PERCEPTUAL REPORTS IN (DIALECTS OF) ARABIC

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Abstract

This paper offers what is to our knowledge the first description and analysis of the encoding of perceptual reports in Arabic: we focus here on Modern Standard Arabic (MSA) and Maltese (MT) building on the analytic framework offered by Asudeh and Toivonen (2012) (henceforth AT). We show that a range of different syntactic constructions are used to encode perceptual reports with *seem*-class predicates while the core semantic observation developed in AT, concerning the distinction between types of PSOURCE, is found to hold robustly in these languages. In the light of the data we outline, an important question for future work turns out to be that of distinguishing cases of (genuine) copy-raising from constructions with thematic subjects (for the verbs in question). While Maltese is ideologically and sociolinguistically a separate language, it shares many key aspects of its syntax with the Western vernaculars of Arabic, and is fruitfully considered as a dialect of Arabic for the purposes of cross-dialectal comparison.

1 Background: Perceptual Reports

Building on insights from previous literature, most significantly Rogers (1973) and Potsdam and Runner (2001), Asudeh (2004, 2012) and Asudeh and Toivonen (2012) (henceforth AT) develop an account of perceptual reports in LFG. They draw a distintion between copy raising verbs, such as English *seem* and *appear*, and the class of perceptual resemblance verbs, exemplified by *look, sound, smell*.

Copy raising verbs (*seem, appear*) occur in subject-to-subject raising (SSR) and expletive subject (EXPL) constructions, as shown in (1), and also with copy raising syntax, where the subject of the 'raising' verb is the antecedent of a copy pronoun in the embedded clause, as in (2). Copy raising constructions are the locus of a good deal of dialectal variation, with speakers varying as to whether they accept copy pronouns in non-subject positions (see Asudeh (2012) and AT for extensive discussion). Copy raising syntax in English obligatorily involves the use of a predicate denoting similarity or comparison (*like, as if, as though*).

(1) a. It seemed that Kim enjoyed the hike.

b. It seemed like Kim enjoyed the hike.

c. Kim seemed to enjoy the hike.

(2) a. Chris seemed **like he** enjoyed the marathon.

b. John seems **like** the judges ruled that **he** defeated Mary.

c. John seems **like** Mary defeated **him**.

Perceptual resemblance verbs (*look, sound, smell, etc*) occur in expletive subject constructions, with a similarity or comparison predicate (*like, as if, as though*) as in (3), but not in subject-to-subject raising (for most speakers). Additionally, they also occur with a non-expletive subject and a full sentential complement which may or may not involve a pronominal coreferential with the subject of the perceptual resemblance predicate itself (see (4)). A relatively small number of speakers (AT's Dialect D) also accept the copy raising verb *seem* in a non-copy raising usage with no pronominal copy, as in (5).

(3) It sounded like Bill had found the remote.

(4) John looked/sounded/smelled **like** Bill had served asparagus.
     John looked/smelled **like** he'd been running.

(5) Chris seemed **like** Mary got the prize.

The key points about copy raising (henceforth CR) in the AT analysis (for what follows) are the following. CR is mediated in English by an intervening *like/as if* predication and involves an obligatory pronominal copy. A core property which distinguishes the EXPL and SSR versions of these verbs from the true CR version is that a copy raised (non-expletive, non idiom chunk) subject must be interpreted as a perceptual source PSOURCE: "a copy raising subject is interpreted as the PSOURCE - the source of perception - and ascribing the role of PSOURCE to the subject is infelicitous if the individual in question is not perceivable as the source of the report" (Asudeh and Toivonen, 2012). The notion of PSOURCE (which goes back to the work of Rogers (1973)) is best illustrated with an example scenario, for which purpose we borrow AT's puzzle of the 'absent cook'. On entering an empy kitchen which shows clear signs of recent cooking (dirty pots around, open jars, etc), *It seems like Pete has been cooking again!* is felicitous (Pete being a disorganised and untidy cook) while *Pete seems like he has been cooking again!* is not felicitous. This sentence is *only* appropriate if Pete the cook is visible: AT (and see also Asudeh (2004, 2012)) propose that in cases of CR the subject is always a (visible) PSOURCE, and hence directly observable.[1] They argue that PSOURCE is not a *thematic argument* of the CR verb, but is an entailed participant in the state that the verb denotes.

In SSR and EXPL constructions, on the other hand, some aspect of the eventuality is interpreted as the PSOURCE, and hence (as shown in the 'absent cook' scenario above) these constructions may be used in a wider set of circumstances. A similar point can be made about perceptual resemblance verbs, which alternate between an expletive use and a thematic subject use: in the latter case, an aspect of the subject is necessarily interpreted as the perceptual source.

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[1]It should be noted that other work takes a different view of the PSOURCE constraint. For example, Landau (2011, 786) holds that "the P-source interpretation is not a necessary feature of all CR subjects".

Asudeh (2004, 2012) and AT propose a syntactic analysis of CR based on the standard analysis of SSR in LFG. The 'raised' subject is not a thematic argument of *seem* (despite being a PSOURCE). The CR verb in (2) thus involves the f-description shown in (6). The syntactic analysis hinges on the status of *like* (*as (though), as (if)*), which is argued to be a predicative element rather than just a complementiser. It heads an XCOMP and takes a COMP. A CR example such as those in (2) would involve *like* with the PRED value in (7).[2]

(6) $(\uparrow \text{PRED}) = \text{'SEEM} < \text{XCOMP} > \text{SUBJ'}$
    $(\uparrow \text{XCOMP SUBJ}) = (\uparrow \text{SUBJ})$

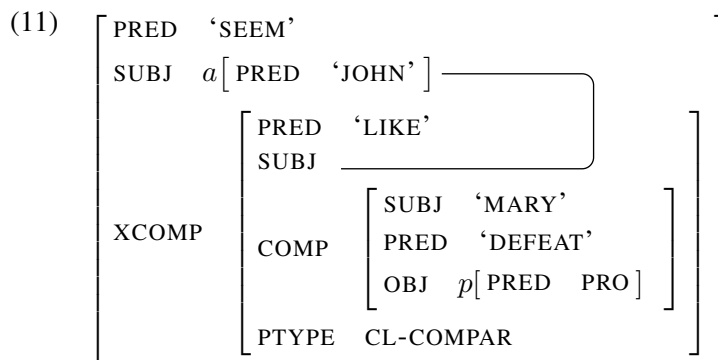(7) $(\uparrow \text{PRED}) = \text{'LIKE} < \text{SUBJ, COMP} >\text{'}$

Other examples such as *There seems like there is a big problem with the heating system.* require *like* with a non-thematic subject:

(8) $(\uparrow \text{PRED}) = \text{'LIKE} < \text{COMP} > \text{SUBJ'}$

CR verbs additionally introduce a standard binding relation between the subject and the pronoun occurring (somewhere) in the complement of the XCOMP. For example, the syntactic part of the lexical entry for a CR verb in the dialect of English which restricts the pronoun to the highest embedded subject position would be as in (9): other, less restrictive dialects allowing CR from other functions would differ in the nature of the path to the pronoun. For example (11) is the f-structure for (10) in the dialect of English which permits dependencies into non-subject positions.

