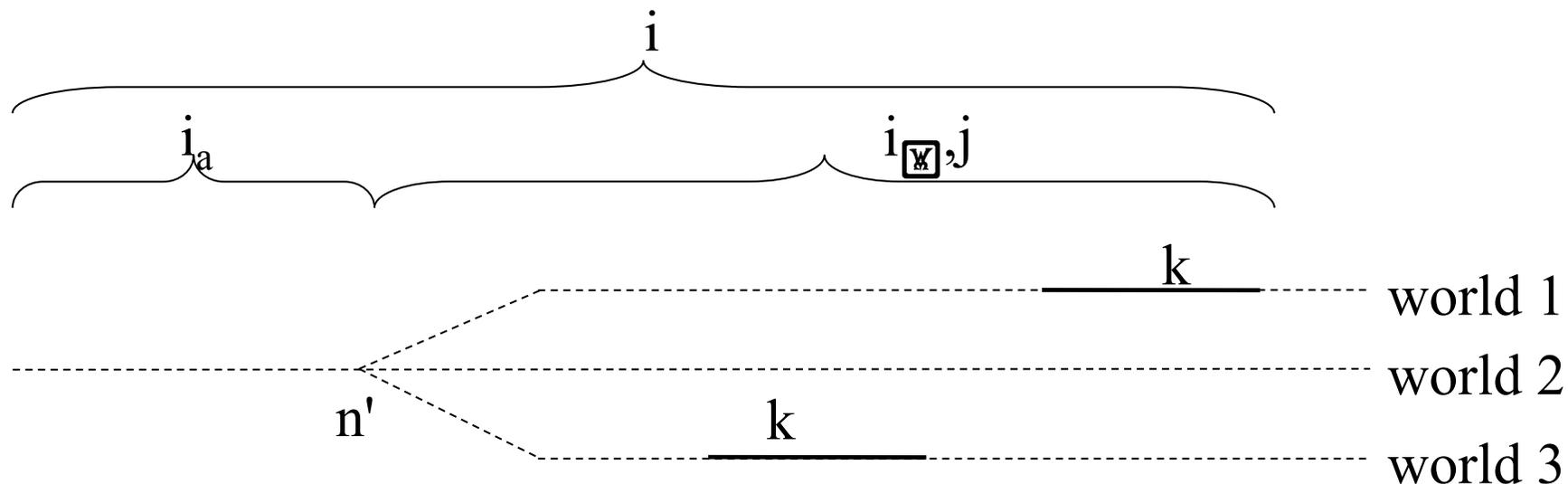
Maxim of Quantity: future reading (see earlier slide).

Special effect: Example (22b) would be true when the event has taken place BEFORE *n.* Nevertheless (22b) is counterfactual: it is normally used when the event denoted by the main verb did not take place in the actual world of the speaker-in-the-present; certain measures have prevented the event from taking place or we had a lucky escape.

(22b) Dat huis kon (elk moment) instorten 'that house could collapse'
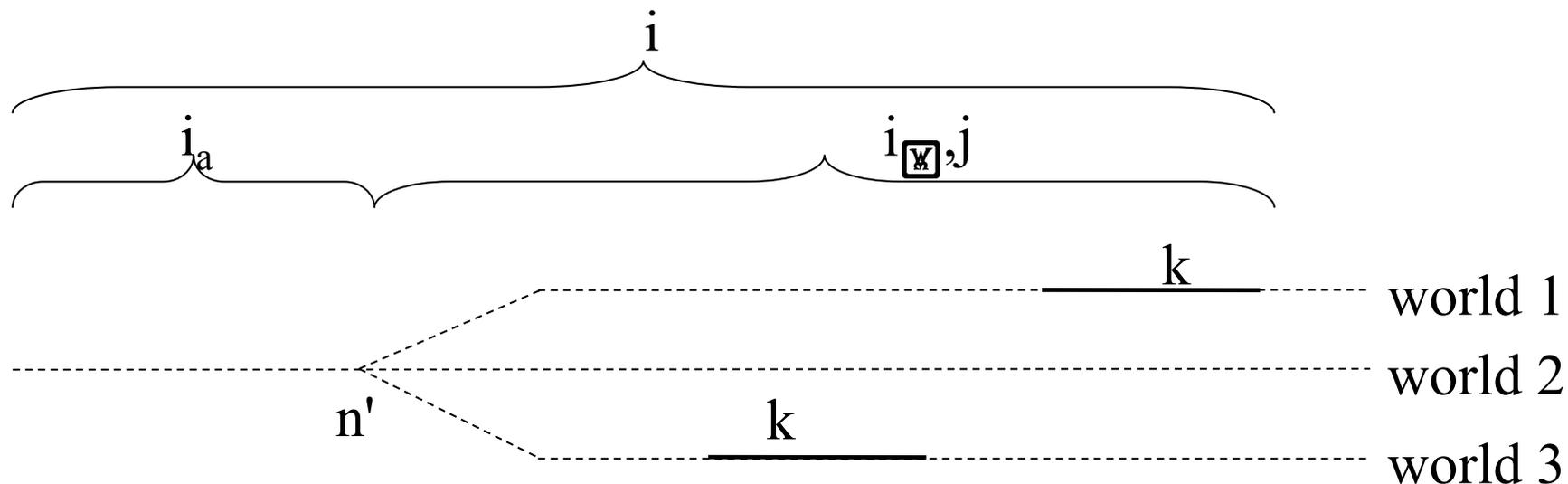
- **The counterfactual interpretation is the result of the Maxim of Quantity:**
    - if the speaker-in-the-present knows that the event took place before n, he can be more precise by using the (past/present) perfect: *Dat huis was/is ingestort* 'that house was/is collapsed'.
    - if the speaker-in-the-present knows that the event did not take place before n, he can express the existential reading more precisely by using the present: *Dat huis kan (elk moment) instorten* 'that house may collapse (any moment'.

