~~*Covert Conjunction and*~~ Anaphora

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1 Introduction

In a number of key configurations, a pronoun may be anaphoric to a singular indefinite DP even in the absence of an apparent c-command relation between the two.[1] Thus the indefinite may be embedded in a different conjunct (1), a different sentence (2-a), below negation in a different disjunct (2-b) or the restrictor of a quantificational DP that has the pronoun in its scope (2-c). Yet in each case, the interpretation of the pronoun can be easily understood to depend, in some sense or other, on that of the indefinite.

(1) John broke a vase and it was expensive.

(2) a. John has a sister. She works at MIT.

[1] Mandelkern (2022a) provides a recent overview from a perspective that's broadly compatible with the one taken in this paper. For an alternative perspective, see Hofmann (2025b) for an insightful recent discussion. For a classic treatment, Chapter 1 of Heim (1982) remains unmatched.

b. Either John doesn't have a suit or he will wear it.
c. Every student who had an umbrella brought it.

My goal in this paper is to explore a theory that aims to reduce the cases in (2) to the fundamental case of (1).

One way or the other, any theory of anaphora ought to have resources to explain why (1) can be read to mean something like (3-b), rather than (3-a) which is suggested by its surface form.[2] Call this the Conjunction Puzzle (CP).

(3) a. $\exists \mathbf{x}(\textit{vase}(\mathbf{x}) \,\&\, \textit{broke}(\mathbf{John}, \mathbf{x})) \,\&\, \textit{expensive}(\mathbf{x})$
b. $\exists \mathbf{x}((\textit{vase}(\mathbf{x}) \,\&\, \textit{broke}(\mathbf{John}, \mathbf{x})) \,\&\, \textit{expensive}(\mathbf{x}))$

The starting point of this paper is the observation that any theory that's equipped with a robust solution to CP can assign an interpretation to each sentence in (4) that's identical to the target interpretation of the corresponding sentence in (2), and it can do so without departing from independently motivated assumptions about the analysis of discourse sequencing, "*every*", "*or*" or "*not*".

(4) a. John broke a vase. John broke a vase and it was expensive.
b. Either John doesn't have a suit or John has a suit and he will wear it.
c. Every student who had an umbrella had an umbrella and brought it.

Furthermore, the analysis of the sentences in (4) will trivially carry over to the corresponding sentences in (2) if we allow ourselves to think that under certain conditions only the right conjunct of a given conjunctive sentence may be overtly realized. The idea is that the underlying structure of the sentences in (2), on their target interpretations, is essentially identical to the underlying structure of the corresponding sentences in (4). What sets the two groups apart is whether the conjunctive structure is pronounced as a whole (4) or only in part (2).

The goal, then, is to explore a theory of singular anaphora that's built from two ingredients, a solution to CP and a mechanism, call it "covert conjunction", that effectively reduces the cases in (2) to the basic of conjunction. I will now briefly sketch each of these components, leaving many blanks to be filled in the rest of the paper.

The solution to CP that I will work out in this paper is inspired by an approach to the semantics of indefinite statements that's proposed by Rothschild (2017) and further elaborated by Heim (2024). The core intuition is to analyze "*John broke* $a^{\mathbf{i}}$ *vase*" in such a way that the truth of this sentence guarantees that the index $\mathbf{i}$ is valued by the relevant assignment and therefore "$it_{\mathbf{i}}$ *was expensive*" is guaranteed to be defined. With that in place, a covert existential-closure operator $\exists$ is attached to the conjunction as a whole to remove assignment-dependency. Abstracting away from the details, the sentence in (1) will be roughly analyzed as follows.

(5) $\exists_{\mathbf{i}}$ [*John broke* $a^{\mathbf{i}}$ *vase* **and** $it_{\mathbf{i}}$ *was expensive*]

This treatment of CP is then extended to other cases in (2) via covert conjunction, an idea that is

[2] Singular indefinites generally trigger uniqueness or "anti-multiplicity" implicatures (see Doron 2025 section 1.5 for a recent discussion and proposal). Thus "*John broke a vase*" is easily interpreted to mean that there is a unique vase that John broke. The ability of the indefinite to license anaphora does not appear to depend on this uniqueness implicature. For example, the speaker of (i-a) wins the bet regardless of how many vases John broke, so long as at least one of those vases happened to be expensive. Similarly, the speaker of (i-b) is saying that John should be punished if he broke an expensive vase quite regardless of whether he broke other vases too or not.

(i) a. I bet John broke a^{i} vase and it_{i} was expensive.
b. If John broke a^{i} vase and it_{i} was expensive, he should be punished.

also borrowed from Rothschild (2017) but is given a free(r) reign here.[3] Intuitively, the idea is that if the left conjunct is *salient* and *locally trivial* (in the sense of Schlenker 2009) then only the right conjunct may be phonologically realized. More precisely,

(6) **Covert Conjunction Principle (CCP).**
Any occurrence **o** of a constituent of the form "$\exists_i[\,\alpha$ **and** $\beta\,]$" in LF φ asserted in the situation of utterance @ may be phonological reduced to β if (i) the expression "$\exists_i\alpha$" is salient in @ and (ii) the local context of **o** in φ relative to background assumptions in @ entails that "$\exists_i\alpha$" is true.

For example, the sentences in (2) will be roughly analyzed as (7) where blue indicates the material that's ignored at PF. In (7-c), for example, the salience condition is met essentially because the blue conjunct has an exact copy in the restrictor and the triviality condition is met essentially because the determiner "*every*" is conservative. Similar remarks apply to the other two cases.

(7) a. $\exists_i$ [*John broke a*^{i} *vase*] $\exists_i$ [*John broke a*^{i} *vase* **and** *it*$_i$ *was expensive*]
b. [**not** $\exists_i$ *John have a*^{i} *suit*] **or** $\exists_i$ [*John has a*^{i} *suit* **and** *he will wear it*$_i$]
c. [**every** *student* ~~who~~ $\lambda j.\exists_i$ t_j *had an*^{i} *umbrella*] $\lambda j.\exists_i$ [t_j *had an*^{i} *umbrella* **and** t_j *brought it*$_i$]

To the extent that this approach to anaphora is not entirely off the rails, it has *prima facie* desirable consequences on both empirical and theoretical sides. On the empirical side, the theory goes well beyond the putative constraints that are often taken to govern anaphoric dependencies and offers a uniform treatment of many edge cases that require non-trivial enrichment in e.g. the dynamic framework (see e.g. Elliott 2020; Hofmann 2025a; Charlow 2026 for a sample). The empirical coverage of the proposal beyond the basic case of conjunction can be characterized using the following descriptive statement which follows more or less transparently from CCP.[4]

(8) **Existence Entailment Generalization (EEG).**
If φ is an indefinite statement and α is an anaphoric definite, in a text that contains both φ and α, anaphoric dependency between φ and α is possible if and only if there is a sentential constituent β that contains α such that the local context of β entails that φ is true.

On the theoretical side, the proposal avoids the sweeping, architectural innovations that theories of anaphora are generally committed to and which often raise questions of explanatory adequacy. Indeed the proposal is couched in the familiar framework of Heim & Kratzer (1998) coupled with entirely standard assumptions about the lexical entries of logical operators and pragmatics of information exchange. Beyond CCP, there will be no grammatical innovation except (i) a mechanism of indexation that applies to definite and indefinite DPs equally and (ii) a mechanism of existential-closure which, as we will see, requires no *sui generis* constraints on the positions in which it may occur or the indices which it may bind. Beyond the grammar, the only pragmatic innovation will be the Principle of Novelty which is intended to govern the use of indexed indefinites.

In the next section, I will lay out the semantic and pragmatic preliminaries as well as the treatment of definite descriptions. In section 3, I turn to the treatment of the conjunction puzzle, namely the treatment of indefinite DPs, the mechanisms of indexation and existential-closure

[3] In Rothschild's treatment, covert conjunction is only used for sentence-internal purposes and cross-sentential anaphora is dealt with by the pragmatics. See section 5 for a comparison between the proposals. See also Keshet (2018) and Keshet & Abney (2024) for an idea similar to covert conjunction implemented in the dynamic framework.

[4] EEG is essentially due to Chatain (2024) with a few adjustments. Similar generalizations can be found in e.g. Keshet & Abney (2024) and Hofmann (2025a).

as well as the Novelty Condition. In section 4, I introduce covert conjunction and discuss the basic predictions. In section 5, I will compare my proposal to its immediate predecessor, namely Rothschild (2017). In section 6, I will discuss several predictions of the theory that go under the rubric of EEG. Section 7 concludes with a discussion of a loose end.

A preliminary remark is in order right at the outset. Anaphora often exhibits an "ambiguity" between the so-called ∃-readings and ∀-readings (see e.g. Kanazawa 1994; Champollion et al. 2019; Chatain et al. 2024). The sentences in (2) above were cherry-picked to avoid the latter but sentences that exhibit the ∀-reading are all too easy to find.