(9) $seem_{like}$ $(\uparrow \text{PRED}) = \text{'SEEM} < \text{XCOMP} > \text{SUBJ'}$
        $(\uparrow \text{XCOMP SUBJ}) = (\uparrow \text{SUBJ})$
        $(\uparrow \text{SUBJ})_\sigma = ((\uparrow \text{XCOMP COMP SUBJ})_\sigma \text{ ANTECEDENT})$

(10) John seems **like** Mary defeated **him**.

(11)
$$\begin{bmatrix} \text{PRED} & \text{'SEEM'} \\ \text{SUBJ} & a\begin{bmatrix} \text{PRED} & \text{'JOHN'} \end{bmatrix} \\ \text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{'LIKE'} \\ \text{SUBJ} & \\ \text{COMP} & \begin{bmatrix} \text{SUBJ} & \text{'MARY'} \\ \text{PRED} & \text{'DEFEAT'} \\ \text{OBJ} & p\begin{bmatrix} \text{PRED} & \text{PRO} \end{bmatrix} \end{bmatrix} \\ \text{PTYPE} & \text{CL-COMPAR} \end{bmatrix} \end{bmatrix}$$

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[2]It should be noted that Asudeh (2012) and Asudeh and Toivonen (2012) do not provide syntactic argument structure lists in the PRED values of *like*, and Asudeh (2012) dispenses with them altogether. Clearly, given a fully explicit semantics, it can be argued that there is no real role for a syntactic argument structure. We maintain the use of syntactic argument structure lists here for maximum clarity. We also maintain the distinction between COMP and XCOMP here.

Semantically, the non-expletive CR version and the plain raising version **evaluate** to the same meaning (modulo the nature of PSOURCE and contribution of *like* itself), but they **compose** differently, as is evident from the the meaning terms in (12)-(13). For reasons of space and simplicity, we generally omit the glue side of the meaning constructors throughout this paper.

A key aspect of the analysis of the difference between SSR and CR concerns the semantic role of perceptual source, or PSOURCE, first discussed in Rogers (1973), which AT argue is defined for all perceptual eventualities (in English and Swedish). In true CR the PSOURCE is the individual denoted by the SUBJ of the perceptual report verb, accounting for the observation that the individual must be present.

In contrast, in SSR and in expletive cases, it is of type *eventuality* (so this requirement is consequently weaker): AT postulate existential closure over the PSOURCE role, which in this case is of type *eventuality*, see (13), where ϵ is an eventuality metavariable over state and event variables. CR involves a comparison between a state of something seeming to be the case and an eventuality (state or event) in the embedded *like* clause.

(12) **seem.cr**: $\lambda P \lambda x \lambda s.[seem(s, P(x)) \wedge \text{PSOURCE}(s) =_\tau x]$

(13) **seem**: $\lambda p \lambda s' seem(s', p)$
$\lambda S \lambda s \exists v_\epsilon [S(s) \wedge \text{PSOURCE}(s) =_\tau v_\epsilon]$

(14) For any two eventualities α and β, $\alpha \sim \beta$ is true if and only if there is a property P such that P(α) is true and P(β) is true

(15) **like**: $\lambda P \lambda s \exists \epsilon.[(s \sim \epsilon) \wedge P(\epsilon)]$ Asudeh (2012)

In semantic composition the pronominal resource is removed by a manager resource, as in resumption (for a general introduction to glue semantics, see Dalrymple (2001)).

(16) **mr**: $\lambda f \lambda x.x: [a \multimap (a \otimes p)] \multimap (a \multimap a)$
pn: $\lambda y.y \times y: a \multimap (a \otimes p)$

(17) $\exists s.seem (s, \exists e [(s \sim e) \wedge defeat(e,m,j) \wedge \text{PSOURCE}(s) = j])$

All expletive subject versions also evaluate to the same meaning (again, modulo any additional contribution associated with *like*): they share the compositional structure of standard raising (in which *seem* composes directly with its propositional argument, and lacks the manager resource).

(Thematic) perceptual resemblance verbs differ from CR and raising predicates, and compose with an additional thematic argument as shown in (18).

(18) $\lambda p \lambda x \lambda s.[sound(s, aural(\text{PSOURCE}(s)), p) \wedge \text{PSOURCE}(s) =_\tau x]$

2   Modern Standard Arabic

We exemplify the behaviour of perceptual report verbs in MSA with *yabdū* 'seem' (other verbs, including *yaẓharu* 'appear' also behave in similar fashion). (19) shows *yabdū* with a single propositional argument and default (3SGM) agreement, that is, in a construction corresponding to the EXPL subject construction with English *seem*. The propositional argument is a normal tensed clause, introduced by the complementiser *ʔanna*. Although MSA has rather flexible word order, the predominant order is VSO. However, since this complementiser itself must be directly followed by a nominal element (which may be a pronominal affix on the COMP itself) in the accusative case, the embedded sentences cannot be in VSO word order in this case.[3]

(19) y-abdū   ʔanna l-ʔawlād-a   qad ḥaḍar-ū
      3-seem.IPFV.SGM COMP DEF-boys-ACC PTL come.PFV-3PLM

      It seems that the boys have come.   MSA: Soltan:102

Soltan (2007) discusses at some length the status of examples such as (20) in which the subject of the complement occurs in initial position. The question which arises here is whether the initial NP is in subject position or some other fronted position. Note that it is not possible to place a subject NP immediately after the matrix verb *yabdū* before the complement sentence (that is, in a putative VSO structure).

