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Agreement alternations with quantified nominals in Modern Hebrew (Danon (2013))

> **The Phenomenon:** alternating agreement patterns with quantified noun phrases (QNPs) in Hebrew and other languages.
> **The analysis:** a single syntactic structure can account for different QNP types. Alternating agreement results from the distribution of INDEX and CONCORD features. The main point is that INDEX features can be specified either in the lexicon or assigned in the syntax.

1 Introduction

- Attested QNP (quantified noun phrase) agreement patterns:

  1) Agreement with Q
  2) Agreement with N
  3) Semantic agreement
  4) Default agreement (3rd person singular, masc or neuter)

- Q-agr and N-agr are widely attested in Modern Hebrew.

(1)   a.   30 axuz-im   me-ha-maskoret   **holxim/?holexet**   le-sxar dira
              30 percent-M.PL of-DEF-salary.F.SG **goes.M.PL/goes.F.SG** to-rent
              '30 % of the salary goes to (paying the) rent.'   (Q-agr/?N-agr)
       b.   maxacit me-ha-tošavim   **ovdim/*ovedet**   be-xakla'ut
              half.F.SG of-DEF-residents.M.PL **work.M.PL/work.F.SG** in-agriculture
              'Half of the residents work in agriculture.'   (N-agr/*Q-agr)

- Semantic agreement is less common in Modern Hebrew:

(2)   ?xelek   me-ha-kita   **higi'u**   be-ixur
       part.M.SG of-DEF-class.F.SG **arrived.PL** late
   'Some of the (students in the) class arrived late.'

- Default agreement is not attested in Hebrew.

1.1 Theoretical problems

☞ **Locality** (given that T can only agree with the *closest* matching goal)

  (i) If QP is structurally higher than NP, then N-agr seems to violate the locality conditions.
  (ii) If NP is structurally higher than QP, then Q-agr seems to violate the locality conditions.

The author adopts the structure in (3). The goal is to account for N-agr, which seems to be impossible if Q bears ϕ-features.

(3)
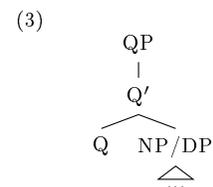
☞ **Agreement and case**

  – If T agrees with a single XP it is with a *nominative* one (Bobaljik 2008).
  – However, in some languages N-agr is possible with a genitive/oblique NP (DP), and not with the entire QNP which is nominative.

☞ **Undergeneration/overgeneration of agreement models**

2 QNP types and QNP agreement in Hebrew

- QNP types:

  – Construct states

    (4)   kol/maxacit ha-anašim
           all/half   DEF-people
           'all/half the people'

  – Partitives

    (5)   kama/harbe me-ha-anašim
           some/many of-DEF-people
           'some/many of the people'

  – Simple quantifier-noun constructions

    (6)   kama/harbe anašim
           some/many people
           'some/many people'

- *Construct state QNPs (7-a) and partitive QNPs (7-b)* may trigger N-agr or Q-agr.

- Simple quantifier-noun constructions never trigger Q-agr.

(7)   a.   maxacit ha-cava   **niš'ar**   **ne'eman/niš'ara**   **ne'emana**
              half.F.SG DEF-army.M.SG remained.M.SG loyal.M.SG/remained.F.SG loyal.F.SG
              la-melex
              to.DEF-king
              'Half of the army remained loyal to the king.'   (N-agr/Q-agr)
       b.   xelek   gadol   me-ha-oxlosiya   **eyna   megiva/eyno**
              part.M.SG large.M.SG of-DEF-population.F.SG NEG.F.SG react.F.SG/NEG.M.SG
              megiv   tov le statinim
              react.M.SG well to statins
              'A large part of the population doesn't react well to statins.'   (N-agr/Q-agr)

☞ To what extent is the choice of agreement type free for partitive and construct state QNPs?

