Focus reflexives, light verbs and causal entailments

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1 Introduction

Although the binding of pronouns has been thoroughly studied in syntax and semantics, the interaction of reflexives in focus with the arguments of causative verbs, importantly constraining thematic assignments and associated entailments, has still escaped our attention. The interaction between focus reflexives and causative verbs proves to be a fertile topic for an investigation of the syntax-semantics interface. Thematic causal agentive arguments induce a strong, exclusive interpretation of their agentive referents only when constrained by focus reflexives. In negative or downwards entailing contexts a new, distinct causal agent must be introduced, forcing disjoint reference of the focus reflexive with the binding argument, whose referent is considered to belong to the common ground and is hence assumed to be already familiar. The results of this investigation will support the view that lexical concepts incorporate light verbs, underlying the linguistic variability of the lexical thematic roles assigned by predicates.

If we consider (1abc) all true descriptions of a situation in which Mary received flowers from John, no ordinary truth-conditional semantics would offer the right tools to analyze their differences. Apparently, a reflexive pronoun in sentence final, non-argument focus position, as in (1a), must still co-refer with the sentential subject, but constrains the entailments of the sentence without such a focus reflexive (1b). Focus reflexives also induce another contrastive dimension of alternatives than the common high pitch marked prosody on the agentive subject (1c).

(1)   a. *John*   *gave*   *Mary*   *the*   *flowers*   *[F himself]*.
       b. *[F John*   *gave*   *Mary*   *the*   *flowers]*.
       c. *[F JOHN]*   *gave*   *Mary*   *the*   *flowers.*

Often non-argument, reflexive pronouns as in (1a) are discarded as merely 'emphatic' and hence not of any interest to linguistic theory proper. But why would anyone add emphasis to the reference of the already prominent subject argument by adding a coreferential reflexive at the end of the sentence, as in (1a)? Marked prosody with high pitch on the subject would be the preferred option to indicate

subject focus, at least in English, as in (1c). This paper will argue that, although focus reflexives are non-arguments, in information structure they serve to constrain causal thematic roles, assigned by the verbal predicate to its arguments, dependent upon their incorporation of strong and weak light verbs.

For (1a) to be true, John must have handed the flowers he had planned to give to Mary directly to her, without anyone else's help or intervention. But (1b) could be true in other situations, where the action of giving Mary flowers may have been merely initiated, planned or paid for by John, but it was not entirely executed by him alone. For instance, if John ordered the flowers for Mary from the internet, the delivery agent 'in his stead' may actually have handed them over to her, with a note stating these flowers were from John. In this rather common situation, the complex action of giving someone flowers is partly executed by John, partly by the delivery agent and perhaps others could have contributed to the described action as well. It is clear that in all situations where (1a) is true, (1b) must be true, hence (1a) entails (1b), but not vice versa. However, marked prosody on the agentive subject, as in (1c), induces a contrastive set of alternative agents, who could each have given Mary the flowers, instead of John. In such alternatives John would not have given Mary the flowers, but someone else would have. Accordingly, (1c) entails (1b), but not vice versa, but (1c) does not entail (1a), nor vice versa. It is clear that the presuppositions and entailments of (1abc) deserve closer scrutiny, as the agentive role of arguments of causative verbs may be constrained or contrasted in various dimensions of comparison, attributing unique or shared involvement in an action. The force of the disjoint causative agent becomes clearer in negated sentences (2).

(2) a. *John   did   not   give   Mary   the   flowers   [F himself].*
     b. *[John   did   not   give   Mary   the   flowers]*
     c. [F*JOHN*]   *did   not   give   Mary   the   flowers.*

Clearly, the minimal scope of negation in (2a) includes only the focus reflexive, possibly facilitated by a pitch accent. Such minimal negative scope supports the inference that, besides John, someone else was also involved in giving the flowers to Mary. We can consistently and coherently add to (2a) the information that someone other than John, say the delivery agent, actually handed the flowers to Mary, but this would still entail that John gave Mary the flowers, (1b). Mary would rightfully answer any question who gave her the flowers by stating that John did, but not that the delivery agent did, for he would not have delivered the flowers had John not arranged for him to do so. But this entailment (1b) would be inconsistent with (2b), even without the same additional information about the delivery agent's involvement. In negating the focused subject in (2c) it is claimed that someone other than John gave Mary the flowers, so John would not have been involved in the action at all.