The verb zullen 'will'

- Traditional grammar claims that *zullen* is homonymous:
    - Future auxiliary (temporal reading):
      Zij   zal dat boek morgen   versturen. (29a)
      she will that book tomorrow send

      'She will send that book tomorrow.'

    - Modal verb (probability reading):
      Zij   zal dat boek wel versturen. (29b)
      she will that book prt send

      'It will probably be the case that she will send that book.'

Problem

- ANS notes that examples with a probability reading normally contain modal particles like *wel; cf. (29b)* → probability reading need not be an inherent part of the meaning of *zullen,* but can be a semantic contribution of the particle.

- Probability readings may also arise without *zullen*:

  (31)   Zij stuurt dat boek wel.
          she sends that book prt
          'It will very likely be the case that she will send the book.'

- Examples with a probability reading may be supplemented with modal adverbs like *zeker 'certainly' or misschien 'maybe'* → probability reading cannot be a part of the meaning of *zullen* since this may be expected to give rise to a contradiction/tautology.

  (32) b. Zij   zal dat boek zeker/misschien wel sturen.
            she will that book certainly/maybe prt send
            'It is certainly/maybe the case that she will send the book.'

- *Conclusion:* "Future" and "modal" *zullen* are the same.

Zullen is not a future auxiliary

- Split-off point of the possible worlds may also precede *n:*
  - When the speaker is underinformed eventuality *k* can precede *n*
  - When the speaker is not underinformed eventuality *k* cannot precede *n* (maxim of quantity favors the present perfect)

(34) Mijn huis zal deze week instorten 'This house will collapse this week'