(9) a. Every man who has a sister adores her.
⇝ every man who has a sister adores all of his sisters
b. Either John doesn't have a donkey or he beats it.
⇝ if John has a donkey, he beats all of his donkeys

Following the recent literature (e.g. Rothschild 2017; Elliott 2020; Mandelkern 2022b; Spector 2024a), I will focus primarily on the ∃-readings. The hope, of course, is that the proposal can be enriched with an account of the ∀-readings without too much violence. Obviously, this is no more than a hope; for all I know, an adequate treatment of the ∀-readings might undermine the core contribution of this paper. For a reason to be optimistic, see section 5 for a discussion of how the ∃/∀-ambiguity is predicted by the theory when negation is involved.

2 The background

2.1 The pragmatics

Each utterance is made in a "situation of utterance", @. For my purposes here, I think of the situation of utterance as determining two objects: (i) an assignment function $g_@$ which represents possibilities for deictic reference and (ii) a set of worlds $c_@$ which represents the conversational record, i.e. what is collectively taken for granted about the world by the interlocutors.[5]

An utterance is either appropriate or inappropriate (10). If it is appropriate, it will express a unique proposition (11). This proposition is either felicitous or infelicitous (12). If it is felicitous, it will be either accepted or rejected by the interlocutors on the basis their prior beliefs and commitments. If it is accepted, the interlocutors will adjust their commitments by incorporating the asserted proposition into their beliefs and this adjustment will be automatically reflected in the conversational record (13).

(10) **Appropriateness Condition.**[6]
An utterance of φ in the situation of utterance @ is appropriate only if every index that has a syntactically free occurrence in φ is in the domain of $g_@$.

(11) **Content Principle.**
If an utterance **u** of φ is appropriate in @ then **u** is judged as true in w if $[\![\varphi]\!]^{w,g_@} = 1$, false in w if $[\![\varphi]\!]^{w,g_@} = 0$ and undefined in w if $[\![\varphi]\!]^{w,g_@} = \#$. In other words, the proposition that **u** expresses in @ is $\|\mathbf{u}\|_@ = \lambda w.\, [\![\varphi]\!]^{w,g_@}$.

[5] More realistically @ should also give us a sense of who the speaker is and so on.

[6] I suspect the Appropriateness Conditions can ultimately be reduced to felicity conditions. In most cases where this condition is violated, the utterance in question either violates either the Bridge Principle or the Informativity Principle, or is otherwise deficient (e.g. for redundancy reasons). In the text however I will leave this aside if only for the sake of expository clarity.

(12) **(Some) Felicity Conditions.**
If an utterance $\mathbf{u}$ of φ is appropriate in @, then $\mathbf{u}$ is felicitous in @ only if $c_{@}$ guarantees that $\|\mathbf{u}\|_{@}$ is either true or false (the Bridge Principle) but $c_{@}$ does not settle whether $\|\mathbf{u}\|_{@}$ is true or false (the Informativity Principle).[7]

(13) **Update Principle.**
If an utterance $\mathbf{u}$ is appropriate and felicitous in @ and it is accepted by the interlocutors, it results in a new situation of utterance @′ which differs from @ at least in that $c_{@'} \subseteq c_{@} + \mathbf{u} = \{w \in c_{@} : \|\mathbf{u}\|_{@}(w) = 1\}$.[8]

Broadly speaking, this picture is fundamentally due to Stalnaker's influential work (e.g. Stalnaker 1972, 1973, 1974). The felicity conditions enumerated in (12) are simply the most important ones in their class. Another felicity condition, namely the principle of anti-redundancy, will be alluded to below but will not be made fully explicit. The only modification of this picture that I will introduce is a new felicity condition, i.e. the Novelty Principle, that governs the use of indefinites.

2.2 The semantics, and the treatment of definites

I will adopt Heim & Kratzer's (1998) framework and their rules of interpretation.[9] The interpretation function is a partial function from expressions to their extensions relative to a world and an assignment. Assignments are partial functions from the set of indices $\mathbb{N}$ to the domain of individuals $\mathbb{D}_{\mathbf{e}}$. I will often write $g_{\mathbf{i}}$ instead of $g(\mathbf{i})$ to avoid clutter. "g values $\mathbf{i}$" means "$\mathbf{i}$ is in g's domain". For any index $\mathbf{i}$ and individual $\mathbf{x}$, by $g_{\mathbf{i}\mapsto\mathbf{x}}$ I mean the assignment that's identical to g except that it maps $\mathbf{i}$ to $\mathbf{x}$. By $g_{\mathbf{i}\mapsto\#}$ I mean the assignment that's identical to g except that it fails to value $\mathbf{i}$.

One drawback of partial semantics is that it does not allow for a truth-functional analysis of the connectives to be combined with non-trivial assumptions about how they interact with truth-value gaps. For example, the "middle kleene" analysis of conjunction can only be implemented either syncategorematically (14) or by having "*and*" operate on propositions instead of truth-values (15).[10]

[7] That is, $\forall w \in c_{@} : \varphi \in \mathbf{dom}([\![\cdot]\!]^{w,g@})$ (Bridge Principle) and, $\exists w \in c_{@} : [\![\varphi]\!]^{w,g@} = 1$ and $\exists w \in c_{@} : [\![\varphi]\!]^{w,g@} = 0$ (Informativity Principle).

[8] Note that $c_{@'}$ is never quite identical to $c_{@} + \mathbf{u}$. For one thing, $c_{@'}$ entails among other things that the speaker made the utterance $\mathbf{u}$. But since @ is the situation *in* which that utterance was made, neither $c_{@}$ nor $c_{@} + \mathbf{u}$ entail that such-and-such a speech act was made. Note furthermore that @′ may differ from @ in other ways as well; e.g. if the utterance $\mathbf{u}$ is accompanied by a (successful) act of demonstration (e.g. a pointing gesture) then $g_{@'}$ will also be different from $g_{@}$ due to the introduction of a new object that may now be deictically referred to.

[9] These are,

(i) a. **Function Application Rule.** If α is a branching node and $\{\beta, \gamma\}$ is the set of its daughters then for any world w and assignment g, $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\beta \in \mathbf{dom}([\![\cdot]\!]^{w,g})$, $\gamma \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ and $[\![\gamma]\!]^{w,g} \in \mathbf{dom}([\![\beta]\!]^{w,g})$. If $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\alpha]\!]^{w,g} = [\![\beta]\!]^{w,g}([\![\gamma]\!]^{w,g})$.

b. **Predicate Modification Rule.** If α is a branching node and $\{\beta, \gamma\}$ is the set of its daughters then for any world w and assignment g, $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\beta \in \mathbf{dom}([\![\cdot]\!]^{w,g})$, $\gamma \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ and β and γ are both of type $\mathbf{et}$. If $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\alpha]\!]^{w,g} = \lambda\mathbf{x} : \mathbf{x} \in \mathbf{dom}([\![\beta]\!]^{w,g}) \cap \mathbf{dom}([\![\gamma]\!]^{w,g})$. $[\![\beta]\!]^{w,g}(\mathbf{x})$ & $[\![\gamma]\!]^{w,g}(\mathbf{x})$.

c. **Predicate Abstraction Rule.** If α is a branching node and $\{\beta, \boldsymbol{\lambda}_{\mathbf{i}}\}$, for some index $\mathbf{i}$ of type $\mathbf{x}$, is the set of its daughters then for any world w and assignment g, $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ and $[\![\alpha]\!]^{w,g} = \lambda\mathbf{x} \in \mathbb{D}_{\mathbf{x}} : \beta \in \mathbf{dom}([\![\cdot]\!]^{w,g_{\mathbf{i}\mapsto\mathbf{x}}})$. $[\![\beta]\!]^{w,g_{\mathbf{i}\mapsto\mathbf{x}}}$.

[10] The latter of course requires a rule of Intensional Function Application.

and	1	0	#
1	1	0	#
0	0	0	0
#	#	#	#

(14) If α and β are of type $\mathtt{t}$ then "α **and** β"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\alpha \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ and if $[\![\alpha]\!]^{w,g}$ is true then $\beta \in \mathbf{dom}([\![\cdot]\!]^{w,g})$; if "$\alpha$ **and** β"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\alpha \textbf{ and } \beta]\!]^{w,g}$ is true iff $[\![\alpha]\!]^{w,g}$ and $[\![\beta]\!]^{w,g}$ are both true.

(15) $[\![\textbf{and}]\!]^w =$
$\lambda \mathbf{right}_{\mathtt{st}}, \mathbf{left}_{\mathtt{st}}$:
$w \in \mathbf{dom}(\mathbf{left}) \,\&\, \mathbf{left}(w) \rightarrow w \in \mathbf{dom}(\mathbf{right}).$
$\mathbf{left}(w) \,\&\, \mathbf{right}(w)$

I will not take a position here on the exact treatment of the connectives beyond their abstract truth-tables. The truth-table for disjunction that I will use is often referred to as "strong kleene" disjunction.[11]

or	1	0	#
1	1	1	1
0	1	0	#
#	1	#	#

The treatment of pronouns is standard. ϕ-features will be entirely neglected as they raise no question of substance for my purposes here.

