Expressing weak definiteness: With or without article
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0 Introduction

Three different ways to convey ‘weak’ referentiality in PPs:

(1) a. Bare nominal: Peter was in prison.
   [English]
   b. Weak definite: Peter was in de gevangenis.
   [Dutch]
   c. Preposition-determiner contraction: Peter war im Gefängnis. [German]

One meaning (‘Peter was incarcerated’), characterized by
- weak referentiality of the noun phrase
- stereotypical, functional enrichment of the whole prepositional phrase
- lexical restrictions (functional noun, telic role)

Weak definite objects of prepositions, but also verbs:

(2) a. John went to the store.
   b. Jan ging naar de winkel.
   c. Hans ging in den Laden.

(3) a. Mary read the newspaper.
   b. Marie las de krant.
   c. Maria las die Zeitung.

With verbs, we also find bare weak definite objects; mainly restricted to musical instrument nouns (Bootj 2008, Claessen 2011).

(4) a. John played (the) guitar.
    b. Jan speelde gitaar.
    c. Hans spielte Gitarre.

To be distinguished from bare objects that are truth-conditionally equivalent with indefinites, but differ in discourse transparency (e.g. Espinal & McNally 2011).

(5) Busco piso. / Busco pis.
    look-1SG flat look-1SG flat
    ‘I’m looking for a flat.’ (I am flat-hunting.)

Question: how to account for the different ways in which the weak definite meaning is expressed?

Proposal (extending Aguilar & Zwarts 2011):
- uniqueness characterizes all these cases
- uniqueness usually based on reference to kind
- uniqueness operator applied at different positions
Structure of the talk
1 The variety of weak definites
2 The semantics of weak definites
3 The grammar of weak definites

1 The variety of weak definites

Three empirical domains:
- Weak definites (Carlson & Sussman 2005, …)
- Bare nominals (Stvan 1998, …)
- Preposition-determiner contraction (Hinrichs 1986, …)

1.1 Weak definites


(6) a. John went to the store/office/pub and so did Mary.
b. Each mobster went to the pub.
c. #Let’s go to the pub, and smash it, up.
d. Bob was in the pub the whole evening, first in pub A then in pub B.
e. #Bob is in the bar/café/restaurant.
f. #Bob is near/outside/under the pub.
g. #Bob is in the crowded pub.
h. #Bob is in the pub to do some plumbing.
i. The pub is no longer the heart of the community.

1.2 Bare nominals


(7) a. Mary went to bed/to school.
b. Marie ging naar bed/naar school.
c. Maria ging zu Bett. (much more limited in German)


(8) a. Peter went to prison and so did Paul.
b. Each mobster went to prison.
c. #Pat is in prison., It, is a 3-story concrete building.
d. Bob was in prison for 10 years, first in Alcatraz, then in Sing Sing.
e. *Bob is in penitentiary.
f.*Bob is near prison.
g. *Bob is in crowded prison.
h.  #Bob is in prison to do some plumbing.
i.  Prison was the best thing that happened to Bob.

➢ … are (partially) in complementary distribution with weak definites:

(9)  a.  Bob went to the pub. vs. *Bob went to pub.
b.  Bob went to prison. vs. #Bob went to the prison.
c.  The pub is not a place for women. vs. *Pub is not a place for women.
d.  (The) prison is not a place for women.

➢ … alternate with weak definites across dialects and languages:

(10)  a.  in hospital (Br) – in the hospital (Am)
b.  at university (Br) – at the university (Am)
(11)  a.  in church – in *(de) kerk – in *(die) Kirche
b.  on *(the) street – op straat – auf *(die) Strasse
c.  fall *(on) the floor – op *(de) grond vallen – zu Boden fallen

➢ … involve restricted class of nouns (although more open in English than in Dutch, and possibly German):

(12)  a.  English: base, bed, camp, campus, cellar, church, class, clinic, college, country, court, daycare, deck, dock, district, hall, harbor, hill, home, hospital, island, jail, kindergarten, kitchen, line, market, meeting, office, pasture, planet, port, prison, property, river, school, sea, shore, site, seminary, slope, stage, state, stream, studio, synagogue, table, temple, theater, town, university, work, world, yeshiva (from Stvan 1998)

➢ … are restricted to PPs in Dutch and German, but possible on all positions in English (though probably less productively, Stvan 2007):

(13)  a.  I left college/court/hospital/jail/port/school/town/university.
b.  Court/hospital/jail/school/university is boring.