(20) al-ʔawlād-u   y-abdū   ʔanna-hum   qad ḥaḍar-ū
      the-boys-NOM 3-seem.IPFV.SGM COMP-3PL.ACC PTL come.PFV-3PLM

      The boys, it seems that they came.   MSA: Soltan:102

Working within a Minimalist framework, he argues that such putative raising cases do not involve raising. He analyzes (20) as a base-generated left dislocation structure, providing a number of clear arguments in favour of thisconclusion. Note that although MSA shows full verbal agreement in SVO word order, the matrix verb in (20) must appear in default 3SGM form rather than reflecting the 3PL features of the subject.[4] The embedded clause is not in dependent subjunctive mood (Arabic does not have infinitives) but is a tensed indicative form. The embedded subject (corresponding to the left dislocated NP) is expressed (obligatorily) as a pronominal affix (or clitic) on the complementiser *ʔanna*, just as it is expressed as a pronominal resumptive when NPs corresponding to other functions are fronted, as in (21).

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[3]Transliterations and glosses in some examples from sources have been slightly modified to conform to the practice adopted in this paper.

[4]MSA shows partial agreement (that is, agreement defective in number), with non-pronominal subjects in the alternative VSO order.

(21) hā<u>d</u>ā al-kitāb-u   y-abdū   Ɂanna Zayd-an
this   the-book-NOM 3-seem.IPFV.SGM COMP Zayd-ACC
qaraɁa-hu
read.PFV.3SGM-3SGM.ACC

This book, it seems that Zayd read it.   MSA: Soltan 2007: 104

We conclude with Soltan (2007) that perceptual report verbs in the *seem* class in MSA take (finite, indicative) complements introduced by the particle *Ɂanna* and do not exhibit SSR: the pattern illustrated in (20)-(21) is a left dislocation structure.

Of interest however is a further construction in which the complement is introduced by *kaɁanna* and the NP corresponding to the embedded subject appears between the *seem* verb and the complement sentence, as in (22): this structure is ungrammatical with the complementiser *Ɂanna*, as noted above. For the moment, we gloss *kaɁanna* as 'as.if'. The matrix verb here shows partial agreement (in gender but not in number), as is typical of VS structures in MSA.

(22) bad-at-i   l-bint-u   kaɁanna-hā katab-at-i
seem.PFV-3SGF-INDIC DEF-girl-NOM as.if-ACC   write.PFV-3SGF-INDIC
r-risālat-a
the-letter-ACC

The girl seemed as if she wrote the letter.   MSA: Salih 1985: 138

In (22), the embedded subject, co-referential with the subject of the *seem* clause, is expressed as a pronominal affix (or clitic) on the presentential particle *kaɁanna*. The following examples demonstrate that in fact the pronominal copy may occur in a range of nominal GF functions: (23)-(25) illustrate OBJ, OBJ of preposition and indirect (dative) OBJ respectively.

(23) t-abdū   kaɁanna-hum y-ḥabb-ūna-hā
3-seem.IPFV.SGF as.if-3PL.ACC 3-love.IPFV-PL-3SGF.ACC

She seems (e.g. showing on her face) as though they love her.

(24) t-abdū   kaɁanna-hum ḥaraǧ-ū   maʕa-hā
3-seem.IPFV.SGF as.if-3PL.ACC went.out.PFV.3-PL with-3SGF.ACC

She seems (e.g. showing on her face) as though they went out with her.

(25) t-abdū   kaɁanna-hum Ɂarsal-u   la-hā
3-seem.IPFV.SGF as.if-3PL.ACC sent.PFV.3-PL to-3SGF.ACC
risālat-an
letter-INDEF.ACC

She seems (e.g. showing on her face) as though they sent a letter to her.

Further, the copy pronoun may be more deeply embedded in the complement:

(26) t-abdū   ka?anna Ahmad-a   rafaḍa   ?an
     3-seem.IPFV.SGF as.though Ahmad-ACC refuse.PFV.3SGM that

     y-aštarī   la-hā   fostān-an   ğadīd-an
     3-buy.IPFV.SGM to-3SGF.ACC dress-INDEF.ACC new-INDEF.ACC

     She seems like Ahmad refused to buy her a new dress.

As well as serving as the antecedent of a copy pronoun, as AT argue for cases of CR in English and Swedish, it seems to be the case that the matrix subject is necessarily interpreted as the PSOURCE. The free translation in (23)-(25) is intended to indicate that such examples are only felicitious as reports of direct perception in which some aspect of the matrix subject serves as the source of perception. Although we will have nothing further to say about this possibility here, we note that it is also possible to express the PSOURCE by means of a PP as shown in (27).

(27) ?anā qult-u   ?anna-hā   y-abdū   **ʕalay-hā**
     I   said.PFV-1SG that-3SGF.ACC 3-appear.IPFV.SGM on-3SGF.GEN

     (wa)   ka?anna-hum qatal-ū   umma-hā
     (CONJ) as.if-3PL.ACC killed.PFV.3-PL mother-3SGF.GEN

     I said that it seems (on her) as though they killed her mother.

So to summarize, verbs such as *yabdu* 'seem' appear with a single propositional argument in an EXPL construction and do not exhibit SSR raising. The complement is introduced by the complementising particle *?anna*. However, if the complement is instead introduced by *ka?anna*, we see the characteristics of copy raising with this perceptual report verb: a lexical NP may occur in subject position controlling verb agreement, and serves as the antecedent of a pronominal copy within the complement clause.[5] The pronoun may occur in a range of different grammatical functions.

A further question is whether or not the copy pronoun is obligatory. If no copy is required then it is possible that these verbs (like English perceptual ressemblance verbs) can occur with a thematic subject. We have so far come across no authentic examples lacking a copy pronoun, and an example such as (28) is judged by informants to be bad, consistent with the view that what we have is a case of genuine CR.

(28) *t-abdū   ʕalay-ha   wa   ka?anna al-awlād-a
     3-seems.IPFV.SGM on-3SGF.ACC CONJ as.though DEF-children-ACC

     y-akrah-ūna   John
     3-hate.IPFV-PL John

     She seems as though the children hate John.