(16) $\mathbf{pro_i} \in \mathbf{dom}([\![\cdot]\!]^g)$ only if $\mathbf{i} \in \mathbf{dom}(g)$. If $\mathbf{pro_i} \in \mathbf{dom}([\![\cdot]\!]^g)$, $[\![\mathbf{pro_i}]\!]^g = g_{\mathbf{i}}$.

And therefore we have,

(17) "$\mathbf{it_7}$ *was expensive*"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\mathbf{7} \in \mathbf{dom}(g)$; if "$\mathbf{it_7}$ *was expensive*"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\mathbf{it_7} \textit{ was expensive}]\!]^{w,g}$ is true iff $g_{\mathbf{7}}$ was expensive in w.

which given obvious conventions can also be written as,

(18) $$[\![\mathbf{it_7} \textit{ was expensive}]\!]^{w,g} = \begin{cases} 1 & \text{if } \mathbf{7} \in \mathbf{dom}(g) \,\&\, g_{\mathbf{7}} \text{ is expensive in } w \\ 0 & \text{if } \mathbf{7} \in \mathbf{dom}(g) \,\&\, g_{\mathbf{7}} \text{ is not expensive in } w \\ \# & \text{if } \mathbf{7} \notin \mathbf{dom}(g) \end{cases}$$

And so on,

(19) $$[\![\mathbf{he_7} \textit{ broke } \mathbf{it_{13}}]\!]^{w,g} = \begin{cases} 1 & \text{if } \mathbf{7}, \mathbf{13} \in \mathbf{dom}(g) \,\&\, g_{\mathbf{7}} \text{ broke } g_{\mathbf{13}} \text{ in } w \\ 0 & \text{if } \mathbf{7}, \mathbf{13} \in \mathbf{dom}(g) \,\&\, g_{\mathbf{7}} \text{ did not break } g_{\mathbf{13}} \text{ in } w \\ \# & \text{if } \mathbf{7} \notin \mathbf{dom}(g) \text{ or } \mathbf{13} \notin \mathbf{dom}(g) \end{cases}$$

Let us now consider the treatment of definite descriptions. Indices on determiners (e.g. **i** below), are assumed to be of type $\mathtt{et}$ and represent the determiner's covert domain.

(20) "$\mathbf{def_i}$"$\in$ $\mathbf{dom}([\![\cdot]\!]^g)$ iff $\mathbf{i} \in \mathbf{dom}(g)$; if "$\mathbf{def_i}$"$\in$ $\mathbf{dom}([\![\cdot]\!]^g)$ then
$[\![\mathbf{def_i}]\!]^g = \boldsymbol{\lambda}\mathbf{res}_{\mathtt{et}} : \exists!\mathbf{x} \in g_{\mathbf{i}} : \mathbf{res}(\mathbf{x}).\, \iota\mathbf{x} \in g_{\mathbf{i}} : \mathbf{res}(\mathbf{x})$

[11] The exact treatment of the connectives via-a-vis presupposition projection belongs to the theory of presupposition projection, of course. In this paper, I am simply adopting what appear to be the most reasonable assumptions. See Spector (2024b) for a detailed discussion.

There are reasons to believe that definite descriptions are generally ambiguous between two interpretations, an anaphoric interpretation with no uniqueness presupposition (sometimes called the "strong definite") and a non-anaphoric reading with a uniqueness presupposition (sometimes called the "weak definite"). The standard entry given above is of course only compatible with the latter (though see fn. 15). Some evidence for this ambiguity comes from languages in which the difference has been argued to correlate with the morphology (Schwarz 2009; see Jenks & Konate 2022 for review and references). There is also indirect evidence for this ambiguity in English. Consider the following sentences.

(21) At the party, John made friends with a couple.
   a. ??He liked her more than her spouse.
   b. He liked the woman more than her spouse.
      $\rightsquigarrow$ *the woman's spouse is not a woman*

The markedness of the first sentence is descriptively unsurprising. In the absence of an antecedent, the pronoun "*her*" can only be used deictically but since no suitable referent is salient in this case by assumption, (21-a) is perceived as marked.[12] The fact that (21-b) is perceived as acceptable is also expected given (20). According to the latter, "*the woman*" triggers the presupposition that there must be a unique woman that's relevant in the context. In (21-b), the relevant individuals are presumably the couple that John made friends with. If so then the sentence is expected to be felicitous *so long as* the interlocutors are willing to accommodate that the couple in question does not consist of two women (since that would violate the uniqueness). This prediction appears to be borne out; (21-b) strongly implies that the couple John made friends with includes only one woman.

But now consider the following sentences.

(22) At the party, John made friends with a woman and her spouse.
   a. He liked her more than her spouse.
   b. He liked the woman more than her spouse.
      $\not\rightsquigarrow$ *the woman's spouse is not a woman*

This time, the acceptability of (22-a) is descriptively expected due to the presence of an indefinite antecedent "*a woman*". On the face of it, one might think that the acceptability of (22-b) is rather unremarkable; after all, here too we can domain-restrict "*the woman*" to the set of two individuals that John made friends with. But there is an interpretive difference between (22-b) and (21-b). Specifically, both (22-a) and (22-b), in contrast to (21-b) above, can easily be interpreted with the understanding that John made friends with a couple that consists of two women. This contrast can be made explicit as follows.[13]

(23) At the party, John made friends with a lesbian couple.
   a. #He likes her more than her spouse.
   b. #He liked the woman more than her spouse.

(24) At the party, John made friends with a woman and her wife.
   a. He liked her more than her wife (/spouse/partner).
   b. He liked the woman more than her wife (/spouse/partner).

[12] Many speakers (myself included) find sentences like (21-a) marked but not entirely unacceptable. Interestingly, it appears that those who do find (21-a) acceptable generally do so with the same inference as (21-b), namely that the woman is married to someone who's not a woman.

[13] Thanks to P. Elliott for pointing this out.

Evidently, in the presence of a suitable antecedent "*the woman*" effectively acts like a pronoun and does not carry a uniqueness presupposition. In the absence of an antecedent, however, "*the woman*" may only be used with a uniqueness presupposition and may only be used felicitously if this presupposition is met (or is easy to accommodate). This is the substance of what Mandelkern & Rothschild (2020) call the "Definiteness Projection Generalization" and I refer the reader to their paper for further discussion and other examples.

In the current framework, we can reconcile the observations made above with the standard entry in (20) by introducing a mechanism of indexation.

(25) For any index $\mathbf{i}$ and assignment g, "$\mathbf{Ix_i}$"$\in \mathbf{dom}([\![\cdot]\!]^g)$ and, $[\![\,\mathbf{Ix_i}\,]\!]^g = \boldsymbol{\lambda}\mathbf{x}.\,\mathbf{i} \in \mathbf{dom}(g)\,\&\,\mathbf{x} = g_{\mathbf{i}}$.

According to this analysis, e.g. "$\mathbf{Ix_7}$" always denotes a total predicate. We can therefore think of its denotation as a set. If the given assignment g does not value the index **7**, then "$\mathbf{Ix_7}$" denotes the empty set. Otherwise, "$\mathbf{Ix_7}$" denotes $\{g_7\}$. We can now consider two representations for "*the woman*". The idea is that (26) represents the weak, uniqueness-triggering reading of the definite and (27) represents the strong, pronoun-like reading of the definite.[14]

(26) "$\mathbf{def_7}$ *woman*"$\in \mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\mathbf{7} \in \mathbf{dom}(g)$ and there is a unique member of g_7 that's a woman in w; if "$\mathbf{def_7}$ *woman*"$\in \mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\,\mathbf{def_7}\ \textit{woman}\,]\!]^{w,g}$ is the unique member of g_7 that's a woman in w.

(27) "$\mathbf{def_7}$ *woman* $\mathbf{Ix_{13}}$"$\in \mathbf{dom}([\![\cdot]\!]^{w,g})$ iff $\mathbf{7}, \mathbf{13} \in \mathbf{dom}(g)$, $g_{\mathbf{13}} \in g_7$ and $g_{\mathbf{13}}$ is a woman in w; if "$\mathbf{def_7}$ *woman* $\mathbf{Ix_{13}}$"$\in \mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\,\mathbf{def_7}\ \textit{woman}\ \mathbf{Ix_{13}}\,]\!]^{w,g} = g_{\mathbf{13}}$.

3 The conjunction puzzle

3.1 (Indexed) Indefinites

The core intuition behind the treatment of indefinite DPs that I will elaborate on below is due to Rothschild (2017) and is articulated by Heim (2024) as follows.

> The essential job of an indefinite antecedent is to support the presupposition of the subsequent anaphoric definite. Just like an assertion of *it's raining* "supports" — i.e., entails — the semantic presupposition of a subsequent sentence like *John knows that it's raining*, an assertion of *A cat arrived* ought to support (entail) the semantic presupposition of *It purred*.