$$i, j = \text{this week}$$

i_a

$i_{\boxtimes}$

k

world 1

k

world 2

k

world 3

$$n = \text{Tuesday}$$
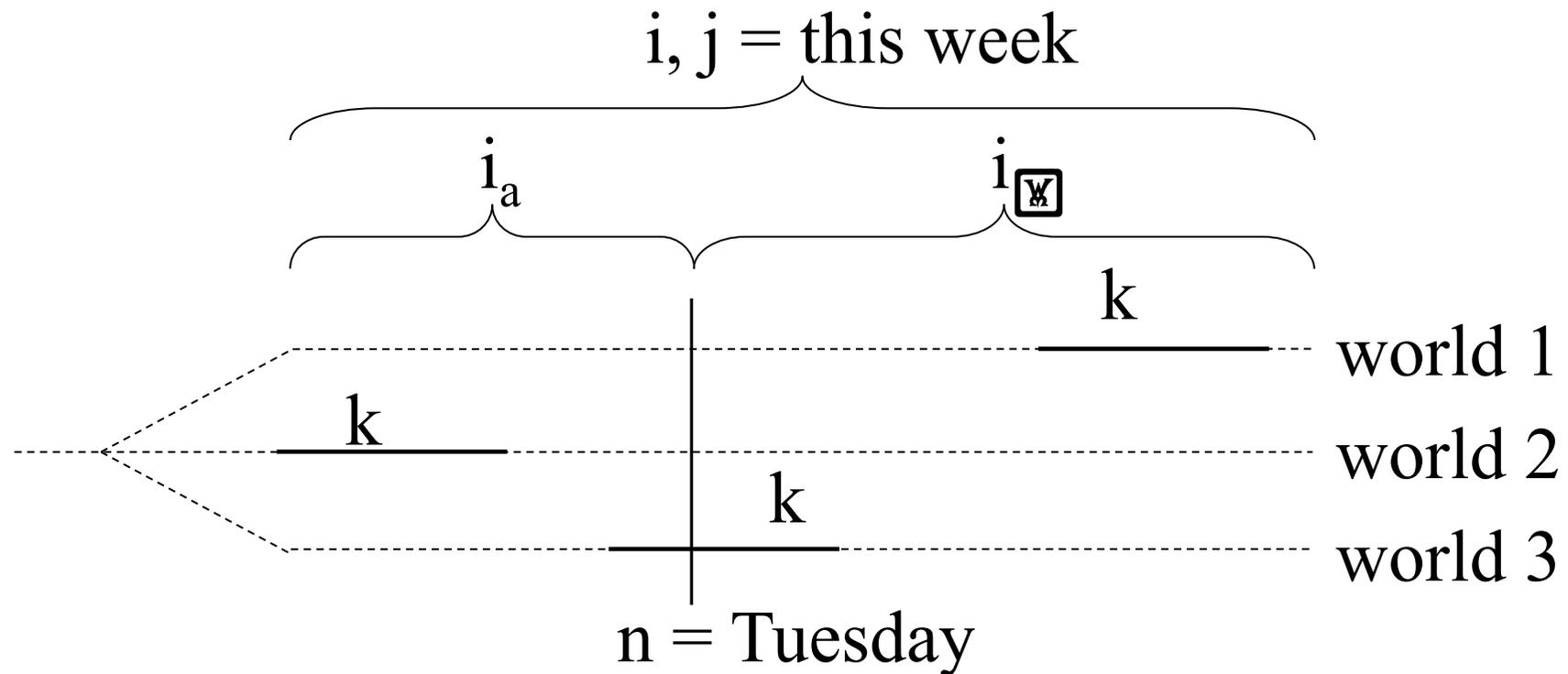
Zullen is an epistemic modal

- It evokes the notion of possible world ...
  - but has no inherent quantificational force; cf. (31)
  - although its default value seems to be universal quantification.

- The modal verb *zullen* provides a subjective assessment of the truth of the proposition expressed by the lexical projection of the embedded main verb

- We adopt the the classification of epistemic modality by Kant (1781) and Palmer (2001).

Zullen is an epistemic modal

- Epistemic modality (Kant 1781 and Palmer 2001).
  - apodeictical/deductive:
    proposition *p* is the only possible conclusion
    - Marie moet nu thuis zijn 'Marie must be at home now'

  - problematic/speculative:
    proposition *p* is a possible conclusion
    - Marie kan nu thuis zijn 'Marie may be at home now'

  - assertorical/assumptive:
    proposition *p* is a reasonable conclusion
    - Marie zal nu thuis zijn 'Marie will be at home now''

Zullen is an epistemic modal (Additional support)

- the two occurrences of *zullen* in (29) exhibit syntactic behavior of epistemic verbs; they normally do not appear as the finite verb in perfect tense constructions

    (33)a. Zij   zal dat boek morgen   verstuurd hebben.

       she will that book tomorrow sent   have
       'She will have sent that book tomorrow.'

    b. Zij   zal het boek wel verstuurd hebben.

       she will the book prt sent   have

       'She will probably have sent the book.'

Summary

- *Zullen* evoke possible worlds and may restrict the temporal interpretation of the sentence.

- Whether or not the temporal interpretation of j is restricted to $i_\Diamond$, depends on the split-off point of the possible worlds.