This use of focus reflexives in such simple, extensional contexts as (1a) may be considered to resolve some form of vagueness in the way we describe what

happened, but it turns out to have quite surprising, systematic and universal correlations with adverbial quantification, case assignment and light verb constructions that deserve careful linguistic scrutiny. The reflexive pronoun is used in light verb constructions with exceptional case marking (ECM) in English, receiving case from the light verbs *let/make* and its thematic role from the embedded predicate *give*, interpreting it as the agent, as in (3).

(3)   *John   let/made   himself   give   flowers   to   Mary.*

Interestingly, Dutch requires a CP complement with the strong light verb *make*, (4a) versus (4b), but an infinitival complement with the weak light verb *let* (4c), which appears marked in any case.

(4)   a. *[Jan]ᵢ   maakte   dat   [hij]ᵢ   bloemen   aan   Marie   gaf.*
          John   *made   that   he   the flowers   to   Mary   gave*
          'John made himself give flowers to Mary'.

       b. **Jan maakte zelf   zichzelf   zich   bloemen   aan   Marie   geven.*
          John made   SELF   HIMSELF   SE   flowers   to   Mary   gave
          'John made himself give flowers to Mary'.

       c. *Jan   liet   *zelf   zichzelf   *zich   bloemen   aan   Marie   geven*
          John   let   SELF   HIMSELF   SE   flowers   to   Mary   gave
          'John let himself give flowers to Mary'.

Since thematic roles are directly associated with entailments (Dowty 1991, Parsons 1991), the focus reflexive pronoun in English must be analyzed as interacting with the causal thematic role of the subject. English sentence-final focus reflexives clearly co-refer with the animate, agentive subject, even though they do not appear in argument position and hence cannot be properly bound by the subject. The encoding of thematic roles in this paper is based on Reinhart (2000, 2003), as it usefully distinguishes between the intentional planning agent, assigned [+m] and the executive agent, assigned [+c] (cf. section 2). The linguistic variability data show that languages like English with accusative sentence-final focus reflexives differ from languages like Dutch with non-agreeing focus reflexives that display free word order. Greek appears with nominative case in the periphery of the sentence (cf. section 3). The interaction of focus with negation is assumed to induce minimal scope on the reflexive, which semantically forces a new, disjoint co-agent to be introduced, relegating the remainder of the interpretation of the clause to the common ground, so the referent of the subject is given or presupposed (cf. section 4). The different syntactic structures in English, Dutch and Greek are argued to have strong or weak underlying light verbs in the final section 5, explaining how non-

argument reflexives interact systematically with the different theta grid of the verbs lexically encoded for the various languages.

2 Reflexivization in focus

Reflexives as direct object arguments must be bound by the subject (5a), but often appear optional, as the verbal predicate may reduce to an intransitive in (5b) without loss of meaning.

(5)   *a. John   washed   himself*
          b. John   washed.

Every situation in which (5a) is true must be one in which (5b) is true too and vice versa, hence (5a) and (5b) are logically equivalent in any ordinary truth-conditional semantics. Their semantic difference is attributed to the thematic roles, as in (5a) *himself* is the theme, assigned the features [-c, -m], just as any non-coreferential object DP would also bear (Reinhart 1997, 2000, 2003). In the lexicon the verbal predicate: *wash* assigns [+c, +m] to its subject, indicating the agent is both mentally, i.e. intentionally, involved in planning the action [+m], as well as causally as its executive agent [+c]. Reinhart's dual encoding of verbal predicates in the lexicon with ±c/±m features renders the thematic grid economical and efficient in explaining the basic alternations of passives, reflexives and unaccusatives. In (5b), internal reduction targets the thematic information in the lexical entry of the verb, merging the agent features [+c, +m] with the theme features [-c, -m] into a single complex [+c+m], [-c-m], assigned to the subject of inherently reflexive, intransitive predicates. (Reinhart 1997, Reinhart and Siloni 1999/2003, 2005).