It follows that if an utterance of "*it purred*", wherein the pronoun carries the index **i**, presupposes that (that is, is undefined unless) **i** is in the domain of the relevant assignment g then an utterance of "*a cat arrived*" should assert that (that is, be false unless) the same index **i** is in the domain of g. Rothschild and Heim build this desideratum into the meaning of the indefinite article. On Heim's account, for instance, the indefinite is indexed by the grammar and an indefinite statement is automatically false if the indefinite's index is not valued.

Here I'd like to explore a different implementation. Specifically, I'd like to propose that indefinite DPs, like definite descriptions as argued in the previous section, are in principle ambiguous between a plain representation and an indexed representation. Thus a sentence like

[14] As indicated, there is a rich literature on weak vs strong definites from a cross-linguistic and morphological perspective. The analysis I give in (27) is not one that's necessarily favored in this literature. In fact, so long as a parallel mechanism of indexation is in principle available for indefinites, the exact details do not much matter for my purposes here. See also fn. 15.

"*John broke a vase*" is ambiguous along the following lines (from this point on, domain restriction is suppressed for simplicity). The indefinite article itself is analyzed as usual, (29).

(28) a. [**Indef** *vase*] $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$
b. [**Indef** *vase* $\mathbf{Ix_{13}}$] $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$

(29) For any world w and assignment g, $\mathbf{indef} \in \mathbf{dom}([\![\cdot]\!]^{w,g})$ and
$[\![\mathbf{indef}]\!]^{w,g} = \lambda \mathbf{res_{et}}, \mathbf{pred_{et}}. \exists \mathbf{x} : \mathbf{res}(\mathbf{x}) \,\&\, \mathbf{pred}(\mathbf{x})$.

Given (29) and the semantics of the "$\mathbf{Ix_i}$" morpheme given above, we have the following meanings for (28-a) and (28-b) where I've adopted the obvious conventions in the meta-language for readability.[15]

(30) $[\![$ **Indef** *vase* $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$ $]\!]^{w,g}$
$= 1$ if there is a vase that John broke in w
$= 0$ otherwise
$=$ # never

(31) $[\![$ **Indef** *vase* $\mathbf{Ix_{13}}$ $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$ $]\!]^{w,g}$
$= 1$ if $\mathbf{13} \in \mathbf{dom}(g)$ and $g_{\mathbf{13}}$ is a vase that John broke in w
$= 0$ otherwise
$=$ # never

If g doesn't value the index **13** then "$\mathbf{Ix_{13}}$" denotes the empty set. If so then the restrictor of the indefinite in (28-b) is also the empty set and, given (29), (28-b) is false relative to (w, g) regardless of w. It is perhaps helpful to bear in mind that on the current analysis indexed definites and indexed indefinites are predicted to yield very similar interpretations at the clausal level. Thus the only difference in meaning between the two LFs below is that, if the assignment doesn't value the index **13**, (32-a) is false while (32-b) is undefined. Otherwise, the two LFs are predicted to have the same truth-value.

(32) a. **Indef** *vase* $\mathbf{Ix_{13}}$ $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$
b. **def** *vase* $\mathbf{Ix_{13}}$ $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$

The analysis for the anaphoric reading of "*a vase broke and it was expensive*", given the middle kleene analysis of conjunction from the previous section, is as follows.

(33) $[\![$ (**Indef** *vase* $\mathbf{Ix_{13}}$ $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$) **and** (**it**$_{\mathbf{13}}$ *was expensive*) $]\!]^{w,g}$
$= 1$ if $\mathbf{13} \in \mathbf{dom}(g)$ and $g_{\mathbf{13}}$ is an expensive vase John broke in w
$= 0$ otherwise
$=$ # never

The sentence as a whole is never undefined even though the right conjunct may be. This is the sense in which the presupposition of the pronoun is "supported" by the indefinite.

[15] The reader will have noticed that my treatment of indexed indefinites bears a strong resemblance to Schwarzschild's (2002) "singleton indefinites". Indeed, although I located the index in a separate morpheme "**Ix**" in the restrictor, it is quite consistent with my proposal to think of indexation as a side-effect of domain restriction. I do not pursue this option here for expository purposes only. The obvious question to ask is if the theory of anaphoric indefinites developed in this paper can be extended to "specific" or "long-distance" indefinites, this being the domain that Schwarzschild is interested in. I believe such an extension is possible but non-trivial. For reasons of space I will leave a detailed discussion to a future occasion.

3.2 Introducing ∃

Now, the analysis given in (33) above raises a problem given how our pragmatics is set up. We saw that syntactically free indices are pragmatically required to be valued by the context by the Appropriateness Condition in (10). The LF in (33) of course involves an index, i.e. **13**, that's syntactically unbound. We therefore predict that this LF can only be used if the situation of utterance provides a specific value for **13**.[16] But this doesn't sound right as anaphoric indefinites are not necessary "specific" (as argued by Heim 1982 Chapter 1, among others). On top of this, we have a "covariation problem". For example, consider the following sentence.

(34) Every boy watched a movie and liked it.

As things stand, the only LF we predict for this sentence that allows the indefinite to antecede the pronoun involves co-indexing the indefinite and the pronoun.

(35) **every** *boy* $\boldsymbol{\lambda_{72}}$ ((**indef** *movie* $\mathbf{Ix_{23}}$ $\boldsymbol{\lambda_4}$ $\mathbf{t_{72}}$ *watched* $\mathbf{t_4}$) **and** ($\mathbf{t_{72}}$ *liked* $\mathbf{it_{23}}$))

But indexing the indefinite in effect nullifies its quantificational force. The intuition that in this sentence movies should vary with boys, therefore, is unaccounted for. This LF is appropriate and true iff $g_@(\mathbf{23})$ is a movie that every boy watched and liked. Regardless of whether this reading is available in general or not, it is not the reading we're after.

To account for these problems I follow Rothschild (2017) and Heim (2024) in assuming that there is a covert, existential closure operator "∃" that can scope over conjunction, bind the index of the indefinite and, along the way, re-introduce the quantificational force of the indefinite which is lost to indexation. We thus have representations of the following sorts.

(36) a. $\boldsymbol{\exists_{13}}$ ((**Indef** *vase* $\mathbf{Ix_{13}}$ $\boldsymbol{\lambda_4}$ *John broke* $\mathbf{t_4}$) **and** ($\mathbf{it_{13}}$ *was expensive*))
b. **every** *boy* $\boldsymbol{\lambda_{72}}$ $\boldsymbol{\exists_{23}}$ ((**indef** *movie* $\mathbf{Ix_{23}}$ $\boldsymbol{\lambda_4}$ $\mathbf{t_{72}}$ *watched* $\mathbf{t_4}$) **and** ($\mathbf{t_{72}}$ *liked* $\mathbf{it_{23}}$))

Intuitively, the idea is that the first LF is always defined and relative to any (w, g) is true iff John broke at least one expensive vase in w. In other words, the denotation of this LF is no longer assignment-dependent. Similarly, the scope-predicate of "*every boy*" in the second LF should be true of a boy **x** iff there is some movie or other that **x** watched and liked in w.

What should the semantics of the ∃-operator be?[17] There are a few more or less straightforward desiderata that can guide us in answering this question. For example, we do not want the first sentence in each pair below to ever mean the same thing as the second.

(37) a. John is married to her.
b. John is married to a woman.

(38) a. John lives in Boston and he is married to her.
b. John lives is Boston and he is married to a woman.

(39) a. Either John is married to a woman or he is single, and she is Bill's sister.
b. Either John is married to Bill's sister, or he is single and Bill has one sister.

A naive semantics for the ∃-operator risks over-generating on each of these of counts. To avoid this, I'd like to capitalize on the key difference between indexed indefinites vs indexed

[16] Even if we ignore the Appropriateness Condition, (33) is predicted to express a trivial proposition by the Content Principle (11). If $\mathbf{13} \notin \mathbf{dom}(g_@)$ then (33) is false relative to $(w, g_@)$ for any w. See fn. 6.

[17] The semantics that I will now introduce for ∃ is technically different from both Rothschild's and Heim's but in most crucial respects it leads to the same predictions. The analysis that I favor in the text has the benefit of making calculations relatively straightforward. Of course, nothing prevents one from exploring alternative conceptions of how the ∃-operator should be defined, so long as the key desiderata are met.

definites pointed out above, namely that if their index is not valued one leads to falsity while the other to undefinedness. The idea is that a sentence of the form "$\exists_i \varphi$" is only defined relative to (w, g) if φ is defined *and false* relative to $(w, g_{i \mapsto \#})$.

(40) "$\exists_i \varphi$"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ only if $\varphi \in \mathbf{dom}([\![\cdot]\!]^{w,g_{i \mapsto \#}})$ and $[\![\varphi]\!]^{w,g_{i \mapsto \#}}$ is false (and ...). If "$\exists_i \varphi$"$\in$ $\mathbf{dom}([\![\cdot]\!]^{w,g})$ then $[\![\exists_i \varphi]\!]^{w,g}$ is true if there is some individual **x** such that $\varphi \in \mathbf{dom}([\![\cdot]\!]^{w,g_{i \mapsto x}})$ and $[\![\varphi]\!]^{w,g_{i \mapsto x}}$ is true and is false otherwise.