  - Split-off point is $n \rightarrow$ future reading *(maxim of quantity)*

  - Split-off point precedes n: the interpretation depends on the knowledge state of the speaker:

    - The speaker is underinformed (that is, not able to immediately observe whether the event denoted by the verb takes place) $\rightarrow$ non-future reading

    - The speaker is not underinformed (that is, able to immediately observe whether the event denoted by the verb takes place) $\rightarrow$ future reading *(maxim of quantity)*

Consequences for
the Dutch verbal tense system

- [±past] is overtly expressed by inflection
- [±perfect] is overtly expressed by means of past participles or perfect auxiliaries
- [±posterior] is not overtly expressed by morphological or syntactic means, but derived pragmatically (Maxim of Quantity)
- The verbal tense system is therefore as follows:

	present	past
imperfect	simple present *Ik wandel/zal wandelen* I walk/I will walk	simple past *Ik wandelde/zou wandelen* I walked/would walk
perfect	present perfect *Ik heb/zal hebben gewandeld* I have/will have walked	past perfect *Ik had/zou hebben gewandeld* I had/would have walked

The uses of the Dutch tenses

- For simplicity we will only discuss cases in the simple present and simple past, with focus on the former.
- For reasons of time, cases in the perfect are not discussed; see written version of the paper.
- Contextual information will be shown
  - to restrict the interpretation (Maxim of Quantity)
  - or to make special readings available (habitual and generic clauses)
- The split-off point of possible worlds is relevant for distinguishing conditionals from hypotheticals and counterfactuals.

Simple tenses -- Default meaning

- Els leest vandaag mijn artikel
  'Els is reading my paper today'
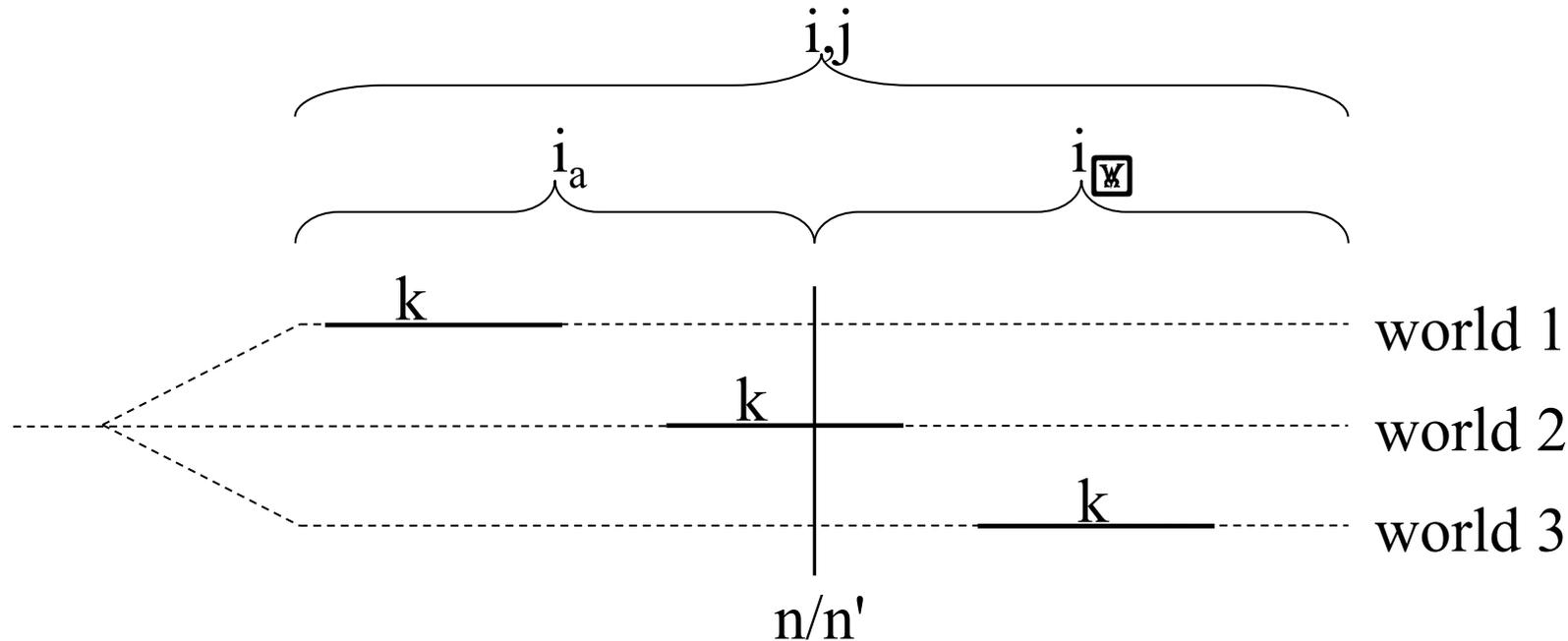
- Note on present perfect: The fact that the present perfect may likewise refer to a perfect event overlapping or following *n* does not follow from the Reichenbachian approaches to the verbal tense system; these approaches must treat such cases as special uses of the present perfect.