2.1 Factors that possibly have an effect on agreement

☞ **The effect of quantifier morphology?**

(8) a. **harbe** me-ha-tošavim   ha-mekoriyim **azvu/*azav**
        many of-DEF-inhabitant.PL DEF-original.PL **left.PL/left.SG**
        'Many of the original inhabitants have left.'   (N-agr/*Q-agr)

   b. **marbit** ha-našim   **mevinot/*mevina**   et ze
        most.F.SG DEF-women.F.PL **understand.F.PL/understand.F.SG** OM this
        'Most women understand this.'   (N-agr/*Q-agr)

   c. **marbit** ha-kurs   **yukdaš/tukdaš**   le-nos'im
        most.F.SG DEF-course.M.SG **devoted.FUT.M.SG/devoted.FUT.F.SG** to-topics
        mitkadmim
        advanced
        'Most of the course will be devoted to advanced topics.'   (N-agr/Q-agr)

   d. **asirit**   me-ha-tošavim   **tomxim/?tomexet**   ba-haca'a
        tenth.F.SG of-DEF-residents.M.PL **support.M.PL/support.F.SG** in.DEF-proposal
        'A tenth of the residents support the proposal.'   (N-agr/?Q-agr)

→ A simple morphological analysis cannot explain the data. Morphological number/gender on a quantifier is a necessary but not a sufficient condition for Q-agr.

☞ **The effect of noun type?**
With plural count nouns there is a strong preference for N-agr.

(9) a. xelek   me-ha-našim   maskimot/??maskim im ze
        part.M.SG of-DEF-women.F.PL agree.F.PL/agree.M.SG with this
        'Part of (the) women agree with this.'   (N-agr/??Q-agr)

   b. xelek   me-ha-oxlosiya   maskima/maskim   im ze
        part.M.SG of-DEF-population.F.SG agree.F.SG/agree.M.SG with this
        'Part of the population agrees with this.'   (N-agr/Q-agr)

3 QNP agreement in other languages

Standard Arabic

- Construct state QNPs alternate between N-agr and default agreement (3m.sg)

- In (10-b): agreement with a non-nominative noun → a potential problem?

(10) a. yaḥduθu   baʕṣụ-u   ʔal-qalaaqil-i
        occur.**3M.SG**.IMPF some-NOM DEF-disturbances.F-GEN
        'Some disturbances occur.'   (default)

   b. kaan-at   kull-u muḥaadaθ-at-i-n   tabtad-iiʔ-u
        was-**3F.SG** all-NOM conversation-F-GEN-INDEF begin-**3.F.SG**-IMPF
        'Every conversation used to begin...'   (N-agr)

Russian

- In constructions with genitive of quantification N-agr and default agreement are possible (Pesetsky (1982), Franks (1994), Bošković (2006), Pereltsvaig (2006)).

(11) a. Pjat' krasivyx   devušek   prišli
        five beautiful.GEN.PL girls.GEN.PL arrived.PL
        'Five beautiful girls arrived.'   (N-agr)

   b. Prišlo   pjat' krasivyx   devušek
        arrived.N.SG five beautiful.GEN.PL girls.GEN.PL
        'Five beautiful girls arrived.'   (default)

- Q-agr is possible with more 'noun-like' quantifiers (Pereltsvaig (2007)).

Serbo-Croatian

- The quantifier's morpho-lexical category determines the agreement pattern (Franks (1994), Wechsler & Zlatić (2003)).

(i) **N-agr** with adjectival quantifiers, which agree with the noun in gender and number, and do not assign genitive.

(12) a. Jedna   lepa   devojka   je   došla.
        one.F.SG beautiful.F.SG girl.F.SG.NOM AUX.3SG come.PPRT.F.SG
        'One beautiful girl came'

   b. *Jedan   lepa   devojka   je   došao.
        one.M.SG beautiful.F.SG girl.F.SG.NOM AUX.3SG come.PPRT.M.SG
        'One beautiful girl came'

(ii) **Q-agr** with nominal quantifiers, which have their own gender and number, and assign genitive.

(13) a. Tri lepe   devojke   su   došle.
        three beautiful.F girl.F.SG.GEN AUX.3PL come.PPRT.F.PL
        'Three beautiful girls came'

   b. Tri zgodna   momka   su   došla.
        three handsome.M.PAUC guy.M.SG.GEN/PAUC.NOM AUX.3PL come.PPRT.PAUC

        'Three handsome guys came'

(iii) **Default agreement or N-agr (for some speakers)** with uninflecting quantifiers, which assign genitive to the noun.