➢ … are to be kept apart from other bare nominals inside PPs (Baldwin et al. 2006, Le Bruyn, De Swart, Zwarts 2009, Kiss 2011):

(14)  a.  on tape, on video, on film, on cd, on cassette, on celluloid, on disk, on usb stick, on digital audio tape
b.  per year, per person, per square metre, per productive hour, per terabyte, per recruited student that finishes the project
c.  as secretary, as witness, as general manager, as federal minister, as avatar, as sole surviving brother of the king
d.  by train, by telephone, by road, by radio, by pogo stick, by open-topped bus
e.  Dutch: zonder echtgenoot ‘without a partner’, zonder hoed ‘without a hat’, zonder accent ‘without an accent’, zonder proces ‘without a trial’
f. Dutch: met baard ‘with a beard’, met chauffeur ‘with a driver’, met oplegger ‘with a trailer’, met telefoon ‘with a telephone’, met salaris ‘with a salary’

- P-based bare PPs: specific prepositions (on, per, as, by, zonder ‘without’, met ‘with’) occur with open classes of nouns. Sometimes truth-conditionally equivalent with full indefinite (15a), sometimes quantificational (15b).

(15) a. boat without anchor/without an anchor
    b. three apples per basket/three apples in every basket

1.3 Preposition-determiner contraction

- In standard written German the preposition and definite determiner can contract under certain phonological, syntactic, and semantic conditions (e.g. Van Riemsdijk 1998, Cieschinger 2006, Puig-Waldmüller 2008, Schwarz 2009, Bosch & Cieschinger 2010, Bosch 2010, Cabredo Hofherr 2012). This only happens when the referent is unique in the immediate or larger situation (without anaphora or deixis).

(16) am (an+dem), beim (bei+dem), im (in+dem), vom (von+dem), zum (zu+dem), zur (zu+der)

(17) a. Ich war im Wildgehege Moritzburg.
    I was in-the game-reserve Moritzburg
    ‘I was in the game reserve Moritzburg.’
    b. Der Mensch ist am Klimawandel nicht Schuld.
    The man is on-the climate-change not guilty
    ‘Man is not guilty of the climate change.’
    c. Der Trend geht zum gut genährten Mini-Haustier.
    the trend goes to-the well-fed mini-pet
    ‘The well-fed small pet is becoming the trend.’

- Weak definiteness is one of the types of definiteness that triggers preposition-determiner contraction:

    Maria went to the supermarket and Anna too [must be the same]
    b. Maria ging zum Supermarkt und Anna auch.
    Maria went to-the supermarket and Anna too [could be different]
    (examples from Bosch 2010)

If contraction is possible, the contracted construction blocks a weak reading for the non-contracted construction (Bosch 2010). If contraction is not possible, then the definite is ambiguous between a regular and weak reading:

(19) Peter saß auf dem Fahrrad und Karl auch. [same or different]
    Peter sat on the bike and Karl also
2 The semantics of weak definites

- Relevant assumptions (partially based on Aguilar & Zwarts 2011):

  A The definite determiner has an IOTA meaning (type (et)e): for every singleton S, IOTA(S) is the unique element of S, otherwise IOTA(S) is undefined.

  B There is a subtype E of e of well-established kinds, including such general ‘institutions’ as the newspaper, radio, train, market, store, hospital, doctor, …

  C Some nouns can have a singleton Et denotation in addition to their regular et denotations, such as newspaper, hospital_E.