Dutch and Greek use clitics and verbal morphology respectively (6ab), (7ab).

(6)   a. *Jan   waste   zichzelf.*
        John   wash-PAST-3sg.   SE-self
            'John washed himself'.

    b. *Jan   waste   zich.*
        John   wash-PAST-3sg.   SE
        'John washed'.

The Greek (7a) and (7b) differ from the Dutch (6a) and (6b) in two respects: (i) the Greek reflexive in object position *ton eafto tu* in (7a) carries accusative case, but the Dutch *zichzelf* in (6a) is not case marked; (ii) the Greek intransitive verb is overtly reflexive marked with the passive morphology *pli-**thi**-ke* in (7b), where Dutch uses the obligatory clitic *zich*/SE.

(7) a. *O   Yanis   epline   mono   ton   eafto   tu.*
the-NOM John-NOM wash-PAST-3sg. only[1]   the-ACC   self-ACC   his-GEN
'John washed just himself (and no one else)'.

  b. *O   Yanis   pli-thi-ke.*[2]
   the-NOM   John-NOM   wash+PERF-PAST+PASSIVE-3sg.
   'John washed'.

Since (5b), (6b) and (7b) are all unmarked ways of describing a bodily care action with oneself, (5a), (6a) and (7a) are marked, but clearly felicitous in a context, where John is known to wash others, for instance, first his children and then himself. Syntactically, the agent argument is merged externally in the specifier of Tense Phrase, while the theme-role is realized by the reflexive pronoun in the object position, bound by the subject, hence receiving accusative case (Reinhart 1983, Reinhart and Reuland 1993, Reuland 2001). Focus reflexives are, however, not arguments of the verb, appearing in the right periphery of the syntactic structure; hence, qualifying as non-arguments in the way they are merged syntactically. The focus reflexive surfaces in the right boundary of the clause and still bears accusative case, not occupying the verbal complement position.

Non-arguments are distinguished from arguments with respect to their causal role, that is, the executive agency of the verbal predicate (Reinhart 1997, 2000). The entailments are affected, if a clause in English contains a focus reflexive pronoun, as was already indicated in section 1. The agent 'John' may have planned the action described in (2a), but did not directly cause or execute the entire causal chain of sub-events. The same syntactic form may also describe a situation where the agent literally executed the entire action, but some else had planned it as such. The different entailments of the unique, i.e. strong executive agent in (1a) and non-unique, i.e. weak executive agent in (1b) and (2a) are argued to follow from the specifications of the theta grid (Reinhart 1997, 2000, 2003), constrained a semantically transparent way. In her own words:

> *"Concepts are encoded in the form of features giving rise to feature combinations mapping lexical interpretations to syntactic configurations: [+c+m]-agent, [-c+m]-experiencer, [-c -m]-theme, [+c]-cause, …"* (Reinhart 2003:1).

The causal thematic role appears as agent, cause or instrument in the subject position (8a) (Reinhart 2003: 5). Not all verbal predicates appear with the

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[1] Semantic operators, including focus particles like *only* and *even*, are usually taken to contribute to the intonational meaning of the sentence depending on the focal pitch accent (Krifka 2006, 2007).

[2] Greek verbs encode voice, aspect, mood, tense, person and number; Philippaki 1999, Ralli 2003, Theophanopoulou-Kontou 2004, Tsimpli and Roussou 2007, Anagnostopolulou and Alexiadou 2008.

same subject (8b).

(8)   a. *Max   /the storm   /the stone   broke   the   window.*
      b. *Max   /*the storm   /*the stone   washed   (himself).*

Reflexives are not restricted when forming constituents with nominal phrases in focal stressed configurations, but require agentive [+c, +m] subjects when in sentence final focus position, cf. (9abc).

(9) a. *[The storm itself] [Max himself] [the stone itself]   broke   the   window*
    b. *The storm /Max   /the stone   broke   the   window   himself /*itself.*
    c. *The   storm   scared   Mary   itself.*

Apparently, focus reflexives are also unacceptable with experiencers (10b).