More restricted interpretations

- The default interpretation may be overruled by contextual information, which may gives rise to more restricted interpretations of the simple present. The information may be of:
    - a non-linguistic nature
    - a linguistic nature (adverbial phrases of time)

Simple tenses and non-linguistic context

- The non-linguistic context determines what the split-off point of the possible worlds is and is thus able to restrict j (= time interval during which the event may take place)

    - if the speaker is able to immediately observe whether the event denoted by the verb takes place, the split-off point is n.

    - Simple tense cannot be used to refer to an event preceding n (that is, completed within i_a) in such cases; the *Maxim of Quantity* prefers the use of the perfect in such cases as this would be more informative.

- This results in the following (pragmatically restricted) mental temporal representation:
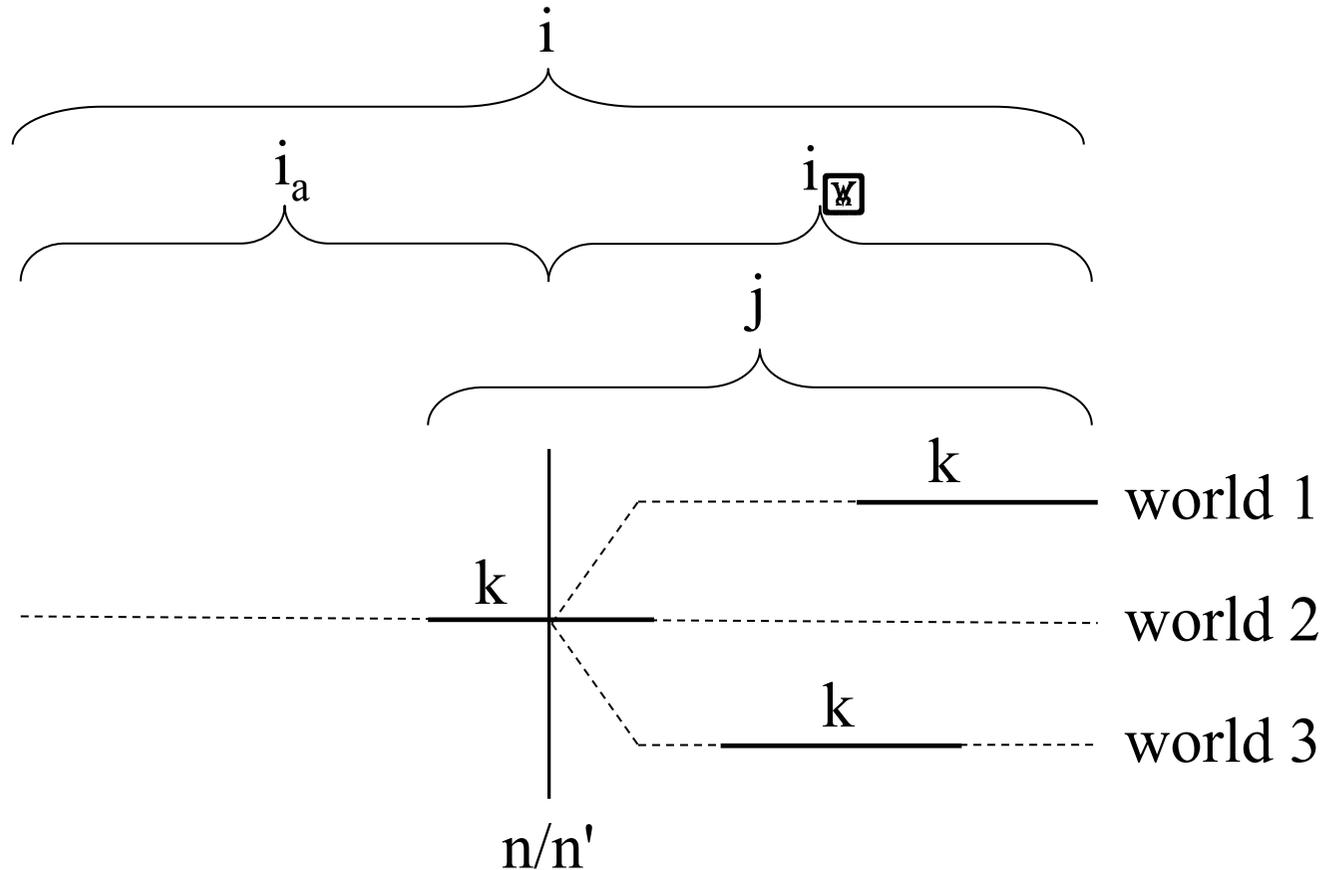
Simple tenses and non-linguistic context (continued)