  D A preposition or verb P can be lifted from their ordinary type e(et) meaning to the E(et) meaning: \( \text{LIFT}(P) = -x_E \cdot y_e \cdot z_e \cdot \text{REALIZE}(z, x) \) \( \boxtimes P(y, z) \) \( \boxtimes \text{USE}(y, x) \)

- Derivation of regular interpretation of in the hospital:
  - Lexicon: \( \text{in} \sim -x_E \cdot y_e \cdot \text{in}_{et}(y, x) \)
  - Syntax: \([\text{PP \ in} \ [\text{DP \ the} \ [\text{NP \ hospital \ ]}]])
  - Composition: \(-y_e \cdot \text{in}(y, \text{IOTA(hospital_E)})\)

- Derivation of weak interpretation of in the hospital:
  - Lexicon: \( \text{in} \sim \text{LIFT}(\text{in}) = -x_E \cdot y_e \cdot z_e \cdot r(z, x) \) \( \boxtimes \text{in}(y, z) \) \( \boxtimes \text{U}(y, x) \)
  - Syntax: \([\text{PP \ in} \ [\text{DP \ the} \ [\text{NP \ hospital \ ]}]])
  - Composition: \(-y_e \cdot r(z, \text{IOTA(hospital_E)}) \) \( \boxtimes \text{in}(y, z) \) \( \boxtimes \text{U}(y, \text{IOTA(hospital_E)})\)

- This explains most of the differences between regular and weak definites (Aguilar Guevara & Zwarts 2010), like sloppy identity:

(20) Ada is in the hospital and so is Bob.
  a. \( \text{in(ada, IOTA(hospital_E))} \) \( \boxtimes \text{in(bob, IOTA(hospital_E))} \)
  b. \( \text{in(ada, z) \ U(y, \text{IOTA(hospital_E)})} \)
     \( \text{in(bob, z) \ U(y, \text{IOTA(hospital_E)})} \)

3 The grammar of weak definites

- Different weak constructions have the semantics of weak definites, but they apply the IOTA operator in different syntactic positions. For the PP domain:
  - 0 weak definite explicit (2) \([\text{PP \ P \ [\text{DP \ D}_{\text{IOTA}} \ [\text{NP \ N \ ]}]]] \) (all three)
  - 1 with the preposition (3.1) \([\text{PP \ P}_{\text{IOTA}} \ [\text{NP \ N \ ]}] \) (German)
  - 2 with the noun (3.2) \([\text{PP \ P \ [\text{NP \ N}_{\text{IOTA}} \ ]}] \) (English)
  - 3 with preposition + noun (3.3) \([\text{PP \ P}_{\text{IOTA}} \ [\text{NP \ N}_{\text{IOTA}} \ ]}] \) (all three)

3.1 Preposition + IOTA
Basic assumptions about preposition + determiner contraction
- one lexical item in which P and D are ‘amalgamated’ (Cabredo Hofherr 2012)
- function composition of P meaning with D meaning \( \iota \)

Derivation of zur Sonne ‘to the sun’

\[
\begin{align*}
(21) & \quad a. \quad \text{zur}_t & \sim [\text{zu }] \iota \text{ta} \\
& \quad = -x_{\text{zu}, -y_{\text{to}}(y,x)} \iota \text{ta} = -X_{\text{zu}, -y_{\text{to}}(y,\iota \text{ta}(X))} \\
& \quad b. \quad \text{Sonne} & \sim \text{sun}_t \quad \text{(a singleton)} \\
& \quad c. \quad [\text{pp zur} \ [\text{NP Sonne }]] & \sim -X_{\text{zu}, -y_{\text{to}}(\iota \text{ta}(X))(\text{sun}_t)} = -y_{\text{to}}(y,\iota \text{ta}(\text{sun}_t))
\end{align*}
\]

Further remarks
- \( P_t \) is not restricted to weak definites.
- P and D in \( P_t \) might be syntactically transparent while sharing one morphological form (Cabredo Hofherr 2012) and composed meaning.
- Partial blocking: bare (zu) > contracted (zum) > non-contracted (zu dem)
By economy a bare form (e.g. zu Bett ‘to bed’) blocks the weak reading of a contracted form (e.g. zu Bett > zum Bett ‘to bed’) and the contracted form blocks the weak reading of a non-contracted form (e.g. zum Supermarkt > zu dem Supermarkt ‘to the supermarket’).