(10)   a. *John   likes   noone   else   but   himself.*
       b. **John   likes   the   music   himself.*

In (10a) the reflexive is associated as argument with the verbal complement with an experiencer role [-c, +m] assigned to the subject. However, the reflexive pronoun is unacceptable in a non-argument focus position in (10b), since the subject is not agentive [+c, +m], but experiencer [-c, +m], assigned by the verb *like*. The distinction between argument reflexives and non-argument, focus reflexives is strongly supported by the lexically encoded thematic information attributed to arguments; focus reflexives requiring agentive subjects as unique or exhaustive causal force of the described action.

3 Agreement in reflexivization: English, Dutch, Greek

Focus reflexives display different case marking patterns in English, Dutch and Greek. English uses sentence-final reflexive in FP, while Dutch requires focus reflexives to immediately precede the verbal core. For Greek, a different pronominal element is used, characteristic for contrastive, emphatic meaning.

In Dutch, the reflexive *zelf* is neither case marked, nor agrees in person or number with its binding DP. It admits relatively free word order, as (11a–c) are virtually synonymous. In (11d) *zelf* must part of the indirect argument *Mary* and (11e), though perhaps slightly marked, *zelf* is interpreted as part of the direct argument *flowers*, prosodically distinct from (11b) in a way that need not concern us here. The Dutch case-gender-number-less focus reflexive *zelf*, which constrains causal thematic roles of the subject, is realized in (11a–c). We consider (11de) to be reflexives, which form a constituent with their binders and hence fall outside the scope of the current paper.

(11) a. *Jan gaf zelf de bloemen aan Marie.*
    John gave-PAST-3sg. SELF the flowers to Mary
    'John gave the flowers to Mary himself'.

  b. *Jan gaf de bloemen zelf aan Marie.*
    John gave-PAST-3sg. the flowers SELF to Mary
    'John gave the flowers to Mary himself'.

  c. *Jan gaf Marie de bloemen zelf.*
    John gave-PAST-3sg. Mary the flowers SELF
    'John gave the flowers to Mary himself'.

  d. *Jan gaf de bloemen aan Marie$_i$ zelf$_i$.*
    John gave-PAST-3sg. the flowers to Mary SELF
    'John gave the flowers to Mary herself'.

  e. *Jan gaf de bloemen$_i$ zelf$_i$ aan Marie.*
    John gave-PAST-3sg. the flowers SELF to Mary
    'John gave the flowers themselves to Mary'.

In Greek, the focus reflexive, case marked for nominative (12a) differs from the ungrammatical co-referential object reflexive, case marked with accusative (12b). The Greek agreement patterns provide additional evidence for the adjunct-like behaviour of focus reflexives across languages.

(12) a. *O Yanis edose o idhios* .
    the-NOM John-NOM gave-PAST-3sg. the-NOM same-NOM

    ta luludia sti Maria
    the-ACC flowers-ACC to-the-ACC Mary-ACC
    'John gave the flowers to Mary himself'.

  b. *O Yanis edose ta luludia*
    the-NOM John-NOM gave-PAST-3sg. the-ACC flowers-ACC

    *sti Maria *ton eafto tu.*[3]
    to-the-ACC Mary-ACC the-ACC self-ACC his-GEN
    'John gave the flowers to Mary himself'.

Other pronouns, attested in similar focus configurations, bear nominative case.

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[3]   Anagnostopoulou and Everaert (1999) discuss the object anaphor in Greek.

(13)

O	Yanis	edose	ta	luludia	sti	Maria	apo	monos	tu.
the-NOM	John-NOM	gave-PAST-3sg.	the-ACC	flowers-	to-the-ACC	Mary-ACC	by	own-ACC	his-GEN

'John gave the flowers to Mary by himself / on his own initiative'.

The entailments of negative sentences show their interaction with causal argument structure. Strong causal roles constrain the causal executive chain to be exclusively assigned to the agent, who also had the intention to perform the action [+m]. Weak causal thematic roles require that the argument played some role, but not necessarily an exclusive one, i.e. it denies the strong causal role. This dual causal thematic role assignment of [+c] for weak and [+C] for strong, exclusive causal involvement, we propose to integrate in the lexical encoding of arguments and focus structure, following Parsons (1991) and Dowty (1991:552):

> "*A thematic role (type) is a set of entailments of a group of predicates with respect to one of the arguments of each*".