What is the status of the element *ka?anna*, and in particular, is it a prepositional predicate heading an XCOMP and taking a propositional argument, or is it

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[5]Verbs in this class may also occur with a predicative complement, which we do not discuss here.

a simple complementiser or particle? Since (if we are correct) there is no SSR with perceptual report verbs in MSA then there is no independent motivation for proposing an XCOMP headed by *kaʔanna*. On the other hand, MSA (and Classical Arabic (CA)) has a rich system of presentential elements (traditionally '*ʔinna* and her sisters'), which include *kaʔanna* and *ʔanna* (see earlier examples). Traditional grammar treats these as members of a separate part of speech, that of particle. These particles must be followed by a nominal element in the accusative case. A governed pronominal occurs as an affix (or clitic) attached to the particle itself, see (23)-(25).[6]

Within the generative tradition, the element *ʔanna* is standardly assumed to be a COMP, though there is very little discussion of the wider set of particles including *kaʔanna*. Reflecting a broad consensus, Aoun et al. (2010) state there are two broad classes of complementiser in Arabic, introducing finite and non-finite clauses (exemplified by *ʔanna* and *ʕan* respectively in MSA), where 'non-finite' denotes a sentence lacking independent temporal interpretation. They present only cases in which the element after the complementiser is the subject. The fact that the COMP assigns ACC to the adjacent SUBJ (e.g. (29) and (19) above), while it is NOM in uncomplementised finite clauses motivates more elaborated layers of functional projections in some accounts, but the assumption that the particles themselves are in COMP is maintained across these variant analyses.

(29) ʔaʕtaqid-u   ʔanna l-walad-a   fī l-bayt-i
     believe.IPFV-1SG that   the-child-ACC in the-house-GEN

     I believe that the child is in the house.   MSA: Aoun et al:16

Working in a dependency grammar framework El Kassas (2005) takes the structure of the embedding (that is, the constituent governed by *yabdū*) in (30) to be a sort of proleptic construction in which the embedded proposition is the head, governing the evidential phrase, as indicated schematically by the bracketing in (30) (the same analysis is extended to the full set of particles).[7]

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[6]In Hebrew CR is possible in the *ke-ilu* construction. Lappin (1984, 246-247) gives the examples below and states that '... in Hebrew the "as if" phrase in "seems as if" constructions takes an S with a "that" complementiser'. According to Landau (2011, 783) *ke* is the preposition 'as' and *ilu* is the counterfactual complementiser 'if'. It is possible to delete either the preposition or the counterfactual complementiser, but not both.

(i) a. (ze) nireh   ke-ilu še Ḥaim sameaḥ
       It   appears as-if that Haim (is.happy)
       It appears as if Haim is happy.

    b. Ḥaim nireh   ke-ilu še   hu sameaḥ
       Haim appears as-if   that he happy
       Haim appears as if he is happy.   Hebrew: Lappin 1983:247

[7]The glossing and transliteration of (30) have been modified to increase consistency with other examples in this paper.

(30) y-abdū   [[ʔanna al-ʔawlād-a]   [yalʕab-ūn   (huma)]]
    3-seem.IPFV.SGM   that   DEF-children-ACC 3-play.IPFV-PL (3PL)

    It seems that the children are playing.   MSA: El Kassas: 262

Within a dependency-based approach, this analysis reflects both the lexemic status of the particles and the semantic contribution which they make. El Kassas (2005) argues that the particles (which she takes to be evidential Prepositions (which unlike other Prepositions, govern the ACC case)) are evidentiality markers: the tabulation in (31) summarises the broad outlines of the meanings which she ascribes to the different elements.[8]

(31) *ʔinna*   statement, direct evidentiality (visibly, I perceive that..)
      laʕalla   probablity
      layta   desirability
      ʔanna   observation based on supposition, inference, certitude
      kaʔanna   evaluation, comparison
      lakinna   concessive, contradictory

The relationship between the choice of presentential particle and notions of evidentiality is clearly a promising direction for further investigation. However within the framework of assumptions we adopt, the fact that such elements carry varieties of evidential meaning does not entail that they cannot be treated as complementisers, and we will adopt this analysis. Developing an account of their case marking properties, and of the requirement that they must be directly followed by a nominal element falls outside the scope of this paper but see Aoun et al. (2010) for some rather inconclusive discussion of the case marking issue. The crucial point from the present perspective is that there is no basis for proposing that *kaʔanna* itself heads an XCOMP and subcategorises a COMP argument. Given this, the f-structure for a sentence such as (32) is as shown in (33).

(32) t-abdū   mona kaʔanna-hum   y-ḥibb-ūna-ha
    3-seem.IPFV.SGF mona as.though-3PL.ACC 3-love.IPFV-PL-3SGF.ACC

    Mona seems (e.g. showing on her face) as though they love her.

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[8]The syntactic behaviour of these elements is largely identical, however two of them, *kaʔanna* and *ʔinna* can introduce a main clause, while the others cannot.

(i) kaʔanna al-samāʔ-a   t-umtiru
    as.though DEF-sky-ACC 3-rains.IPFV.SGF
    As though it is raining.

(33)
$$
\left[
\begin{array}{ll}
\text{PRED} & \text{`SEEM} < \text{COMP}> \text{SUBJ'} \\
\text{SUBJ} & a\left[\begin{array}{ll}\text{PRED} & \text{`MONA'}\end{array}\right]\text{-------} \\
& \left[\begin{array}{ll}
\text{OBJ} & p\left[\begin{array}{ll}\text{PRED} & \text{`PRO'}\end{array}\right]\text{---} \\
\text{SUBJ} & \left[\begin{array}{ll}\text{PRED} & \text{`PRO'} \\ \text{NUM} & \text{PL} \\ \text{PERS} & 3\end{array}\right] \\
\text{PRED} & \text{`LOVE} < \text{SUBJ, OBJ}> \text{'} \\
\text{COMPFORM} & \text{KA\textipa{P}ANNA}
\end{array}\right] \\
\text{COMP} &
\end{array}
\right]
$$

Our hypothesis, then, is that the verb *yabdū* 'seem' is a CR predicate in the presence of the complementiser *kaʔanna* (as with other cases of CR, the SUBJ of *yabdū* is not thematically licensed by this predicate, but anaphorically identified with the embedded pronominal. In other cases it occurs with an expletive subject. Under this hypothesis, we expect that the CR examples are really only possible when the SUBJ can be interpreted as a perceptual source.

(34) shows the lexical entry for the expletive case — *yabdū* takes a single COMP argument, selects the complementiser *ʔanna* (we simply use the string form as the value name). For consistency with standard LFG assumptions about the obligatory nature of the SUBJ, the verb is specified as selecting a non-thematic subject which cannot have a PRED value, but so-called 'expletive subjects' are not overt in Arabic.[9] The verb is associated with the *seem* meaning constructors proposed by Asudeh and Toivonen (2012) - *seem* is a one place predicate semantically and the PSOURCE is some aspect of the eventuality.