Please note that I have not specified how the $\exists$-operator projects presuppositions in general. That question faces obstacles that are both independently familiar (see e.g. Fox 2019 for detailed discussion of theoretical options) and orthogonal to my purposes. All that matters here is the specific condition that's made explicit in the rule above. To see how this rule avoids over-generation, consider the problematic LFs below for the three target sentences mentioned above.

(41) a. $\exists_7$ *John is married to* **her$_7$**
b. $\exists_7$ (*John lives in Boston* **and** *John is married to* **her$_7$**)
c. $\exists_{10}$ (((**indef** *woman* **Ix$_{10}$** λ_3 *John is married to* **t$_3$**) **or** *John is single*)
and (**she$_{10}$** *is a sister of Bill's*))

In a nutshell, (41-a) is never defined and (41-b) is never true. Both of these LFs therefore are ruled out by the combination of the Bridge Principle and the Informativity Principle. As to (41-c), while it is in principle informative, it violates the Bridge Principle except in contexts in which it is already established that the right disjunct "*John is single*" is false. While I will not commit to a specific theory of redundancy here, it is plausible that (41-c) should be ruled out by any reasonable candidate. Here are the details.

The first LF (41-a) is undefined relative to any (w, g) simply because "*John is married to* **her$_7$**" is bound to be undefined, rather than false, relative to $(w, g_{7 \mapsto \#})$. The second LF (41-b) is false in worlds in which John does not live in Boston. But suppose John lives in Boston in w and pick an arbitrary g. The left conjunct is obviously true relative to $(w, g_{7 \mapsto \#})$ while the right conjunct is undefined. Given the middle kleene semantics for conjunction, this means that the conjunction is undefined, rather than false, relative to $(w, g_{7 \mapsto \#})$. Therefore, (41-b) can't possibly be true in any world. As to (41-c), the problem here is that this LF presupposes that John is married! To see this, suppose John is single in w and for some assignment g take $g_{10 \mapsto \#}$. Relative to $(w, g_{10 \mapsto \#})$, the left conjunct is true on the assumption that the truth of one of the disjuncts is sufficient to guarantee that the whole disjunction is true. But of course the right conjunct is undefined in that case because the index **10** is not valued. Given middle kleene conjunction, it follows that the conjunction as a whole is undefined relative to $(w, g_{10 \mapsto \#})$. But this means that the LF as a whole can only be defined if John is married. Given the Bridge Principle, this means that this LF can only be used if it is common ground that John is married. But in any such context, this LF is conveys the same information as the LF below and is therefore plausibly ruled out for redundancy considerations.

(42) $\exists_{10}$ ((**indef** *woman* **Ix$_{10}$** λ_3 *John is married to* **t$_3$**) **and** (**she$_{10}$** *is a sister of Bill's*))

I should add that the analysis of the $\exists$-operator above does not lead to under-generation, at least not that I am aware of. For example, the LF in (43), repeated from above for "*John broke a vase and it was expensive*" is predicted to mean exactly what we want it to mean. This is of course simply because the presence of the indefinite in the left conjunct along with the middle kleene analysis of conjunction make sure that the whole conjunction is defined and false if the index **13** is not valued.

(43) $\exists_{13}$ ((**Indef** *vase* $\mathbf{Ix}_{13}$ λ_4 *John broke* $\mathbf{t}_4$) **and** (**it**$_{13}$ *was expensive*))

3.3 The Novelty Condition

The sentence in (44-a) cannot be read to mean the same thing as the sentence in (44-b).

(44) a. John bought a book and he gave a book to Mary.
b. John bought a book and he gave it to Mary.

For the analysis as developed so far, this is a problem since nothing in the system prevents the following schematic LF for (44-a). From now on I will often ignore the internal representation of embedded clauses to avoid clutter. So "(*in*)*def*" represents the plain (in)definite while "(*in*)*def*$_\mathbf{i}$" indicates the presence of "$\mathbf{Ix}_\mathbf{i}$" in the restrictor.

(45) $\exists_\mathbf{i}$ (*John bought* **indef**$_\mathbf{i}$ *book* **and** *John gave* **indef**$_\mathbf{i}$ *book to Mary*)

A very natural thought is that this LF is blocked by competition with the LF below. After all, (45) and (46) are predicted to be equally informative. Since "*def*" carries a stronger presupposition than "*indef*", it is reasonable to think that (45) should be unacceptable for the same reason that e.g. "*John broke all of his arms*" is: both are equivalent with an alternative that results from replacing one lexical item ("*indef*", "*all*") with another ("*def*", "*both*") that has a stronger presupposition (see e.g. Singh 2011).

(46) $\exists_\mathbf{i}$ (*John bought* **indef**$_\mathbf{i}$ *book* **and** *John gave* **def**$_\mathbf{i}$ *book to Mary*)

Unfortunately, as pointed out by Heim (2024), this approach is difficult to apply in the general case. To see the problem, please observe that (47-a) cannot be read to mean the same thing as (47-b) either.

(47) a. John bought a book and he gave a history book to Mary.
b. John bought a history book and he gave it to Mary.

The problem here is that the rightmost indefinite "*a history book*" in (47-a) has a richer descriptive content than the leftmost one "*a book*". Therefore, the putative competitor of (48-a), namely (48-b), triggers a presupposition that's by no means trivial[18] and, therefore, it is not clear why (48-a) is not acceptable simply because it's competitor (48-b) has a non-trivial presupposition that's not common ground, at least in an "out of the blue" context.

(48) a. $\exists_\mathbf{i}$ (*John bought* **indef**$_\mathbf{i}$ *book* **and** *John gave* **indef**$_\mathbf{i}$ *history book to Mary*)
b. $\exists_\mathbf{i}$ (*John bought* **indef**$_\mathbf{i}$ *book* **and** *John gave* **def**$_\mathbf{i}$ *history book to Mary*)

Perhaps it is premature to give up on the idea that novelty reduces to competition between the articles. However, I think there is an alternative approach that is at least worth exploring. Recall the core intuition we are pursuing is that "the essential job of an indefinite antecedent is to support the presupposition of the subsequent anaphoric definite" (Heim 2024). I'd like to

[18] Just what this presupposition is predicted to be depends on how $\exists$ deals with partiality, the very question that I left open above. As far as I can see no option makes the problem go away. If we assume $\exists$ projects presuppositions universally (e.g. Heim 1983), (47-b) is predicted to presuppose that if John bought a book then every book he bought was a history book. If we assume that $\exists$ projects presuppositions existentially (e.g. Beaver 2001), (47-b) is predicted to presuppose that if John bought a book then he bought at least one history book. If we assume instead that $\exists$ follows the "strong kleene" recipe for presupposition projection (e.g. Fox 2019), then (47-b) is predicted to have the characteristically weak (but still non-trivial!) presupposition that if John bought a book then either at least one book that he bought is a history book that he gave to Mary or all of the books that he bought are history books but he gave none of them to Mary.

propose that supporting the presupposition of an anaphoric definite is not only something that indexed indefinites can do but something that index definites *must* do. In other words, the idea is that an indefinite can only be indexed if the plain version of the indefinite leads to an infelicitous utterance.[19] For historical reasons, I will dub this principle the "Novelty Condition" but a more appropriate label might be "Index Economy".

(49) **Novelty Condition.**
If φ contains an occurrence **o** of an indexed indefinite DP α then an utterance of φ in @ is felicitous only if the result of deleting the index of the occurrence **o** of α is an LF that's not felicitous in @.

For example, (48-a) above is predicted to be unacceptable due to competition, not with (48-b) above, but with either (50-a) or (50-b) below.

(50) a. $\exists_{\mathbf{i}}$ (*John bought* **indef**$_{\mathbf{i}}$ *book* **and** *John gave* **indef** *history book to Mary*)
b. $\exists_{\mathbf{i}}$ (*John bought* **indef** *book* **and** *John gave* **indef**$_{\mathbf{i}}$ *history book to Mary*)

It is true that the LFs in (50) are weaker than the one in (48-a). But the point of the proposed Novelty Condition is that since these LFs are entirely felicitous, there is no motivation for an LF in which both indefinite DPs are indexed. In fact, the two LFs in (50) are themselves also ruled out by the Novelty Condition in favor of (51) in which neither indefinite is indexed (and the $\exists$-operator is vacuous).

(51) $\exists_{\mathbf{i}}$ (*John bought* **indef** *book* **and** *John gave* **indef** *history book to Mary*)

As sanity check, let us convince ourselves that the Novelty Condition does not apply if an indexed indefinite actually does antecede a pronoun. For example, consider (43) repeated below.

(52) a. $\exists_{\mathbf{13}}$ (*John broke* **indef**$_{\mathbf{13}}$ *vase* **and it**$_{\mathbf{13}}$ *was expensive*)
b. $\exists_{\mathbf{13}}$ (*John broke* **indef** *vase* **and it**$_{\mathbf{13}}$ *was expensive*)

Here the presence of "**Ix**$_{\mathbf{13}}$" is necessary to avoid infelicity. For note that (52-b) is predicted to presuppose that John did not break any vase (recall example (41-b) above) and therefore can never be true.