Semantically, we argue below that the strong causal role feature [+C] requires a uniqueness clause, prohibiting other agents from involvement in the described action. The weak causal role feature [+c] simply lacks any constraint on whoever else may have been involved, but in negative contexts it induces a disjoint reference for a co-agent by separating the presupposed existential agent in the common ground, corresponding to the subject, from the existential focus information in its information structure.

We take the pronoun *o idhios* (the identical) to be the Greek equivalent of the English focus reflexive in meaning. According to Varlokosta and Hornstein (1991), *o idios* (the identical) has a dual behavior depending on its syntactic configuration. Non-Subject *idios* has a binder without obeying the locality restrictions of anaphors (Iatridou 1986). It cannot occur in embedded questions or relative clauses and, though it is found in noun complement constructions and adjuncts, it licenses only sloppy identity interpretations under ellipsis and cannot tolerate split antecedents. Subject *idios*, however, does not need to be bound and it can occur in embedded questions and relative clauses. It does not require a sloppy identity interpretation under ellipsis and can take split antecedents. As Varlokosta and Hornstein argue, these properties follow from the assumption that the former is an A'-bound pronoun, while the latter cannot be a bound pronoun, as it is subject to an A'-disjointness constraint typical of bound pronouns.

4 Negation and focus reflexives

The significance of focus reflexives is perhaps best attested in negated or downward entailing clauses, which entail that someone other than the subject was a co-

executive causal force of the planned action. In (18) negation either takes the entire VP in its scope, as in (18a), denying that John gave Mary the flowers, or it can take only the focus reflexive in its minimal scope as in (18b), which entails that John intended to give Mary the flowers himself, but someone else actually ended up giving them to her instead of him.

(14) a. *John   did   not   give   Mary   the   flowers.*
      b. *John   did   not   give   Mary   the   flowers   himself.*

Accordingly, (14a) denies that the [+m, +c] agent performed the action, leaving it entirely open whether anyone else did. In (14b) the strong causal role [+C] of the subject is denied, but maintains the option of weak, but still intentional causer [+c, +m]. Hence (14a) entails that no flowers were given to Mary by John, without any indication whether any else may have given her flowers. In (14b), someone else must have given her the flowers, if John was the initiator of the action or in some other way contributed to the described action. John may, for instance, have initiated the plan, but he may have arranged for someone else to execute his giving of the flowers. Although the argument for the co-causal role is implicit, in (14b) it must be interpreted as disjoint in reference from the overt argument in subject position, which binds the focus reflexive.

These disjoint reference entailments are similar, when a negative adverb takes the focus reflexive in its scope (15a), or a downward entailing verb (15b).

(15) a. *John   never   gave   Mary   flowers   himself.*
      b. *John   refused   to   give   Mary   the   flowers   himself.*

In (15a), John is involved in all actions of giving Mary flowers, always instructing or arranging for someone else to give flowers to Mary in his place. In (15b) the downward entailing predicate induces the inference that someone else must have given the flowers to Mary instead of John, even though he may still have come up with the plan.

If the two other languages under consideration in this paper, Dutch and Greek, show similar entailments in these transitive constructions, distinct underlying syntactic structures must give rise to the attested entailments, which hence should be attributed to independent, non-syntactic factors. If the same entailments are observed in linguistically variable configurations, a generalized explanation must appeal to the thematic information contained in the underlying verbal concepts. Thematic roles are hence at the core of our analysis, rather than syntax or morphology. If minimal scope negation takes the accusative case marked reflexive in English, the case-less, gender and number free *zelf* (SELF) in Dutch and the nominative *o idhios* (the identical) in Greek, it denies the strong causal role, as unique executive agent, even if the intention is still attributed to the structural sentential subject, coreferential with

the focus reflexive. It is assigned a weak causal role, for which we already have proposed to use the lower case thematic feature [+c], extending on Reinhart's (2000) notation of thematic roles.

It is indeed observed, along the same lines, that other transitive verbs behave accordingly, when appearing with negation:

(16) a. *John   did   not   build   the   house   himself.*
      b. *John   never   build   a   house   himself.*

Both (16a) and (16b) still entail that a house has been build for John, but by someone else. In other words, John (always) had someone else build him a house.