(34) $yabd\bar{u}_{expl}$ $(\uparrow \text{PRED}) = $ 'SEEM$< $ COMP$> $ SUBJ'
                  $(\uparrow \text{COMP COMPFORM}) = $ ʔANNA
                  $\neg (\uparrow \text{SUBJ PRED})$
                  $(\uparrow \text{SUBJ NUM}) = $ SG
                  $(\uparrow \text{SUBJ PERS}) = 3$
                  $(\uparrow \text{SUBJ GEND}) = $ M
                  seem: $\lambda p \lambda s' seem(s', p)$
                         $\lambda S \lambda s \exists v_\epsilon [S(s) \wedge \text{PSOURCE}(s) =_\tau v_\epsilon]$

A partial entry for copy-raising *yabdū* is shown in (35) (the verbal inflection optionally introduces a PRED PRO value for the SUBJ since Arabic is a pro-drop language, and relevant agreement constraints, but these are omitted here). The complementiser is required to be *kaʔanna* and the 'raised' SUBJ is specified as the antecedent of some appropriate pronominal. The variable COPYPATH stands for the set of paths to possible copy pronouns — the examples above illustrate a range of such functions. The verb is associated with the *seem_cr* meaning constructors

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[9]An alternative to the negative constraint is to have the 3SGM form of the verb optionally introduce a SUBJ FORM feature. In the present context, nothing hangs on this.

proposed by Asudeh and Toivonen (2012) - *seem* is a one place predicate semantically and the PSOURCE is required to be some aspect of the entity which is the SUBJ.

(35) $yabd\bar{u}_{cr}$ (↑ PRED) = 'SEEM< COMP> SUBJ'
          (↑ COMP COMPFORM) = KAʔANNA
          (↑ SUBJ)$_\sigma$ = ((↑ COPYPATH)$_\sigma$ ANTECEDENT)
          seem.cr: $\lambda P\lambda x\lambda s.[seem(s, P(x)) \wedge$ P-SOURCE$(s) =_\tau x]$
          mr: $\lambda f\lambda x.x$: $[a \multimap (a \otimes p)] \multimap (a \multimap a)$

As the examples above have shown, the complementiser serves the same purpose as the intervening *as if* or *like* predicate of English (although it differs syntactically in that it does not head an predication). An attractive feature of the flexible syntax-semantics interface in LFG is that one meaning can be associated with different syntaxes (and glue terms guiding the composition), as shown in (36) and (37) below.

(36) $ka\text{ʔ}anna_{cr}$ (↑ COMPFORM) = KAʔANNA
          $\lambda P\lambda s.\exists\epsilon.[(s \sim \epsilon) \wedge P(\epsilon)]$:
          $[(↑_\sigma$ EVENT$) \multimap (↑_\sigma)] \multimap ((\text{COMP } ↑_\sigma)$ EVENT$) \multimap ↑_\sigma$

(37) *like*   (↑ PRED) = 'like'
          $\lambda P\lambda s.\exists\epsilon.[(s \sim \epsilon) \wedge P(\epsilon)]$:
          $[(↑ \text{COMP}_\sigma$ EVENT$) \multimap (↑ \text{COMP}_\sigma)] \multimap ((\text{XCOMP } ↑_\sigma)$ EVENT$) \multimap ↑_\sigma$

If the principles of completeness and coherence are adopted as constraints on well-formed f-structures, as they are in standard LFG, then a structure such as (33) is ill-formed. This is because the SUBJ of *seem* is in a non-thematic position (the thematic position being occupied by the pronominal with which it is co-indexed). In order to account for such structures, we propose extending the **Extended Coherence Condition** to cover SUBJ as well as the UDF functions (TOP and FOC).

(38) **Revised Extended Coherence Condition**
     A UDF **or SUBJ** must be linked to the semantic predicate argument structure of the sentence, either by being functionally equated with, or by binding an integrated grammatical function.

There are several other alternatives to this approach. One possibility is that the RP may be syntactically inactive, rather than syntactically active. If the PRED value is restricted out, then the dependency would be a case of functional control and the structure would be coherent (see Asudeh (2012) for this approach to inactive resumptives). Another possibility is that notions of *syntactic* completeness and coherence are abandoned in favour of a purely semantic approach. Discussion of these alternatives would take us well beyond the scope of the current paper.

To summarize, we have argued that MSA verbs in the preceptual report class show two distinct patterns, an expletive SUBJ variant involves a COMP introduced

by *ʔanna*, and places no particular PSOURCE restriction while the CR variant involves a COMP introduced by *kaʔanna*. This is associated with a CR semantics, the lexical requirement for a pronominal copy, and the relevant manager resource, in line with the analysis developed in Asudeh (2004, 2012) and AT.

3 Maltese Perceptual Reports

Perceptual report predicates in Maltese (henceforth MT) include the verb *deher* 'seem/appear', the pseudo-verbs *donn*+PRN, diachronically the imperative of 'believe/think', and *qis*+PRN both '(seem/appear/taste/sound) as.though/as.if'.[10] (39) exemplifies the expletive construction with *deher*, in which the verb appears in default 3SGM form and the subject is expressed only in the embedded COMP. In (40) the subject is in the matrix clause and both matrix and embedded verbs agree with it. Similarly in (41) the embedded (non-verbal) predicate shows agreement with the matrix subject. The embedded subject cannot be overt in these examples and the evidence from standard tests for raising (idiom chunks, meaning preservation under passivisation, expletives, etc) suggest that these are examples of SSR (MT like MSA and the Arabic vernaculars lacks an infinitive form). A plausible f-structure for (41) is thus (42), while (43) shows the f-structure corresponding to the expletive subject example (39).

(39) J-i-dher   t-tfal   sejr-in   tajjeb
     3-FRM.VWL-appear.IPFV.SGM DEF-children going.ACT.PRT-PL good.SGM
     It seems the children are doing well.

(40) It-tfal   dehr-u   qed j-ieħd-u   gost
     DEF-children appear.PFV.3-PL PROG 3-take.IPFV-PL pleasure
     The children seem (as though) they are enjoying themselves (lit: taking pleasure).

(41) Dehr-et   imdejjq-a
     seemed.PFV-3SGF sad-SGF
     She seemed sad.

(42)
$$
\begin{bmatrix}
\text{PRED} & \text{'SEEM< XCOMP> SUBJ'} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{FEM} \\ \text{PERS} & \text{3} \end{bmatrix} \\
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{'SAD<SUBJ>'} \\ \text{SUBJ} & \underline{\qquad\qquad} \end{bmatrix}
\end{bmatrix}
$$

---

[10]The Preposition *bħal* 'like/as' and the related complementiser *bħallikieku* (bħal-(li-kieku)), where *li* is the usual COMP and (li-)kieku is the full and shortened version of the counterfactual COMP may also be used to express perceptual reports in combination with, or in the absence of, the predicates listed in the text. We leave full consideration of this element to one side. See Camilleri and Sadler (In prep) and Camilleri (In prep) for further work on Maltese perceptual reports.