3.2 \( \iota \) ta + noun

Observation: In English, a large class of ‘institutional’ or ‘functional’ nouns can be bare (‘defective’) in all argument positions, including the object position of prepositions (Stvan 1998, Baldwin et al. 2006)

Our proposal: \( N_t (\iota \) ta lexically part of N)
- treatment like certain proper names: unique reference without article
- interpreted as application of \( \iota \) ta to the denotation of N
- stored in the lexicon
- might be the result of Matushansky’s m-merger of D and N (Matushansky 2006)
- rejection of [DP \( \square \) [NP N]], because that requires complicated and stipulative mechanisms to assign \( \square \) the right distribution and interpretation

Derivation of in prison

\[
\begin{align*}
(23) & \quad a. \quad \text{in} & \sim \text{LIFT}(\text{in}) = -x_{\text{E}, -y_{\text{z}}}z_{e, r}(z, x) \quad \text{in}(y, z) \quad \text{U}(y, x) \\
& \quad b. \quad \text{prison}_t & \sim \text{\iota \ta}(\text{prison}_t) \\
& \quad c. \quad [\text{pp in} \ [\text{NP prison}_t ] ] & \sim (\text{LIFT}(\text{in})(\iota \text{ta(\text{prison}_t))) \\
& \quad = -y_{\text{z}}z_{e, r}(z, \iota \text{ta(\text{prison}_t))) \quad \text{in}(y, z) \quad \text{U}(y, \iota \text{ta(\text{prison}_t)))}
\end{align*}
\]
Further remarks
- The preposition *in* has the same lifted meaning as in the weak reading of *in the store*.
- The weak noun *store* has the meaning *store*$_E$ in the lexicon, while the weak noun *prison* also has the meaning *IOTA*(prison$_E$). Maybe the more frequent weak nouns get stored in that way, for reasons of economy.
- *prison* blocks the weak reading of the less economical form *the prison*

### 3.3 Constructional IOTA

- The problem of Dutch bare nominals, like *op kantoor* ‘in the office’
- The ‘German’ analysis of *op* predicts that preposition to be possible with any weak noun, which is not true, e.g. *op *(de) universiteit* ‘at university’ *op *(de) markt* ‘at the market’
- The ‘English’ analysis of *kantoor* predicts this noun to be possible without a determiner on all argument positions, which is not correct either.

Our solution: IOTA operates in a constructional way, conditioned by the presence of both *op* and *kantoor*
- Notation: op$_I$ kantoor$_I$
- Interpreted as *op*$_{IOTA}$(kantoor$_I$)
- More generally, a PP of the form [pp prep$_I$ [np noun$_I$]] is interpreted as prep$_{IOTA}$(noun$_I$).
- What is stored in the lexicon is the phrase [pp op$_I$ [np kantoor$_I$]] as an idiom or construction.
- The interpretation of this phrase is still semi-compositional given that *op* and *kantoor* contribute their usual (weak) interpretations.

Derivation of *op kantoor*

(24) a. *op* ~ LIFT(at) = \[ -x_E, \cdot y_E, \cdot z_E \cdot R(z, x) \] at(y, z) \[ u(y, x) \]

b. *kantoor* ~ office$_E$ (a singleton)

c. [pp op$_I$ [np kantoor$_I$]] ~ LIFT(at)(office$_E$) = \[ -y_E \cdot z_E \cdot R(z, IOTA(office$_E$)) \] at(y, z) \[ u(y, IOTA(office$_E$)) \]

Remarks
- Similar cases also in German (e.g. *zu Bett*) and English (e.g. *in line*, Stvan 1998).
- The bare form blocks the weak reading of the definite form for economy reasons: *op kantoor* > *op het kantoor*
- Different prepositions are possible with *kantoor*, with at least the same restrictions as weak nominals in general (e.g. *naar kantoor* ‘to the office’, *van kantoor* ‘from the office’). This suggests a schematic idiom [pp P$_I$ [np kantoor$_I$]].