Reflexive verbs in English are intriguing cases. Is it possible to assume, considering (17ab), that John has still been washed, but by someone else?

(17) a. *John   did   not   wash   himself.*
      b. *John   never   washed   himself.*

The reading of an extensional transitive verb, intrinsically binding the reflexive object as in (17), could, in principle, be conflated with the interpretation of an inherently reflexive verb taking a focus reflexive in non-argument position. However, the reflexive in (17) is dominantly understood as the argument of the verb in both cases and not as a focus reflexive, which is not an argument of the verb by definition. Hence, both (17a) and (17b) give rise only to one entailment, namely that John was not washed at all, not by anyone. Negating actions such as kissing, that require in virtue of their intrinsic nature an immediate physical contact between agent and theme, do not make any sense with focus reflexive, requiring some else to execute the action instead of the referent of the subject. Denying that John kissed Mary himself would suggest that he had arranged for someone else to do it in his place, but kissing do not admit substitute agents. Inherent reflexive predicates like *wash* already entail the strong, unique causal role, so no other agent could have acted instead of the subject argument.

Similar to (16) and (17) are the entailments in Dutch in (18), with negation overtly taking narrow scope over *zelf.* despite their free order:

(18) a. *Jan   gaf   niet   zelf   de   bloemen   aan   Marie.*
         John   gave-PAST-3sg.   not   SELF   the   flowers   to   Mary
         'John did not give the flowers to Mary himself'.

      b. *Jan   gaf   de   bloemen   niet   zelf   aan   Marie.*
         John   gave-PAST-3sg.   the   flowers   not   SELF   to   Mary
         'John did not give the flowers to Mary himself'.

c. *Jan   gaf*   *Marie   de   bloemen   niet   zelf.*
John gave-PAST-3sg.   Mary   the   flowers   not   SELF
'John did not give the flowers to Mary himself'.

In order to account for the entailment patterns, we analyze their relation to light verbs, incorporated in the lexical conceptual structure.

5   Light verbs and argument structure

Entailments are restricted by morphological and syntactic properties of verbs as complements of light verbs (ter Meulen 2000), contributing to a better understanding of lexical concepts and the computational system. In English, both causal light verbs, *'make'* and *'let'*, take infinitival complements with case marked reflexives (ECM).

(19) a. *John   let   himself   give   the   flowers   to   Mary.*
     b. *John   made   himself   give   the   flowers   to   Mary.*

In (19a), the causer thematic role assigned to the subject is weak [+c], as John did not impede his own actions, but simply allowed them. In (19b), the causer subject is strong [+C] in that John made himself do it, excluding anyone else from taking part in it. In the light verb constructions, the reflexives are arguments. Exceptional Case Marking, thus, marks the reflexive as accusative in English, before it moves to a peripheral Focus projection.

In the incorporated verbs in (20), the focus reflexives are non-arguments.

(20) a. *John   gave   the   flowers   to   Mary   himself.*
     b. *John   built   a   house   himself.*

Interestingly, Dutch differs from English in that it requires a reflexive infinitival complement with *'let'*, but not with *'make'*. Both strong and weak readings are acceptable in (21a), where it is either John himself who handed the flowers to Mary or he arranged for someone else to be included in the action.

(21)   a. *Jan   heeft   Marie   de   bloemen   gegeven*
           John   has-PAST-3sg. Mary   the   flowers   given
           'John has given the flowers to Mary'.

In a semantic representation the weak reading is entailed by the strong one and not vice versa. Accordingly, the simple truth-conditional content of (21a) is specified as (22).

(22)   ∃e ∃x [give (e, j, x, m) & flowers (x) & plan (e, j) & do (e, j)]

In (22), the [+m] thematic role of 'intentional involvement' or planning is represented as *plan (e, j),* an intensional relation between the event and John, as well as the weak executive agent role assigned by [+c] as doing it, i.e. *do (e, j).* The representation in (22) leaves it entirely open whether anyone else besides John was involved in this event of giving flowers to Mary.