(43)

$$\begin{bmatrix} \text{PRED} & \text{`SEEM}< \text{COMP}> \text{SUBJ'} \\ \text{SUBJ} & \begin{bmatrix} \text{FORM} & \text{IT} \end{bmatrix} \\ \\ \text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`GO-WELL} < \text{SUBJ}>\text{'} \\ \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`CHILDREN'} \\ \text{NUM} & \text{PL} \\ \text{GEND} & \text{MASC} \\ \text{PERS} & 3 \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Suppressing irrelevant details, we might posit the following simplified entry for the EXPL and SSR instances of *deher*, which differ syntactically but share the same semantics (again, we give only the meaning side of the meaning constructors).

(44) *jidher$_{expl/ssr}$*   { ($\uparrow$ PRED) = 'SEEM$<$ COMP$>$ SUBJ'
$\qquad\qquad\qquad$ ¬ ($\uparrow$ SUBJ PRED) |
$\qquad\qquad$ ($\uparrow$ PRED) = 'SEEM$<$ XCOMP$>$ SUBJ'
$\qquad\qquad$ ($\uparrow$ XCOMP SUBJ) = ($\uparrow$ SUBJ) }
$\qquad\qquad$ **seem**: $\lambda p \lambda s' seem(s', p)$
$\qquad\qquad\qquad$ $\lambda S \lambda s \exists v_\epsilon [S(s) \wedge \text{P-SOURCE}(s) =_\tau v_\epsilon\,]$

However Maltese *deher* also allows examples such as (45) to (48), which are strongly reminiscent of copy raising. Here the matrix verb *deher* shows 3SGF agreement (MT is a pro-drop language), indicating that *she* is the subject of the clause, coreferential with a pronoun in embedded OBJ function. In (45) no complementising element introduces the finite embedded clause - (46) shows that the prepositional or complementising element *bħal/bħallikieku* is optionally possible.

(45) T-i-dher　　　　　 ġa　　ta-w-ha　　　　　　 xebgħa
　　　3-FRM.VWL-seem.IPFV.SGF already give.PFV.3-PL-3SGF.ACC smacking
　　　xogħol x't-a-għmel!
　　　work　what.3-FRM.VWL-do.IPFV.SGF

　　　She$_i$ seems like they already gave her$_i$ a whole load of work to do!

(46) T-i-dhr-u　　　　　　 (bħallikieku) xi　　ħadd
　　　2-FRM.VWL-appear.IPFV-PL as.though　　some no.one
　　　qal-i-l-kom　　　　　　 biex
　　　said.PFV.3SGM-EPENT.VWL-DAT-2PL in.order.to
　　　t-i-tilq-u
　　　2-FRM.VWL-leave.IPFV-PL

　　　You$_i$ seem like someone told you$_i$ to leave.

The pseudo-verbs *donn-* and *qis-* may also optionally occur with *jidher*. As pseudo-verbs, these forms encode agreement (here with the matrix subject) by means of ACC affixes. In (48) the copy pronoun is the object of a preposition, and hence also ACC. In fact pseudo-verbs can also occur as the matrix predicate

in SSR and CR constructions, and the analysis we put forward here of SSR and CR extends to the pseudo-verbs in these constructions, although we focus here only on *deher*.

(47) Marija t-i-dher (donn-ha)
Mary 3-FRM.VWL-seems.IPFV.SGF as.though-3SGF.ACC
daħħl-u lil omm-ha l-isptar
enter.CAUSE.PFV.3-PL ACC mother-3SGF.GEN DEF-hospital

Mary$_i$ seems (as though) they admitted her$_i$ mother to hospital.

(48) Dehr-**et** qis-**ha** donn-**ha** għajjt-u
seem.PFV-3SGF as.though-3SGF.ACC as.though-3SGF.ACC shout.PFV.3-PL
magħ-**ha**
with-3SGF.ACC

She$_i$ seemed as though they shouted at her$_i$.

Recall that a key claim of Asudeh and Toivonen (2012) is that there is an important interpretive difference between CR and SSR with verbs in the perceptual report class (such as English *seem*). In CR the PSOURCE is necessarily the SUBJ while in SSR it is an aspect of the eventuality. Given that in Maltese the embedded predicates in the putative SSR examples (such as (40)) show agreement (with the 'raised' subject), and Maltese is a pro-drop language, the question arises as to whether these examples are in fact SSR (as proposed above) or better treated as instances of copy raising. Our argument that these two processes are distinct in Maltese is based on a clear contrast in terms of the PSOURCE role in relevant examples. Consider (45). This is infelicitous if inferred from a pile of files on the desk, but fully appropriate if she is present and looking panicky and stressed. That is, this sentence is only appropriate then if 'she' is the direct source of perception. The same constraint holds over the circumstances in which (46)-(48) are appropriate: the PSOURCE is necessarily the individual.

This is in marked contrast with examples of putative SSR, such as (40). In these cases, the PSOURCE can be the individual or any other aspect of the eventuality. Thus (49) might be felicitously uttered after entering a room and discovering that she was not present in the room, corresponding to an epistemic reading (concluding from the evidence). Similarly, a scenario for (50) might be one in which the 'she' in question habitually puts on slippers when returning to the house, again as a conclusion from the evidence (the absence of the slippers).

(49) T-i-dher ġa telq-et
3-FRM.VWL-seem.IPFV.SGF already leave.PFV-3SGF

She seems to have left already (e.g. the room is empty).

(50) T-i-dher ġie-t mill-mixi
3-FRM.VWL-seem.IPFV.SGF come.PFV-3SGF from.DEF-walking

She seems to be back from walking (e.g. her slippers have gone).

A further difference between CR and SSR (Lappin, 1984; Potsdam and Runner, 2001) concerns the scoping possibilities. CR verbs cannot take scope over their quantified subjects, but SSR verbs can do so. In the glue approach developed by Asudeh (2012) and Asudeh and Toivonen (2012) this difference follows from the differences in composition (i.e. in the glue side of the meaning constructors) between CR and SSR verbs.[11] The following English examples demonstrate (Asudeh and Toivonen, 2012).