Finally, let us also consider a slightly more complicated example. Clearly, we do not want to allow (53-a) to have the LF in (54-a). The reading represented by this LF can be paraphrased as in (53-b) and is clearly not available for (53-a).

(53) a. Either John is married to a woman or he is single,
and a sister of Bill's is married.
b. Either John is married to a sister of Bill's,
or John is single and a sister of Bill's is married.

(54) a. $\exists_{\mathbf{10}}$ ((*John is married to* **indef**$_{\mathbf{10}}$ *woman*) **or** *John is single*)
and (**indef**$_{\mathbf{10}}$ *sister of Bill is married*))
b. $\exists_{\mathbf{10}}$ ((*John is married to* **indef** *woman*) **or** *John is single*)
and (**indef**$_{\mathbf{10}}$ *sister of Bill is married*))

The point, of course, is that (54-a) is ruled out by the Novelty Condition in favor of e.g. (54-b) (and ultimately in favor of an LF in which neither indefinite is indexed). The reader can verify

[19] Ideally, one would want to have a method of determining whether for each occurrence of an indexed indefinite there is a co-indexed, anaphoric definite whose presupposition is being supported by the indefinite. However, the statement given in the text seems to me to the job well enough.

that (54-b) is fully felicitous and therefore the indexation on the leftmost indefinite DP in (54-a) is unmotivated.

3.4 More on ∃

I would now like to briefly discuss the question of whether introducing the ∃-operator into the grammar leads to over-generation or not. For essentially the reasons that Heim (2024) discusses, I believe over-generation is not a major concern. Our semantics conspires with the pragmatic felicity conditions to weed out at least the most egregious cases of over-generation. I have been able to identify one configuration in which the system clearly does over-generate, but this involves a configurations that's independently known to be problematic for many theories of "long-distance" indefinites.

Consider the case of negated indefinites. We predict four LFs for a sentence like "*John didn't break a vase*" (assuming narrow scope for the DP).

(55) a. **not** (**indef** *vase* $\mathbf{Ix_1}$) $\boldsymbol{\lambda_3}$ *John broke* $\mathbf{t_3}$
b. **not** $\boldsymbol{\exists_1}$ (**indef** *vase* $\mathbf{Ix_1}$) $\boldsymbol{\lambda_3}$ *John broke* $\mathbf{t_3}$
c. $\boldsymbol{\exists_1}$ **not** (**indef** *vase* $\mathbf{Ix_1}$) $\boldsymbol{\lambda_3}$ *John broke* $\mathbf{t_3}$
d. **not** (**indef** *vase*) $\boldsymbol{\lambda_3}$ *John broke* $\mathbf{t_3}$

Of the four, only (55-d) is predicted to be acceptable. (55-a) is ruled out by the combination of the Appropriateness Condition and the Novelty Condition as we saw above. Essentially, either $g_@$ values the index **1** or it doesn't. If it doesn't, AC is violated (and, regardless, the LF will express a trivial proposition). If it does, NC is violated because the alternative LF in which the indefinite is not indexed, i.e. (55-d), is fully felicitous. Similarly, the LF in (55-b) is blocked by NC due to competition with (55-d). Finally, (55-c) is ruled out due to presupposition failure as the reader can verify given the semantics of ∃.

Parallel remarks apply to cases where an indefinite is embedded in the restrictor of e.g. "*every*". I leave it to the reader to verify that of the four LFs below, only (56-d) is predicted to be acceptable.

(56) Every farmer who owns a donkey is rich
a. **every**(*farmer* ~~*who*~~ $\boldsymbol{\lambda_5}$ (**indef** *donkey* $\mathbf{Ix_6}$) $\boldsymbol{\lambda_{23}}$ $\mathbf{t_5}$ *owns* $\mathbf{t_{23}}$) $\boldsymbol{\lambda_7}$ $\mathbf{t_7}$ *is rich*
b. **every**(*farmer* ~~*who*~~ $\boldsymbol{\lambda_5}$ $\boldsymbol{\exists_6}$ (**indef** *donkey* $\mathbf{Ix_6}$) $\boldsymbol{\lambda_{23}}$ $\mathbf{t_5}$ *owns* $\mathbf{t_{23}}$) $\boldsymbol{\lambda_7}$ $\mathbf{t_7}$ *is rich*
c. $\boldsymbol{\exists_6}$ **every**(*farmer* ~~*who*~~ $\boldsymbol{\lambda_5}$ (**indef** *donkey* $\mathbf{Ix_6}$) $\boldsymbol{\lambda_{23}}$ $\mathbf{t_5}$ *owns* $\mathbf{t_{23}}$) $\boldsymbol{\lambda_7}$ $\mathbf{t_7}$ *is rich*
d. **every**(*farmer* ~~*who*~~ $\boldsymbol{\lambda_5}$ (**indef** *donkey*) $\boldsymbol{\lambda_{23}}$ $\mathbf{t_5}$ *owns* $\mathbf{t_{23}}$) $\boldsymbol{\lambda_7}$ $\mathbf{t_7}$ *is rich*

The pattern we see with negation and the restrictor of "*every*" is in fact quite wide-spread; courtesy of our pragmatic filters, it is not easy to show that the system actually over-generates. But let's now consider one case in which it does. Consider the sentence "*every boy watched a movie he liked and enjoyed it*". The problematic LF for this sentence that the system does not weed out is the following.

(57) $\boldsymbol{\exists_{23}}$ **every** *boy* $\boldsymbol{\lambda_{72}}$ ((**indef** (*movie that* $\mathbf{he_{72}}$ *liked*) $\mathbf{Ix_{23}}$) $\boldsymbol{\lambda_4}$ $\mathbf{t_{72}}$ *watched* $\mathbf{t_4}$ **and** $\mathbf{t_{72}}$ *enjoyed* $\mathbf{it_{23}}$))

This LF is predicted to be true iff there is a movie **m** such that every boy liked, watched and enjoyed **m**. As far as I can see, this reading is simply not available for the target sentence. What we need to do is to force the ∃-operator to scope below the *every*-DP. The relevant generalization appears to be the following.

(58) **Generalization.** In a configuration of the form $\boldsymbol{\lambda}\mathbf{k}[\ \varphi \ldots$ (**indef** $(\ldots \mathbf{pro_k} \ \ldots)$ $\mathbf{Ix_i}$) $\ldots$],

the index **i** must be bound inside φ.

This generalization bears an obvious resemblance to what's sometimes called the Binding Roof Constraint (BRC) in the literature on long-distance indefinites (see Schwarz 2011 and references therein) and we might think of it as a consequence of the latter. Alternatively, one might say that something (an implicature?) forces co-variation when a quantified DP scopes over an indefinite. In other words, when a DP that quantifies over a certain set **S** scopes over an indefinite statement, an implicature kicks in to the effect that there are at least two members of **S** relative to which the indefinite statement is witnessed differently (see Magri 2009: pp. 41–50 for potentially relevant discussion). Evidence for an implicature of this kind comes from examples of the following sort.

(59) [*There were five movies that passengers could watch during the flight. Since the flight was long, passengers were likely to have watched multiple movies.*]
   a. Every passenger hated a movie that he watched during the flight,
   b. #which is surprising because the movie they all hated so much is an absolute classic!

Even if we assume that the indefinite scopes below the *every*-DP here, the resulting LF is still compatible with situations in which there is one movie that every passenger (watched and) hated. If so, then in principle one should be able to use the definite description "*the movie they all hated*" and rely on the interlocutor's good graces to accommodate that there was indeed one movie that every passenger hated. However, it appears that this is not possible. My intuitions as well as those that I have consulted, is that using the definite description is degraded in this case.

4 Covert Conjunction

The proposal as developed so far does not extend to anaphora beyond conjunction. In sentences below we only predict the deictic reading of the pronoun, i.e. the reading in which the situation of utterance is required to supply a value for the pronoun "*it*".

(60) a. John broke a vase. It was expensive.
   b. Every student who had an umbrella brought it.
   c. Either John doesn't own a suit or he will wear it.

As mentioned at the outset, the claim will be that, on their the target readings, the sentences above have the same underlying structure as the ones below. In other words, each pair represents two ways of pronouncing the same structure.

(61) a. John broke a vase. John broke a vase and it was expensive.
   b. Every student who had an umbrella had an umbrella and brought it.
   c. Either John doesn't own a suit or John owns a suit and he will wear it.