In (21b), the pronoun *zelf* signals as focus information that only John and no one else, has given the flowers to Mary. This is the strong causal reading thematically represented as [+m, +C] feature specification.

(21)   b. *Jan   heeft   Marie   de   bloemen zelf gegeven*
            John   has-PAST-3sg. Mary   the   flowers   self   given
            'John has given the flowers to Mary'.

The example in (21b) adds a uniqueness clause to (22) excluding anyone else from participating in the event of giving Mary flowers or doing any part of it as executive agent.[4] The semantic representation in (23) captures just this exclusive causal agent that constrains the [+C] thematic role, induced by the focus reflexive *zelf,* to only John.

(23) ∃e ∃x [give (e, j, x, m) & flowers (x) & plan (e, j) & do (e, j)] &
      ∀e' ∀y [(part-of(e', e) & give (e', y, x, m) & flowers (x) & do (e', y)) → j = y]

Turning to the light verb *'let',* it assigns a weak causal thematic role to the subject, realized in the Dutch (24ab), where the reflexive or any non-coreferential DP is an argument of the light verb that takes an infinitival complement. The weak causal light verb *'let'* cannot take a CP complement in Dutch.

(24)   a. *Jan maakte   dat   hij   de   bloemen   aan   Marie   gaf.*
            John made-PAST-3sg.   that he   the flowers   to   Mary   gave
            'John made himself give the flowers to Mary'.

        b. *Jan maakte   zichzelf   de   bloemen   aan   Marie   geven*
            John made-PAST-3sg.   SELF   the flowers   to   Mary   gave
            'John made himself give the flowers to Mary'.

In weak causal reading, it is argued that this is the syntactic structure underlying

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[4] The uniqueness clause of Russellian definite descriptions have a very similar semantic role in fixing the definite referent, currently understood in dynamic semantic as a prohibition to alter the assignment of a variable assignment function to the given variable, once it is fixed in a prior context.

the weak causal reading, after incorporation of the light verb into the main verb. As for the strong causal reading, it is argued to be the result of an underlying light verb structure involving *'make'*. However, *'maken'* in Dutch takes only a CP complement. It is, therefore, argued *zelf* comes from turning the bound pronoun in the subordinate clause to a non-argument reflexive within VP. This is why the latter bears no case, contrary to English.

(24) c. *Jan maakte   dat hij de bloemen aan Marie gaf.*
         John made-PAST-3sg. that he the flowers to Mary gave
         'John made himself give the flowers to Mary'.

      d.*Jan maakte   zichzelf de bloemen aan Marie geven.*
         John made-PAST-3sg. SELF the flowers to Mary gave
         'John made himself give the flowers to Mary'.

Accordingly, only the strong causal reading is realized through a pronoun that is co-referential with the subject. The ECM alternate of *'make'* is unacceptable in Dutch, as shown in (24d). What still remains to be understood is whether the incorporation of light verbs is reflected in instances of focused pronouns. For this we turn to Greek.

It is indeed the case that causality is encoded either in the syntax (*'make'*) or in the verbal morphology (causative morpheme (*/izo/*) in Greek. The latter reflects the incorporation of a light verb into the main verb. Hence, the two (non-analytic and periphrastic form) appear in complementary distribution:

(25) a. *Fovizo*
         frighten-cause-1sg.
         'to scare someone'.

      b. **Kano   fovizi*
         make-1sg. frighten
         'to scare someone'.

In languages like English the causative morpheme is not represented on verbal morphology and the periphrastic and analytic forms involve a main verb with causal reading and a light verb in ECM structure.

(26) a. *John ran the horse over the hedge*
     b. *John made the horse run over the hedge.*

Evidence that the reflexive does not undergo movement in Greek is derived from the absence of any underlying ECM structure, which is available only in English. Apparently, Greek does not allow for a light verb, but uses instead the verb *'persuade'*:

(27) b. O *Yanis* **ekane /epise* *ton* *eafto* *tu* */*ton idhio na…*
     the-   Yanis-   had-   persuaded   the-   SELF-   his-   the-   SAME   to…
     NOM   NOM   3sg.   -3sg.   ACC   ACC   GEN   ACC   -ACC
     'Yanis made himself build… (lett. Y. persuaded himself to …VP..)'.