- The non-linguistic context determines what the split-off point of the possible worlds is and is thus able to restrict j (= time interval during which the event may take place)

  - if the speaker is not able to immediately observe whether the event denoted by the verb takes place, the split-off point precedes n.

  - Simple tense can be used to refer to an event preceding n in such cases; this can be made clear by means of adverbial modifiers.

Adverbial modification

- Adverbial modifiers may restrict j
- Context: the speaker is not able to immediately observe whether the event denoted by the verb takes place
- Speech time n: noon

(61) a. Els leest   vanmorgen   mijn artikel.   [j < n]
       Els reads this morning my paper
       'Els is reading my paper this morning.'
     b. Els leest   op dit moment   mijn artikel.   [j includes n]
       Els reads at this moment my paper
       'Els is reading my paper at this moment.'
     c. Els leest   vanmiddag   mijn artikel.   [n < j]
       Els reads this.afternoon my paper
       'Els is reading my paper this afternoon.'

Representation (61a)
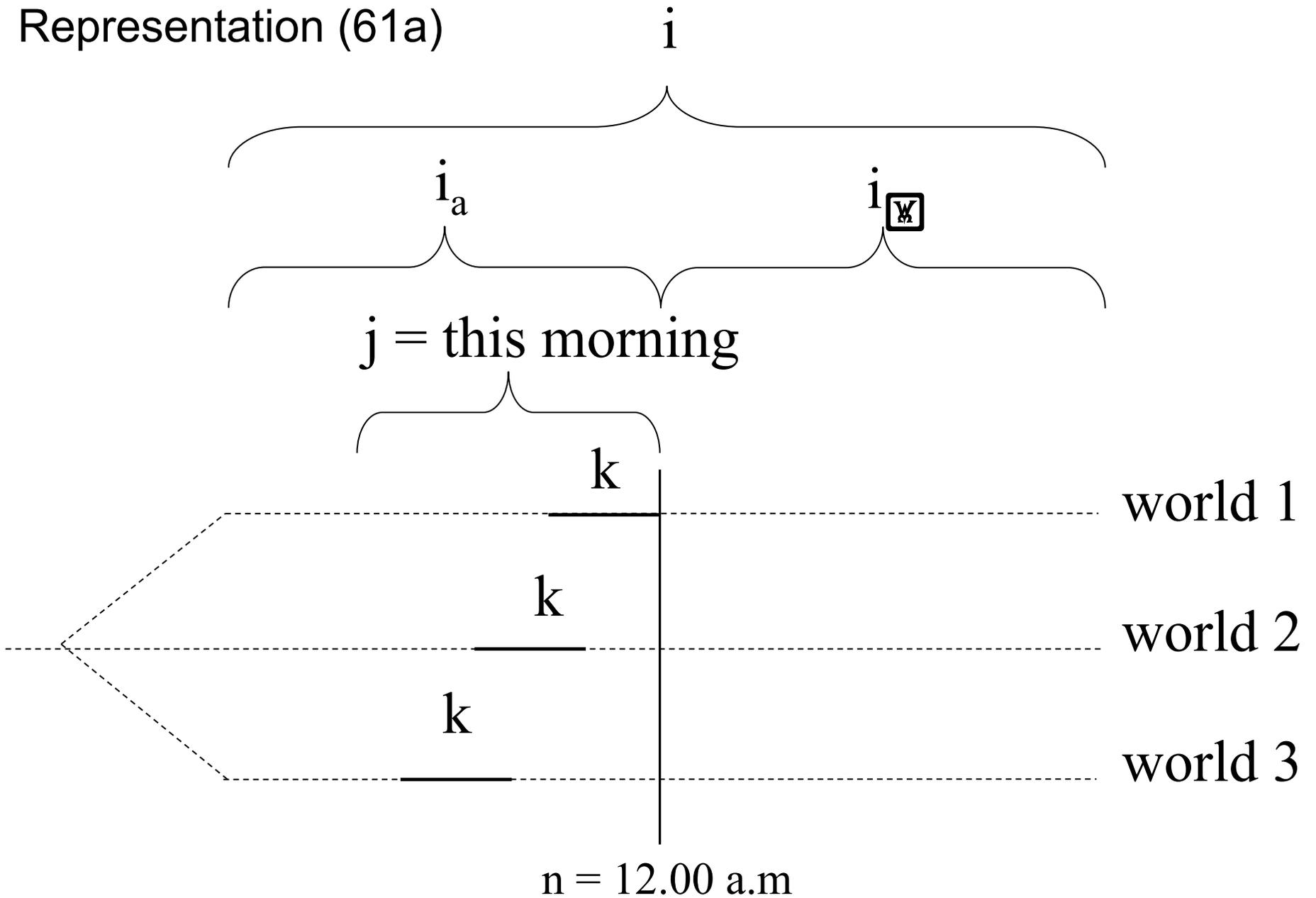
Simple tenses and multiple events