So we are considering LFs of the following sort.[20]

(62) $\exists_6$ [(**indef** *vase* $\mathbf{Ix_6}$) λ_{13} *John broke* $\mathbf{t_{13}}$ *vase*]
   $\exists_6$ [(**indef** *vase* $\mathbf{Ix_6}$) λ_{13} *John broke* $\mathbf{t_{13}}$ *vase* **and** $\mathbf{it_6}$ *was expensive*]

[20] Strictly speaking, the LFs given here violate the Novelty Condition because there is really no reason for the leftmost indefinite (i.e. the one in the first sentence, the restrictor and left disjunct) to introduce an index which is then immediately closed off by $\exists$. Since I am about to introduce a condition that requires the blue conjunct to have an exact copy in the nearby text (i.e. a salient antecedent), one might say that this very requirement suffices to override the Novelty Condition. Alternatively one might remove the index on the leftmost indefinites and say that the salience requirement is applied modulo indexation on the indefinites. Both options work. I will implicitly pursue the former for the sake of transparency.

(63) [**every** *student* ~~who~~ $\boldsymbol{\lambda_6}$ $\boldsymbol{\exists_{13}}$ (**indef** *umbrella* $\mathbf{Ix_{13}}$) $\boldsymbol{\lambda_{52}}$ $\mathbf{t_6}$ *owns* $\mathbf{t_{52}}$]
$\boldsymbol{\lambda_6}$ $\boldsymbol{\exists_{13}}$ [(**indef** *umbrella* $\mathbf{Ix_{13}}$) $\boldsymbol{\lambda_{52}}$ $\mathbf{t_6}$ *owns* $\mathbf{t_{52}}$ **and** $\mathbf{t_6}$ *brought* $\mathbf{it_{13}}$]

(64) [**not** $\boldsymbol{\exists_{134}}$ (**indef** *suit* $\mathbf{Ix_{134}}$) $\boldsymbol{\lambda_{66}}$ *John owns* $\mathbf{t_{66}}$]
or $\boldsymbol{\exists_{134}}$ [(**indef** *suit* $\mathbf{Ix_{134}}$) $\boldsymbol{\lambda_{66}}$ *John owns* $\mathbf{t_{66}}$ **and** *he will wear* $\mathbf{it_{134}}$]

Under what conditions do we get to pronounce only the right conjunct of a given conjunctive structure? In the examples above, the blue conjuncts are salient in the sense that they have an exact copy in nearby text. To see that salience in this sense is a necessary requirement consider the following contrast (i.e. the so-called "formal link" problem).

(65) a. #Every woman who is not single is sitting next to him.
b. Every woman who is married to a man is sitting next to him.

To capture this contrast we need to make sure that the LF below is not available for the first sentence. The most obvious thing to say is that the blue conjunct does not have an exact copy in the nearby text.

(66) [**every** *woman* ~~who~~ $\boldsymbol{\lambda_6}$ $\mathbf{t_6}$ *is not single*]
$\boldsymbol{\lambda_6}$ $\boldsymbol{\exists_{13}}$ [(**indef** *man* $\mathbf{Ix_{13}}$) $\boldsymbol{\lambda_{52}}$ $\mathbf{t_6}$ *is married to* $\mathbf{t_{52}}$ **and** $\mathbf{t_6}$ *is sitting next to* $\mathbf{him_{13}}$]

To see that salience alone is not sufficient, consider the sentence "*John broke a vase and Bill repaired it*". Clearly we do not want to allow this sentence to have a reading that entails that Bill fixed a vase that he himself broke. So the LF in (67) ought to be blocked even though the blue conjunct has an exact copy in nearby text.

(67) *John* $\boldsymbol{\lambda_{72}}$ $\boldsymbol{\exists_6}$ [(**indef** *vase* $\mathbf{Ix_6}$) $\boldsymbol{\lambda_{13}}$ $\mathbf{t_{72}}$ *broke* $\mathbf{t_{13}}$ *vase*]
and *Bill* $\boldsymbol{\lambda_{72}}$ $\boldsymbol{\exists_6}$ [(**indef** *vase* $\mathbf{Ix_6}$) $\boldsymbol{\lambda_{13}}$ $\mathbf{t_{72}}$ *broke* $\mathbf{t_{13}}$ *vase* **and** $\mathbf{t_{72}}$ *repaired* $\mathbf{it_6}$]

Intuitively, in (67) the blue conjunct contributes information that is otherwise not there, namely that Bill broke a vase. It seems plausible that only overt conjuncts should be allowed to contribute new information like this. So the idea is that covert conjunction is subject to two requirements: the left conjunct must be both salient *and trivial*.[21] A bit more precisely, I propose the following principle.

(68) **Covert Conjunction Principle (CCP).**
Any occurrence **o** of a constituent of the form "$\boldsymbol{\exists_i}$[α **and** β]" in LF φ asserted in the situation of utterance @ may be phonological reduced to β if (i) the expression "$\boldsymbol{\exists_i}\alpha$" is salient in @ and (ii) the local context of **o** in φ relative to background assumptions in @ entails that "$\boldsymbol{\exists_i}\alpha$" is true.

To see how CCP is supposed to work, consider the following LF again.

(69) [**every** *student* ~~who~~ $\boldsymbol{\lambda_6}$ $\boldsymbol{\exists_{13}}$ (**indef** *umbrella* $\mathbf{Ix_{13}}$) $\boldsymbol{\lambda_{52}}$ $\mathbf{t_6}$ *owns* $\mathbf{t_{52}}$]
$\boldsymbol{\lambda_6}$ $\boldsymbol{\exists_{13}}$ [(**indef** *umbrella* $\mathbf{Ix_{13}}$) $\boldsymbol{\lambda_{52}}$ $\mathbf{t_6}$ *owns* $\mathbf{t_{52}}$ **and** $\mathbf{t_6}$ *brought* $\mathbf{it_{13}}$]

Let α be the blue conjunct. Here the salience condition is met because "$\boldsymbol{\exists_{13}}\alpha$" has an exact copy in the restrictor. To see that the triviality condition is met as well, we need to follow Schlenker's (2009) recipe and compute the local context of the nuclear-scope clause. I refer the reader to Schlenker's paper for the details. Suppose this LF is asserted in situation of utterance @. The local context **c** in question consists of the set of world-assignment pairs (w, g) such that (i) w belongs

[21] An alternative strategy is to say that salience *is* violated in (67) after all because the trace left behind by *John* is different from the trace left behind by *Bill* and therefore the blue conjunct doesn't have an *exact* copy in discourse.

to $c_@$, (ii) at least one student owns an umbrella in w and (iii) g differs from $g_@$ only in that it assigns the index **6** to some umbrella-owning student in w. Intuitively, no world-assignment pair outside of this set "matters" for the computation of the truth-value of the sentence. Now since "$\exists_{13}\alpha$" is true relative to (w, g) iff g_6 owns at least one umbrella in w, it follows that "$\exists_{13}\alpha$" is indeed trivial in **c** and the triviality condition is met as well. By CCP, therefore, the blue conjunct (along with "*and*") may remain covert.

Let me add that I rely on Schlenker's recipe for computing local contexts for convenience. In principle, CCP can be formulated on the basis of redundancy alone with no mention of local contexts. We can intuitively appreciate how this can be done by observing that, for any expression β of type $\mathtt{t}$, the two LFs below are predicted to be contextually equivalent in any context.

(70) a. **every** *student* ~~who~~ $\lambda_6\,\exists_{13}$ (**indef** *umbrella* $\mathbf{I}x_{13}$) $\lambda_{52}\,\mathbf{t}_6$ *owns* $\mathbf{t}_{52}$
$\lambda_6\,\exists_{13}$ (**indef** *umbrella* $\mathbf{I}x_{13}$) $\lambda_{52}\,\mathbf{t}_6$ *owns* $\mathbf{t}_{52}$ **and** β

b. **every** *student* ~~who~~ $\lambda_6\,\exists_{13}$ (**indef** *umbrella* $\mathbf{I}x_{13}$) $\lambda_{52}\,\mathbf{t}_6$ *owns* $\mathbf{t}_{52}$
$\lambda_6\,\exists_{13}\,\beta$

Finally, let me point out a problem with CCP that's worth further exploration. Consider the sentence below.[22]

(71) He is smart and Sue knows that Ann is married to a rich man.

By no stretch of imagination can the pronoun be anaphoric to the indefinite here. However, I happen to predict an LF of the following form. Note that the blue conjunct can either attach to the whole sentence (as shown here) or to the left conjunct alone.

(72) $\exists_1$ *Ann is married to* **indef**$_1$ *rich man* **and**
he$_1$ *is smart* **and** *Sue knows* $\exists_1$ *Ann is married to* **indef**$_1$ *rich man*

On the face of it, the salience condition is met since the blue conjunct has an exact copy below "*know*". Now it is true that due to the triviality condition, this LF is only licensed if in @ it is common ground that Ann has a rich husband. But to the extent that a sentence like "*Sue knows that Ann has a rich husband*" can be uttered out of the blue and cause the interlocutors to adjust their beliefs to make it felicitous (i.e. to accommodate that Ann has a rich husband), one would expect that (72) should be acceptable out of the blue for the very same reason: the interlocutors can accommodate that Ann has a rich husband and thereby create a context in which the blue conjunct meets the triviality condition and the pronoun is bound.[23]

Let me sketch a way to think about this puzzle. My intuition is that the problem with (72) is that there is no connection between how the triviality condition is met and the expression that verifies the salient condition. In the LF below, for example, the reason that the triviality condition is met is precisely the occurrence of an exact copy of the blue conjunct in the restrictor. For example, if we replace "*an umbrella*" in the restrictor with, say, "*something*", the blue conjunct will violate both salience and triviality.