(51) No runner seemed like she was exhausted.
For no runner x, x seemed like x was exhausted.
no>seem, *seem>no

(52) No runner seemed to be exhausted.
For no runner x, x seemed to be exhausted.
It seemed to be the case that for no runner x, x was exhausted.
no>seem, seem>no

The putative SSR examples and the CR examples in Maltese also appear to differ in exactly this manner. That is, the raising cases permit both wide and narrow scope for a quantified subject (see (53)), while case of CR permit only wide scope for the quantified subject (see (54)).

(53) Kull saħħara t-i-dher   qars-et   lil Marija.
every witch   3-FRM.VWL-seem.IPFV.SGF pinch.PFV-3SGF DEF Mary

Every witch seems like she pinched Marija.
(every>seem and seem>every)

(54) Kull saħħara t-i-dher   li
every witch   3-FRM.VWL-seem.IPFV.SGF COMP
qaras-ha   Mario.
pinch.PFV.3SGM-3SGF.ACC Mario

Every witch seems like Mario pinched her. (every>seem)

Note that the behaviour of examples with non-subject copy pronouns (such as (54)) in permitting only wide scope interpretations for the quantified subject is equally consistent with an analysis which treats the subject as a thematic argument (similar to English perceptual ressemblance verbs such as *sound like*). Such verbs also permit only a wide scope interpretation of the subject, as shown in (55) and (56). In principle, then, either a thematic subject or a copy-raising analysis of such examples with *seem* might be appropriate, but we will continue to refer to cases such as (54) as CR.

---

[11]We refer the interested reader to Asudeh and Toivonen (2012, 31-32) to a clear and general statement of why the narrow scope for subject reading cannot be derived.

(55) Kull saħħara n-x\<t\>amm-et bħal marr-et t-għum.
every witch REFL-smell.PFV-3.SGF as.though go.PFV-3SGF 3F-swim

Every witch smelled as though she went swimming. (every>smell)

(56) Kull saħħara n-s\<t\>emgħet bħal qaras-ha
every witch REFL-hear.PFV.3SGF as.though pinch.PFV.3SGM-3SGF.ACC
xi ħadd.
someone

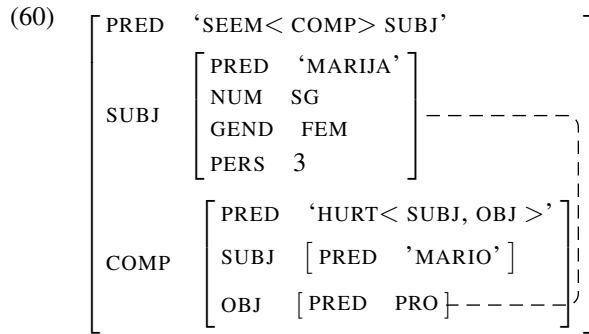Every witch sounded as though someone pinched her. (every>sound)

Before moving on, we note that choice of complementiser does not play a determining role in Maltese. The preposition/complementiser *bħal//bħallikieku* also occurs in SSR (and in expletive subject examples) and is not required in the CR construction. The choice of complementising element is related in some way to the evidential basis: (57) (with *li*) is appropriate if the observation is factual, whereas (58) indicates that an evaluation/interpretation is involved.

(57) Marija t-i-dher (li) ma ta-t-x
Mary 3-FRM.VWL-seem.IPFV.SGF (COMP) NEG give.PFV-3SGF-NEG
kas / ma semgħ-et xejn
notice / NEG hear.PFV-3SGF nothing

Mary seems (as if) she didn't bother/she heard nothing.

(58) Marija t-i-dher bħallikieku ma ta-t-x
Mary 3-FRM.VWL-seem.IPFV.SGF COMP NEG give.PFV-3SGF-NEG
kas / ma semgħ-et xejn
notice / NEG hear.PFV-3SGF nothing

Mary seems as though she didn't bother/she heard nothing.

Taking the construction shown in (45) and (46) to be copy raising, the additional feature of MT is that the complementiser is not required. Just as in MSA, no intervening (prepositional) XCOMP is required. The structure of (59) would be as given in (60).

(59) Marija t-i-dher weġġagħ-ha sew,
Mary 3-FRM.VWL-appears.SGF hurt.CAUSE.PFV.3SGM-3SGF.ACC well
Mario
Mario

Mary seems as though Mario hurt her a lot.

(60)
$$\begin{bmatrix} \text{PRED} & \text{`SEEM} < \text{COMP} > \text{SUBJ'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`MARIJA'} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{FEM} \\ \text{PERS} & 3 \end{bmatrix} \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{`HURT} < \text{SUBJ, OBJ} > \text{'} \\ \text{SUBJ} & [\text{PRED} \quad \text{'MARIO'}] \\ \text{OBJ} & [\text{PRED} \quad \text{PRO}] \end{bmatrix} \end{bmatrix}$$

The (partial) lexical entry for the CR use of *deher* 'seem' in the examples we have discussed so far is shown in (61), very similar to (35) for MSA. The second line specifies that the copy pronoun fills a non-subject function in the COMP.[12]

(61) *jidher$_{cr}$* ($\uparrow$ PRED) = 'SEEM$<$ COMP$>$ SUBJ'
    ($\uparrow$ SUBJ)σ = (($\uparrow$ COMP GF-SUBJ)σ ANTECEDENT)
    seem.cr: $\lambda P\lambda x\lambda s.[seem(s, P(x)) \wedge \text{P-SOURCE}(s) =_\tau x]$
    mr: $\lambda f\lambda x.x: [a \multimap (a \otimes p)] \multimap (a \multimap a)$

However CR is not limited to the immediately embedded COMP, and in more deeply embedded positions the pronominal is not limited to non-subject functions. Example (62) would be appropriate in a scenario in which the addressee has been to an interview for a child-minding post, and some aspect of his/her demeanour indicates that the prospective employers ('they') have seen that the addressee can deal well with children.

(62) T-i-dher   ğa   j-af-u   li   t-af   t-mur
    3-FRM.VWL already 3-know.IPFV.PL COMP 2-know.SG 2-go.IPFV.SG
    mat-tfal.
    with.DEF-children

    You seem (from some positive and upbeat aspect of your demeanour) as though they already know that you know how to deal with children.