The reflexive occupies the object position (27), while the co-referent pronoun is unacceptable. One other option is possibly involving the verb *'have'* (28). However, it is the reading of the possessive rather than auxiliary that dominates the example.

(28)   a. *John*   *had*   *someone*   *build*   *a*   *house*   *(for*   *him).*

     b. O   *Yanis*   *ihe*   *kapion*   *na*   *tu*   *episkevazi*   *to*   *spiti.*
     the-   Yanis-   had-   someone   to   his-   repair-3sg.   the-ACC   house-
     NOM   NOM   3sg.   -ACC   GEN   ACC
     'John had someone repair the house for him'.

By connecting the interaction of focus and thematic information to the semantic issues of planning and causal interpretation, the contribution of the present analysis is intended to improve our understanding of the interface of syntax and semantics. Causality has been shown to be correlated directly to reflexivity at a sentential level, by analyzing focus reflexives in English, *zelf*-reflexives in Dutch and the co-referent pronoun in Greek.

	English		Dutch		Greek	
Accusative case (on pronoun)	let	+	no case		let	-
	make	+	no case		make	-
ECM (on pronoun)	let	+	let	+	let	-
	make	+	make	-	make	-

Table 1. This table captures the differences between the three languages.

The issue whether causality must be encoded thematically on verbal heads, as a

lexical characteristic of different V-roots, remains open (as, for example, in the Greek causative morpheme). According to Alexiadou and Anagnostopoulou (2008), Halle and Marantz (1993), verbal heads are primarily encoded in the syntax as verbal roots and causality is either a property of the Verbal roots, reflected on the arguments of the verbs, or it is a property of Prepositional Phrases, appearing as causal modifiers in the syntactic configuration, especially in the case of the Greek causative morpheme. CAUSE operators, as in Dowty (1972), or weak [+c]/strong [+C] cause functional heads require further assumptions to capture examples that lack negation, where two sets of entailments are attested, though less obvious, in the presence of focus reflexives, even without the negative operators.

6 Concluding remarks

Linguistic variability in reflexivization and causality of English, Dutch and Greek lead to the generalization that two readings are available across languages, the strong, exclusive and the weak causal interpretation of arguments, where focus reflexives induce the strong reading only. This account is supported by analyzing the effect of negation or downwards entailing contexts on entailments, separating the agent in the common ground or presupposition from the necessarily disjoint focus agent. Light verbs reveal the strong/weak parallel in the syntactic analysis, assuming that focus reflexives have undergone movement from an ECM configuration of a light verb to a Focus Phrase above the verbal domain. The distinction of weak and strong causer is hence licensed by an underlying syntactic configuration, peripheral to the core-structure of the verb-root itself. From a semantic perspective, the present analysis rejects the idea that CAUSE is a semantic operator, given the interaction of focus reflexives and thematic information. First of all, it is only with causer-agentive predicates that the focus reflexives appear, hence imposing a restriction concerning the lexical thematic information of the verb itself and secondly, the CAUSE operator cannot explain the different entailment effects with negation, as it does not provide the formal tools to distinguish between two kinds of causal relations. The distinction between weak and strong causer thematic role solves these issues, as strong causers must be licensed by non-argument focus reflexives. Apart from these linguistic considerations, the semantics of CAUSE operators require quantification over possible worlds, associated with many foundational problems of minimal variation and normalization that have never been adequately solved.

Languages vary on the basis of the underlying syntactic configurations with light verbs that give rise to focus reflexives. Accusative focus reflexives originate from their ECM equivalents in English. Verb-core focus reflexives are gender-, number- and case-free and their underlying distribution varies from ECM to CP in Dutch. Nominative focus reflexives display an adjunct-like behavior agreeing in their grammatical features with the DP they modify in Greek.

Entailments of focus structure and the presuppositions of clauses in information structure provide us with data of great interest for investigation of the interface of

syntax and semantics. The interaction of focus reflexives and causality has interesting implications for other phenomena, such as Prepositional Phrases, which display causal interpretations, as well as instances of adverbial modification; issues to be addressed in future research.

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