(14) Mnogo lepih   devojaka   je   došlo.
        many beautiful.F.PL girl.F.PL.GEN AUX.3SG come.PPRT.N.SG
        'Many beautiful girls came'

Basque

- N-agr or default agreement

(15) Bezero   asko etortzen **da/dira** halako egunetan
        customer.SG many come.HAB **is/are** such   days.in
        'Many customers come on such days.'   (default/N-agr)

- The alternation in Basque depends on semantic properties of the quantifier and on the distributivity/collectivity of the predicate (Etxeberria & Etxepare (2008,2012)).

- An alternation between semantic and default agreement?

Generalizations

(i) With overt case morphology N-agr is possible with a non-nominative noun.

(ii) Q-agr is only possible with noun-like quantifiers. However, this condition alone is not sufficient for Q-agr.

(iii) If Q-agr is allowed, default agreement is not possible.

(iv) The influence of semantic factors on agreement varies from language to language.

4 Structural ambiguity or not?

☞ Is the syntactic structure uniform for all agreement patterns or not?

☞ Two possible options:

(i) The whole QNP can appear in two distinct positions in a clause.

(ii) Alternating QNPs can have two different internal structures.

4.1 Previous analyses

Russian (Pesetsky (1982) & Franks (1994))

- QNPs with N-agreement are NPs/DPs and they occupy the SpecIP.

- QNPs with default agreement are QPs and they occupy the SpecVP.

☞ Agreeing and non-agring QNPs in Russian behave differently.

Anaphor binding is impossible with non-agring QNPs in Russian.

(16) a. Pjat' ženščin **smotreli/smotrelo**   na Ivana
          five   women looked.**PL**/looked.**N.SG** at Ivan
          'Five women looked at Ivan.'
      b. Pjat' ženščin **smotreli/*smotrelo**   na sebja
          five   women looked.**PL**/looked.**N.SG** at themselves
          'Five women looked at themselves.'

In Hebrew anaphor binding is possible with both agreement patterns.

(17) a. maxacit (me-)ha-cava   hegena   al acma
          half.**F.SG** of-DEF-army.M.SG defended.**F.SG** on self.**F.SG**
          'Half (of) the army defended itself.'   (Q-agr)
      b. maxacit (me-)ha-cava   hegen   al acmo
          half.F.SG of-DEF-army.**M.SG** defended.**M.SG** on self.**M.SG**
          'Half (of) the army defended itself.'   (N-agr)
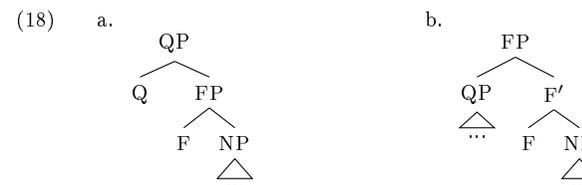
☞ In Hebrew there is no evidence for a categorial or positional difference between QNPs triggering different agreement patterns.

Studies of Semitic noun phrases
(Ritter (1991), Shlonsky (1991), Benmamoun (1999), Shlonsky (2004))

- Different internal structure?

- It was argued in the literature that (18 -a) is a better structure for QNPs because

  - many QNPs in Semitic are construct states (a head + an embedded genitive DP)

  - for non-QNP constructs: the first element is the lexical head and the second element is an argument/possessor of the first.

(18) a.   b.
              QP   FP
             / \   / \
            Q   FP   QP   F'
                / \   /\\   / \
               F   NP   ...   F   NP
               /\\ /\\   /\\
              ... .

- QNP constructs are syntactically identical to non-QNP constructs:

  - Definite articles cannot precede constructs

    (19) a. (*ha-)marbit ha-talmidim
              DEF-majority DEF-students
              'the majority of the students'
          b. (*ha-)horey ha-yeled
              DEF-parents DEF-boy
              'the boy's parents'

  - A modifier cannot intervene

    (20) a. maxacit (*ha-rišona) ha-kurs   (ha-rišona)
              half   DEF-first   DEF-course DEF-first
              'the (first) half of the course'
          b. horey   (*ha-ge'im) ha-yeled (ha-ge'im)
              parents DEF-proud   DEF-boy DEF-proud
              'the boy's (proud) parents'

- In construct state QNPs the quantifier is structurally higher than the NP/DP.

☞ Alternation between N-agr and Q-agr is a cross-construction phenomenon. An analysis with structural ambiguity would have to account for (i) both types of QNP (partitives and construct states) and for the fact that (ii) QNPs with N-agr behave like QNPs with Q-agr.