3.4 Other cases
3.4.1 More P$_I$ patterns?
A related case: *by ‘means of transportation’* (Baldwin et al. 2006:15), which is possible with any noun, but only with the preposition by:

(25)  

a. They arrived by train/plane/bus/pogo stick/hydro-foil ...

b. *I really like train/plane/bus/pogo stick/hydrofoil


➢ One possibility: *by* is stored in the lexicon as *by1*:

(26)  

a. \[by_1 \sim (\neg X_{E\cdot} y_e \cdot z_e \cdot R(z, x) \bigvee \text{TRAVEL}(y, x)) \sim \text{IOTA} \]

\[\text{TRAVEL}(y, \text{IOTA}(X)) \]

b. \[\text{boat} \sim \text{boat}_{\text{Et}} \quad \text{(singleton)} \]

c. \[\text{[pp by1 [sp boat]]} \sim \neg y_e \cdot z_e \cdot R(z, \text{IOTA} (\text{boat}_{\text{Et}})) \bigvee \text{LOC}(y, z) \bigvee \text{TRAVEL}(y, x) \]

➢ Remarks

- *by* is not derived by \text{LIFT} from a non-functional, regular preposition.
- *by* shares its core meaning with the verb *take* (e.g. *take the boat*).
- Dutch *met* is like *by1*, but without the I incorporated \(\text{IOTA}\) definite article (27).
- Means of transportation are represented as kinds productively, but without \text{IOTA} \(\text{IOTA}\) only as weak definites or with special governors, like *by1*.
- Prediction: modification is only possible when it creates a sub-kind (28).

(27)  

a. Ze arriveerden met de trein/het vliegtuig/de bus/de pogo stick/de hydro-foil ...

b. \[met \sim (\neg X_{E\cdot} y_e \cdot z_e \cdot R(z, x) \bigvee \text{LOC}(y, z) \bigvee \text{TRAVEL}(y, x)) \]

(28)  

a. by luxury train, by InterCity train, by ICE train, by RER train, by Amtrak train, by fast train, by steam train, by local train, by overnight train, by bullet train, by direct train, by freight train, by auto train, …

b. by public bus, by city bus, by shuttle bus, by local bus, by tour bus, by mini bus, by Greyhound bus, by overnight bus, by open top bus, by ordinary bus, by double-decker bus, by airport bus, by water bus, by sleeper bus, by luxury bus, by old hippie VW bus T3 (travel blog about cheap trips), …

c. by private plane, by float plane, by sea plane, by chartered plane, by light plane, by bush plane, by government plane, by passenger plane, by ski-plane, by small plane, …

➢ But: if this is a \text{P1} pattern, then we have currently no explanation why modification is more liberal with bare nominals than with weak definites: \#take the open top bus vs. take an open top bus.

3.4.2 More \text{N1} patterns?

➢ Bare musical instrument nominals seem to behave like English bare weak nominals, having a rather wide distribution (sometimes alternating with the definite):

(29)  

a. play guitar, learn guitar, teach guitar, enjoy guitar, prefer guitar to piano, …

b. on guitar, for guitar, with guitar

c. Guitar is hard. Piano is easier than bagpipes.
This motivates an analysis along the following lines:

(a)  
\[ \text{guitar} \sim \text{guitar}_e \text{ (the physical object), guitar}_k \text{ (the kind singleton)} \]

(b)  
\[ \text{the guitar} \sim \text{IOTA(guitar}_k) \text{ (compositionally)} \]

(c)  
\[ \text{guitar} \sim \text{IOTA(guitar}_k) \text{ (in the lexicon)} \]

(d)  
\[ \text{play} \sim \text{LIFT(play)} = \neg x = y \sim z \cdot R(z,x) \text{ play(y,z) U(y,x)} \]

(e)  
\[ \text{play guitar} \sim \text{IOTA(guitar}_k) \text{ play(y,z) U(y,x)} \]

Might be extendable to some other concepts, like \((\text{watch} \text{ television})\), \((\text{play} \text{ football})\), \((\text{play} \text{ chess})\), where the noun behaves like the proper name of a functional kind.