(64) Ik eet vandaag drie keer: vanochtend, vanmiddag en vanavond.
     'I will eat three times today: this morning, this afternoon and tonight.'

i = today

i_a i

j_1 = morning j_2 = afternoon j_3 = tonight

k_1 k_2 k_3

n = 12.00 a.m
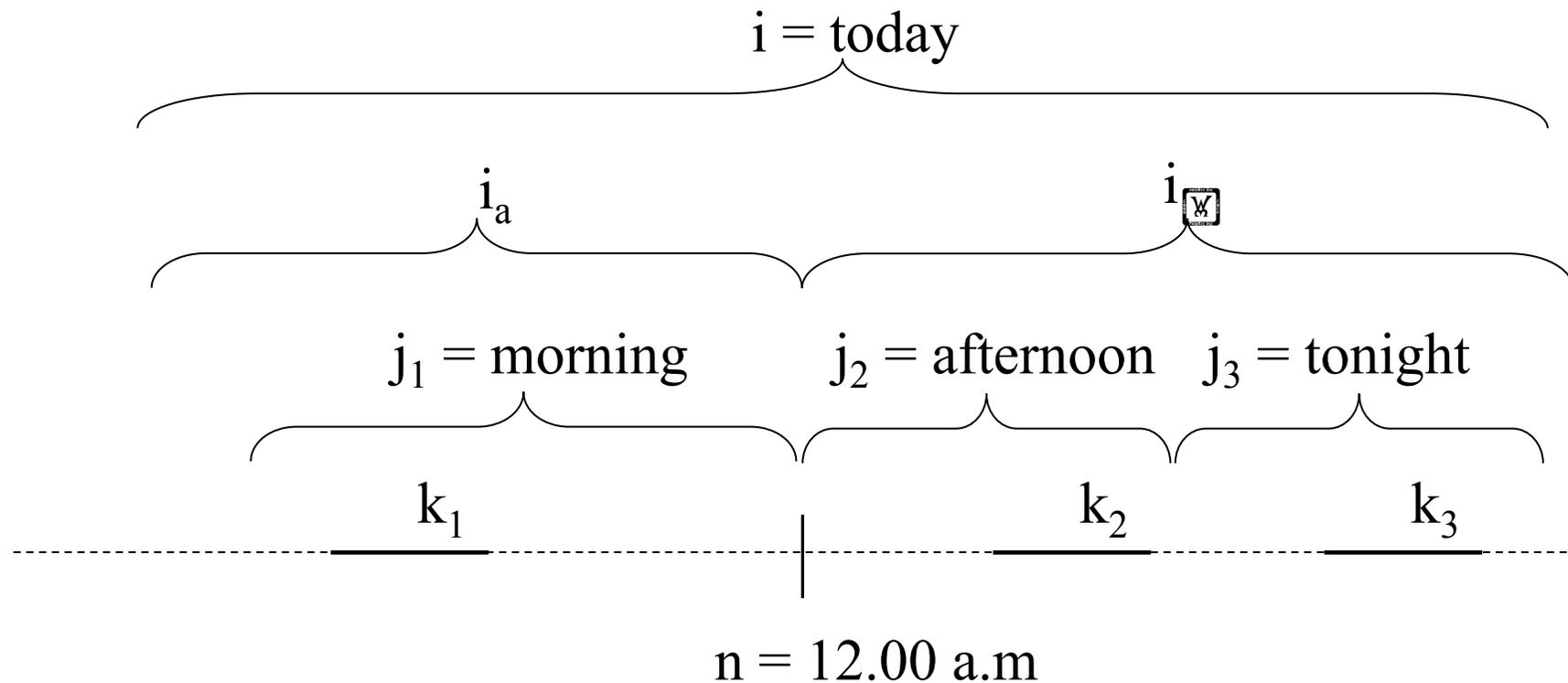
Present tense and habitual/generic clauses