> **Proposal:** Two agreement patterns follow from a single syntactic structure with a different distribution of features associated with each of the agreement patterns.

5 TOWARDS AN ANALYSIS

If QP is higher than NP:
Locality: How can T agree by skipping the higher P?
Case: How can T agree with a [-Nom] NP?
Problem #1: The failed agreement is not an option in Hebrew!
Problem #2: The existence of Q-agr → Q and N may have different features
Problem #2a: If we embrace the F(ranks)-B(ošković) system, we have to assume copying features from NP to QP and QP having both copied and lexically-specified features ; Minimalism says ✗, HPSG says ✔

5.1   INDEX and CONCORD features – Wechsler & Zlatić (2000, 2003)

(21)   Ta   dobra   deca   su   došla
        that.F.Sg good.F.Sg. children.F.Sg. AUX.3.Pl come.PPRT.N.P.
        'Those good children came.'   BCS, W&Z 2000

(22)   hineni   maʔaxil-am   ʔet   ha-ʕam   ha-ze   laʕana
        AUX.1Sg feed-them.M.Pl OM DEF-people DEF-this.M.Sg wormwood
        'I will feed this people wormwood'

- *Index features* constrain the NP's referential index, and are relevant to pronoun binding and subject–predicate agreement

- *Concord features* are more closely related to the noun's morphology, and are relevant to NP-internal concord

     INDEX–CONCORD: index and concord match each other

     INDEX–SEMANTICS: index features match noun's semantics

   CONCORD–DECLENSION: concord features match the noun's morphology

- (21) is a case of INDEX–CONCORD mismatch

5.2   I-C ANALYSIS OF QNPs

Summary:
● Subject–verb agreement is ALWAYS INDEX-agreement with the QNP. Even N-agr involves no direct agreement relation between T and N/NP.
● Following WZ, the QNP's INDEX features (which are the same as those of its head, the Q) do not always match the Q's CONCORD features. Specifically, N-agr (as well as 'semantic' agreement) is the result of such a mismatch
● Different agreement patterns follow from different mechanisms for assigning values to the QNP's INDEX features. The grammar has no preference for one mechanism over another, the structures differ in their feature composition.

(23)   Q-agr pattern
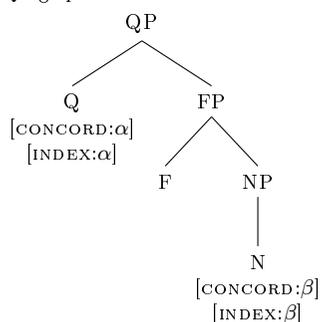
1. Q enters the derivation with lexically specified INDEXf which match its CONCORDf

2. The QNP gets the INDEXf from Q head

3. T agrees with QNP, giving rise to T carrying the same features as those specified in the lexicon for Q

(24)   N-agr pattern
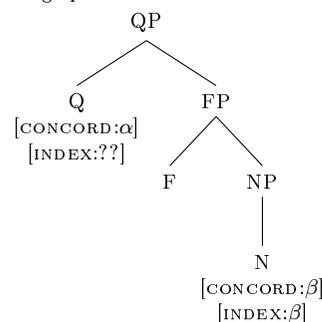
1. Q enters the derivation with UNVALUED INDEXf

2. The Q's INDEXf probe for the INDEXf of NP (='percolation'). Following this Agree operation, Q's INDEXf might not match its CONCORDf

3. The QNP gets the INDEXf from Q head

4. T agrees with QNP

Crucial points:
☞ INDEXf are valued either in the lexicon (pre-syntactically – Q-agr) or in the syntax (N-agr)
☞ no default in this system

(25)   hamon   be'ayot   niš'aru   / *niš'ar   lelo   pitaron
        very.much.M.Sg problems.F.Pl remain.Pl   remain.M.Sg without solution
        'A lot of problems remain without a solution.'