3.4.3 Any V₁ N₁ patterns?

Are there any bare counterparts of weak definite VPs like \(\text{read the newspaper}, \text{answer the phone}, \text{see the doctor}, \text{check the calendar}\) where the bare noun only occurs with that particular verb? Maybe Norwegian (Borthen 2003:140,88):

(a)  
\[ \text{leste avis} \text{ read newspaper} \text{ ‘read the newspaper’} \]

(b)  
\[ \text{ta buss} \text{ take bus} \text{ ‘take the bus’} \]

Maybe also Dutch musical instrument nouns (which seem to be selected by particular verbs and prepositions in contrast to English):

(a)  
\[ \text{gitaar spelen (guitar play), gitaar leren (guitar learn)} \]

(b)  
\[ \text{op gitaar (on guitar), voor gitaar (for guitar), met gitaar (with guitar)} \]

(c)  
\[ ?\text{Gitaar is moeilijk. (Guitar is hard)} \]

Dutch has bare objects in VPs like (33), but those do not seem to alternate with definite articles within or across languages.

(c)  
\[ \text{auto rijden (car drive) ‘to drive a car’, paard rijden (horse drive) ‘to ride a horse’,} \]
\[ \text{afscheid nemen (goodbye take) ‘to say goodbye’, deel nemen (part take) ‘to take part’,} \]
\[ \text{plaats nemen (place take) ‘to take a seat’, les geven (lesson give) ‘to teach’, bevel geven (order give) ‘to give an order’, pijp roken (pipe smoke) ‘to smoke’, plaats vinden (place find) ‘to take place’, post vatten (post take) ‘to take post’, wortel schieten (root shoot) ‘to take root’, schipbreuk lijden (shipwreck suffer) ‘to be shipwrecked’, kans zien (chance see) ‘to see one’s way’} \]

4 Conclusion

Different ways of expressing weak definiteness can be understood as different ways of applying the \text{IOTA} operator: overtly or covertly, on the preposition or the noun.
Appendix: the interpretation of the I feature

- Basic idea: certain semantic functions are not realized as a separate head, but as a feature on one or more other heads.

- If F is a semantic feature that marks one head X or two consecutive heads X and Y, then:
  a. if F occurs only once, \([[[ X_F ]] = C({[[ X ]],[[ F ]]}])
  b. if F occurs twice, \([[[ X_F [ Y_F ] ]] = C({[[ X ]],C({[[ Y ]],[[ F ]]})})])

- C (‘combine’) is defined as follows.
  If A and B are typed denotations, then
  - \(C\{A,B\} = A(B)\) if A is of type \((\alpha,\beta)\) and B is of type \(\alpha\)
  - \(C\{A,B\} = A \circ B\) if A is of type \((\alpha,\beta)\) and B is of type \((\gamma,\alpha)\)
  - Otherwise \(C\{A,B\}\) is undefined.

- Applied to our cases:
  (34)  a. \([[[ im_1 ]] = C({[[ in ]],[[ I ]]})) = [[ in ]] = \text{IOTA}
  b. \([[[ prison_1 ]] = C({[[ prison ]],[[ I ]]})) = [[ I ]] ([[ prison ]]) = \text{IOTA(prison)}
  c. \([[[ op_1 [ kantoor_1 ] ]]] = C({[[ op ]],C({[[ kantoor ]],[[ I ]]}))}) = \text{IOTA(kantoor)}\)

References