- The fact that the present/past tense interval can contain multiple occurrences of the event denoted by the verb is exploited to the full in habitual constructions like *Jan rookt 'Jan smokes',* in which a regularly occurring event can be expressed without the use of an overt adverbial phrase; see examples (66).

- From such habitual examples, it seems just a small step to get to truly generic examples like *De visarend jaagt op vis 'The Osprey hunts for fish' or De walvis is een zoogdier* 'The whale is a mammal' ; see examples (67).

- The fact that simple tenses can refer to multiple, habitual or generic events favors the binary tense theory over Reichenbachian approaches, which assume that the simple tense refers to a single point on the time axis; the simple tense must refer to a time interval to account for such cases.

Present: Conditionals and hypotheticals

- (68) Als ik genoeg geld heb, ga ik op vakantie.
  'Whenever/If I have enough money, I go on holiday.'
- This present tense example has two readings:
  - Conditional: ▢t: i overlaps with t (P → Q)
  - Hypothetical: ▢t: i▢ overlaps with t (P → Q)
- The conditional reading is the default reading and expresses that for any subinterval in the present tense interval for which it is true that the speaker has enough money, it will also be true that the speaker will go on holiday.

Present: Conditionals and hypotheticals

- (68) Als ik genoeg geld heb, ga ik op vakantie.
  'Whenever/If I have enough money, I go on holiday.'
- This present tense example has two readings:
  - Conditional: $\forall$t: i overlaps with t (P $\rightarrow$ Q)
  - Hypothetical: $\forall$t: $i_{\square}$ overlaps with t (P $\rightarrow$ Q)
- The hypothetical reading is pragmatic in nature and arises when the actualized part of the present tense interval is considered irrelevant: the utterance expresses that in any future possible world in which the speaker has enough money, he will go on holiday.
- The ambiguity between the two readings can be resolved by means of adverbial modification; see (69) and (70).
- Again it is pragmatics (the Maxim of Quantity) that determines which reading will be chosen.

Past: Conditionals and counterfactuals

- (71) Als ik genoeg geld had, ging ik op vakantie.
  '   Whenever/If I have enough money, I went on holiday.'
- This past tense example has two readings:
  - Conditional: $\forall$t: i overlaps with t (P $\rightarrow$ Q)
  - conterfactual: $\forall$t: i_w overlaps with t (P $\rightarrow$ Q)
- The conditional reading is again the default one and expresses that for any subinterval in the past tense interval *i* for which it was true that the speaker had money, it was also true that the speaker went on holiday.

Past: Conditionals and counterfactuals

- (71) Als ik genoeg geld had, ging ik op vakantie.
  '   Whenever/If I have enough money, I go on holiday.'
- This past tense example has two readings:
  - Conditional: $[\![V]\!]$t: i overlaps with t $(P \rightarrow Q)$
  - conterfactual: $[\![V]\!]$t: i$_{[\![V]\!]}$ overlaps with t $(P \rightarrow Q)$
- The counterfactual reading arises when the antecedent of the construction is not or not expected to be fulfilled in the speaker's actual world (within the relevant past tense domain):
  - If   the antecedent of the construction is   fulfilled before speech time *n* in the speaker's actual world, the speaker could be more precise by using example (72a).
  - If the speaker believes that the condition will be fulfilled in the future, he can be more precise by using, e.g., example (72b).
- The maxim of quantity therefore leaves the addressee no other choice than to conclude that the utterance in (71) is only relevant for possible worlds with a take-off point in the past tense domain other than the actual one. This leads to the counterfactual interpretation.

Conclusion

- The Dutch verbal tense system overtly expresses the features [±past] and [±perfect].
- [±synchronous] is determined on the basis of pragmatic information or other syntactic means (adverbial modification)
- Dutch therefore has no more than four verbal tenses: simple present/past and perfect present/past.
- Pragmatics and adverbial modification may not only give rise to the future reading but also to other more restricted and special readings.

Thank you!

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