This suggests that the CR pattern is restricted to non-subject functions only within the topmost COMP, and hence the second line in (61) should be replaced by:
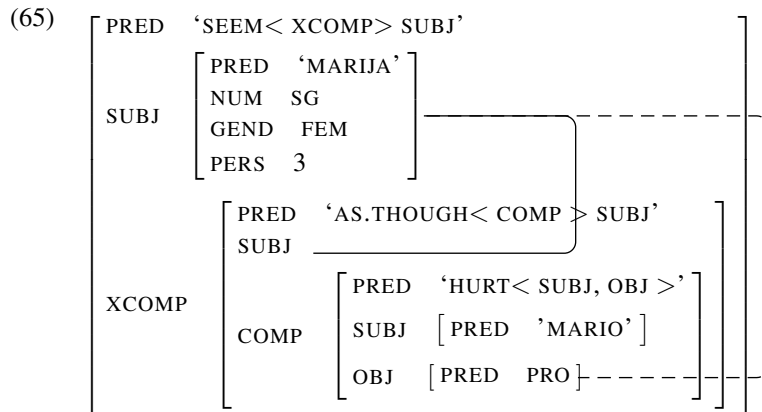
(63) ($\uparrow$ SUBJ)σ = (($\uparrow$ COMP { GF-SUBJ | COMP$^+$ GF })σ ANTECEDENT)

We have already seen that it is possible to combine a number of perceptual resemblance predicates. An example of this sort is given in (64), where the matrix predicate is *deher* 'seem' and the next (the highest embedded) predicate is the pseudo-verb *donn* +PRN 'as if, as though'.[13] This suggests that the embedded verb heads an XCOMP, and the structure involves both SSR and a CR dependency.

---

[12]We will amend this very shortly when further examples are considered.

[13]Recall that the pseudo-verbs appear with ACC morphology marking their subject arguments.

(64) Marija t-i-dher   donn-ha
      Mary   3-FRM.VWL-appears.SGF as.though-3SGF.ACC
      weġġagħ-ha   sew, Mario.
      hurt.CAUSE.PFV.3SGM-3SGF.ACC well Mario

      Mary seems as though Mario hurt her a lot.

(65)
$$
\begin{bmatrix}
\text{PRED} & \text{'SEEM}< \text{XCOMP}> \text{SUBJ'} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'MARIJA'} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{FEM} \\ \text{PERS} & 3 \end{bmatrix} \\
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{'AS.THOUGH}< \text{COMP}> \text{SUBJ'} \\ \text{SUBJ} & \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{'HURT}< \text{SUBJ, OBJ}>' \\ \text{SUBJ} & [\text{PRED} \quad \text{'MARIO'}] \\ \text{OBJ} & [\text{PRED} \quad \text{PRO}] \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

(48) above shows three perceptual report predicates occurring together in a chain of raising structures, which suggests a lexical description along the lines (66) for the version of copy-raising *deher* which takes an XCOMP.

(66) *jidher$_{cr}$*   ($\uparrow$ PRED) = 'SEEM$<$ XCOMP$>$ SUBJ'
                 ($\uparrow$ XCOMP SUBJ) = ($\uparrow$ SUBJ)
                 ($\uparrow$ SUBJ)σ = (($\uparrow$ XCOMP$^+$ {COMP GF-SUBJ $\mid$ COMP$^+$ GF})σ ANT)
                 seem.cr: $\lambda P \lambda x \lambda s.[seem(s, P(x)) \wedge \text{P-SOURCE}(s) =_\tau x]$
                 mr: $\lambda f \lambda x.x$

Finally, the MT constructions, similar to the MSA constructions, motivate the extension of the **Extended Coherence Condition** given in (38) above.

Recall that in some dialects of English (including Asudeh (2012) and Asudeh and Toivonen (2012)'s dialect D), copy raising *seem* may occur with no pronominal copy, as shown in (5), repeated here for convenience:

(67) Chris seemed **like** Mary got the prize.

Such examples are taken to involve an instance of *seem* with a thematic argument (much like the perceptual resemblance verbs *sound like*, *look like* and so on). These share the key properties with CR verbs — the subject is interpreted as the PSOURCE which must take wide scope over the perception verb. This is also possible in Maltese, where we have examples such as (68), showing that the matrix subject is not necessarily coreferential with a pronominal in the embedded clause. The subject appears to be thematic in such examples, captured in the partial entry (69).

(68) T-i-dher   (li)   Marija/hi ħad-et   gost
3/2-FRM.VWL-seems.IPFV.SGF COMP Mary/she takes.PFV-3SGF fun

You/She$_i$ seem(s) like Mary$_j$ enjoyed herself$_j$.

(69) *jidher*$_{th}$ (↑ PRED) = 'SEEM< SUBJ, COMP> '
         seem.th: $\lambda p \lambda x \lambda s.[seem(s,x,p) \wedge \text{P-SOURCE}(s) =_\tau x]$

It is also possible to intercalate further perceptual report predicates between
the matrix clause and the complement sentence, as in (70) below. A question then
arises as to which predicate in the cascade takes a thematic subject. A natural
assumption is that it is the lowest predicate in the XCOMP cascade that takes a the-
matic subject and a complement clause, while the higher verbs and pseudo-verbs
are raising predicates. However this leads us to expect that the pseudo-verbs can
occur (alone) in structures such as (68), and this is not the case. We conclude
therefore that *deher* alone has an additional subcategorisation with a thematic sub-
ject. The proposed f-structure for (70) (which has a thematic subject *they* expressed
inflectionally) is shown in (71).

(70) J-i-dhr-u   qis-hom   Marija ħad-et   gost
3-FRM.VWL-seem.IPFV-PL as.though-3PL.ACC Mary   took.PFV-3SGF fun
warakollox!
after.all

They seem as though Mary had fun after all.

(71)
$$
\begin{bmatrix}
\text{PRED} & \text{'SEEM< SUBJ, XCOMP>'} \\[2pt]
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{NUM} & \text{PL} \\ \text{PERS} & 3 \end{bmatrix} \\[20pt]
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{'AS.THOUGH< COMP> SUBJ '} \\ \text{SUBJ} & \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{'TAKE< SUBJ, OBJ >'} \\ \text{SUBJ} & [\text{PRED} \quad \text{'MARIJA'}] \\ \text{OBJ} & [\text{PRED} \quad \text{FUN}] \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

4 Conclusion

This paper has investigated the encoding of perceptual reports in MSA and in Mal-
tese, making a contribution to the understanding of this area of syntax and seman-
tics in the Semitic languages. We have seen that while there are a number of syn-
tactic differences between the constructions found in Maltese and MSA, concerning
both the availability of raising itself and the role of a mediating 'as if' complemen-
tiser, the key semantic observation of AT concerning the PSOURCE is found to hold
also for these dialects of Arabic. In the absence of a mediating *like* predication in

CR, we have proposed an extension of the Extended Coherence Condition to satisfy syntactic coherence in these structures.

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