(26)   N-agr only
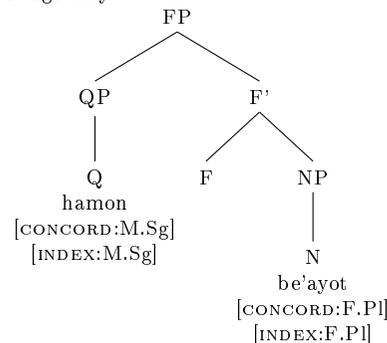
5.2.1 INDEXf and semantics

(27) zug   studentim   ba-texniyon   gidlu   samim še-yiv'u
      pair/couple.M.Sg students.M.Pl in.DEF-Technion grew.Pl drugs that-imported
      me-xul
      from-abroad
      'A pair of students in the Technion grew drugs they imported from abroad' (N-agr)

(28) zug   studentim   šaket   mexapes   dira
      pair/couple.M.Sg students.M.Pl quiet.M.Sg seeks.M.Sg flat
      'A quiet student couple is seeking a flat' (Q-agr)

(29) Agreement with a singular count noun (a) vs. plural (b)
      a. xeci   me-ha-mexonit nirtav   / ??nirteva
          half.M.Sg of-DEF-car.F.Sg got.wet.M.Sg / got.wet.F.Sg
          'Half of the car got wet' (Q-agr / ??N-agr)
      b. xeci   me-ha-anašim   *nirtav   / nirtevu
          half.M.Sg of-DEF-people.M.Sg got.wet.M.Sg / got.wet.Pl
          'Half of the people got wet' (*Q-agr / N-agr)

5.2.2 Cross-linguistic variation

Q-AGR is predicted not to be available

1. In a language where quantifiers constantly occupy a specifier position within the noun's extended position
2. In a language where quantifiers have no morphologically-triggered features

FAILED AGREEMENT

1. If certain quantifiers are lexically specified as carrying default INDEXf, then the derivation of default agreement is reduced to a special kind of Q-agr;
2. If Q lacks INDEXf, then when T probes for features it simply finds those of NP, giving rise to N-agr

SEMANTIC AGREEMENT

1. It is not the agreement that is semantic, but the pre-agreement feature specification of the subject
2. Availability of Sem-agr depends on the extent to which the language allows semantic factors to determine INDEXf

PROPERTIES OF LANGUAGES

- Standard Arabic: Q enters the derivation either with unvalued INDEX, giving rise to N-agr, or with default INDEX, giving rise to Failed agreement
- Russian: For 'non-nominal' Q = Standard Arabic; for 'nominal' Q = Hebrew
- Serbo-Croatian: Some quantifiers must enter the derivation with INDEX matching CONCORD, giving rise to Q-agr and some must enter the derivation with default INDEX, giving rise to Failed agreement

6   QNP AGREEMENT AND MINIMALIST FEATURE THEORY

The difference between this approach and WZ is that their approach is a non-derivational constraint-based HPSG analysis, and the current one is formulated within the Minimalist framework!

6.1   Complexity in the feature system

Informal statement:
In a QNP where the noun is plural, the quantifier may carry an INDEX plural feature simultaneously with a CONCORD singular feature.
⟶ we must allow two separate NUMBER features on the same head

How?

I **privative (monovalent) features** ⟶ feature is an atomic symbol which is either present or absent. Enriched with feature geometry, the INDEX/CONCORD distinction could be encoded as two distinct branches of the geometry, allowing two distinct NUMBER OR GENDER features on the same element

   Problem: overall organization of a feature geometry

II **functions from atomic attributes to values**

   Problem 1: no way to have a NUMBER feature with two simultaneous values ⟶ [NUMBERI SINGULAR] [NUMBERC PLURAL]

   Problem 2: we get a grammar that does not explicitly express the fact that both of these are NUMBER features ⟶ (i) 'Feature Co-occurrence Restrictions' (ii) two NUMBER features allowing the same possible values

III enrich the attribute-value model of features to use complex features as in the HPSG and LFG formalisms by not limiting values to being atomic symbols but allowing values that are themselves sets of attribute-value pairs ⟶ [INDEX [NUMBER PLURAL]] and [CONCORD [NUMBER SINGULAR]]

⟶ Danon (2013) chooses complex features, each with a set of subfeatures

6.2   The mechanism of agreement

Agree is a FEATURE SHARING operation, therefore features remain present on all nodes on which the features are shared, with various interface conditions determining where each feature is to be interpreted

N-agr goes as follows:

1. Q enters the derivation with unvalued INDEX features
2. Q and NP agree (share INDEX features)
3. T and QNP agree (share INDEX features)

References

Danon, Gabi. 2013. Agreement alternations with quantified nominals in Modern Hebrew. *Journal of Linguistics* 49(1). 55–92.