(73) [**every** *student* ~~who~~ $\lambda_6\,\exists_{13}$ (**indef** *umbrella* $\mathbf{I}x_{13}$) $\lambda_{52}\,\mathbf{t}_6$ *owns* $\mathbf{t}_{52}$]
$\lambda_6\,\exists_{13}$ [(**indef** *umbrella* $\mathbf{I}x_{13}$) $\lambda_{52}\,\mathbf{t}_6$ *owns* $\mathbf{t}_{52}$ **and** $\mathbf{t}_6$ *brought* $\mathbf{it}_{13}$]

[22] Incidentally, this problem also raises a non-trivial challenge for Chatain (2024).

[23] Note that this problem is not as widespread as one might imagine. For example, the sentence "*he is smart and Ann is married to a rich man*" is not predicted to allow for a reading in which the pronoun is anaphoric to the indefinite. The reason is that in this case, any context in which the triviality condition is met is a context in which the rightmost conjunct is redundant.

But this is not really the case with (72). There we could replace "*a rich man*" in the embedded clause with e.g. "*someone*". This change will have no effect on whether the blue conjunct satisfies triviality or not because this change would not have any effect on the local context of the blue conjunct to begin with. The intuition I am after can be made more precise as the following modification of CCP.

(74) Any occurrence **o** of a constituent of the form "$\exists_i[\,\alpha$ **and** $\beta\,]$" in LF φ asserted in the situation of utterance @ may be phonological reduced to β if there is an expression γ that's salient in @ such that (i) "$\exists_i\alpha$" is identical to γ, (ii) the local context of **o** in φ relative to background assumptions in @ entails that "$\exists_i\alpha$" is true and (iii) if γ is replaced with another expression γ', the condition in (ii) fails to be met.

In the rest of this paper, we can afford to ignore the problem I just discussed and therefore I will only make reference to the original formulation of CCP.

5 A comparison with Rothschild (2017)

There is obviously a rich literature on the topic of this paper. Unfortunately in the space of this paper I cannot provide anything near an exhaustive discussion of how my proposal relates to even the relatively recent work on the subject (see e.g. Elliott 2020; Mandelkern 2022b; Spector 2024a; Chatain 2024; Hofmann 2025a, among others). Instead I'd like to focus on Rothschild (2017). Rothschild's paper is obviously of immediate relevance here not only because my approach to anaphora in conjunction is inspired by his (as well as Heim 2024), but also because I borrow the idea of covert conjunction from Rothschild's paper as well. I hope that this compressed discussion will shed some light on some key issues that, at least in part, will clarify how my proposal relates to the many others that I will not mention here.

My proposal and Rothschild's have a lot in common. The treatment of indexed indefinites and anaphora in conjunction more generally is essentially the same modulo important technicalities such as the exact definition of the $\exists$-operator and the exact formulation of the Novelty Condition. The key difference between the two, however, pertains to how each deals with discourse anaphora. Specifically, instead of relying on covert conjunction, as I do here, Rothschild adopts a view of information-states (or, context-sets) as sets of world-assignments pairs and designs the pragmatics so that these information-states effectively transfer the witness of the indefinite to the pronoun in subsequent discourse.

To see how this is supposed to work, let the null context $\mathbf{c}_0$ (i.e. the imaginary context in which no information has yet been transmitted) be the set of all world-assignments pairs. Suppose furthermore that information-exchange is subject to the following principles.

(75) For any context **c** and LF φ,
- a. φ is felicitous in **c** only if $\forall(w,g) \in \mathbf{c}:\ \varphi \in \mathbf{dom}([\![\,\cdot\,]\!]^{w,g})$.
- b. If φ is felicitous in **c** then $\mathbf{c} + \varphi = \{(w,g) \in \mathbf{c}:\ [\![\,\varphi\,]\!]^{w,g}$ is true$\}$

Now, since the indefinite "*John broke* $a^{\mathbf{13}}$ *vase*" is defined relative to any world-assignment pair, it follows that,

(76) a. "*John broke* $a^{\mathbf{13}}$ *vase*" is felicitous in $\mathbf{c}_0$ and
b. $\mathbf{c}_0 +$ "*John broke* $a^{\mathbf{13}}$ *vase*" $= \{(w,g):\ g_{\mathbf{13}}$ was a vase that John broke in $w\}$

Importantly, since "$it_{\mathbf{13}}$ *was expensive*" is only defined relative to (w,g) if g values the index **13**, it follows from the bridge principle in (75-a) that this sentence is not felicitous in $\mathbf{c}_0$. This is simply

because there are many world-assignments pairs (w, g) in $\mathbf{c}_0$ such that g does not value **13**. On the other hand,

(77) a. "*it*$_{\mathbf{13}}$ *was expensive*" is felicitous in $\mathbf{c}_0$ + "*John broke a*$^{\mathbf{13}}$ *vase*" and
b. $\mathbf{c}_0$ + "*John broke a*$^{\mathbf{13}}$ *vase*" + "*it*$_{\mathbf{13}}$ *was expensive*"
$= \{(w, g) : g_{\mathbf{13}}$ was an expensive vase that John broke in $w\}$

Finally, consider the text below.

(78) John has a wife. A woman is beautiful.

In order to prevent a reading that would amount to saying that John has a beautiful wife, Rothschild posits that an (indexed) indefinite DP cannot be used unless the result of replacing that DP with a co-indexed pronoun is infelicitous. So the idea is that if the two indefinites above are indexed with **i**, the second sentence is blocked by "*she*$_{\mathbf{i}}$ *is beautiful*". The latter is felicitous because satisfies the bridge principle in (75-a): every world-assignment pair (w, g) in the context against which this sentence would be evaluated is such that g valued **i**. Stated the other way around, Rothschild's version of the Novelty Condition is that an indefinite bearing index **i** can only be used felicitously if it is evaluated in a context **c** in which there is at least one world-assignment (w, g) in **c** such that g does not value **i**. This in a nutshell is Rothschild's proposed theory of discourse anaphora. I would now like to draw attention to some consequences of this proposal.

In Rothschild's theory, an anaphoric link between an indefinite and a pronoun can be established either via co-indexation or via covert conjunction. The latter is used e.g. in the treatment of bathroom sentences and donkey cases. Of the two, only the former may apply at the discourse level. Indeed the point of the pragmatics sketched above is precisely to allow for witness transfer across sentential boundaries without any need for covert conjunction. But this means that certain anaphoric possibilities that are straightforwardly predicted to be available intra-sententially are unavailable inter-sententially. Take quantificational subordination, for example.[24]

(79) a. Every visitor got a$_{\mathbf{i}}$ gift card and most visitors used it$_{\mathbf{i}}$ immediately.
b. Every visitor got a$_{\mathbf{i}}$ gift card. Most visitors used it$_{\mathbf{i}}$ immediately.

In Rothschild's framework (and mine), there is a straightforward analysis of the right conjunct of (79-a) using covert conjunction. Roughly,

(80) ... **most** *visitors* $\exists_{\mathbf{i}}$ *got* **indef**$_{\mathbf{i}}$ *gift card* **and** *used* **it**$_{\mathbf{i}}$ *immediately*.

In my proposal, the same analysis applies without further ado to (79-b). In Rothschild's framework, however, this is not so. Rothschild's version of the principle of that governs covert conjunction allows the latter only if the covert conjunct has an exact copy *within* the sentence in which occurs.

(81) If a sentence φ contains two clauses α and β, any occurrence of β can be replaced with "α **and** β" if the result of this replacement is classically equivalent with φ.[25]

From this self-imposed restriction it follows that (79-b) ought to be treated differently from (79-a). Of course, this is not a fatal problem. One can imagine ways of analyzing (79-b) that do not

[24] Subordination is only one example of this kind. For instance, the treatment of "presupposed indefinites" in the next section raises exactly the same problem for Rothschild.

[25] Rothschild defines classical equivalence as follows: φ and ψ are classically equivalent iff once all occurrences of the $\exists$-operator are deleted they have the same denotation relative to every world-assignment pair.

require covert conjunction. The point being made here is simply that pragmatic witness-transfer *in and out of itself* is not rich enough to mimic covert conjunction in the inter-sentential case. There is a price to be paid if covert conjunction is limited to the intra-sentential case.

Now, in principle one could eliminate (81) in favor of CCP but keep Rothschild's pragmatic system in place. The result would be a hybrid theory in which in many cases anaphoric links can be established either via co-indexation by relying on the pragmatics to transfer witnesses or via covert conjunction. How would this theory compare to the one I proposed above, in which covert conjunction is presumed to do all of the heavily lifting?

To begin with, there are explanatory matters to consider. As Mandelkern (2022a) points out,

> Being unconstrained is a more acute problem: to have a predictive theory, we need to know when we insert daggers [= the $\exists$-operator, AA] and when we don't. For instance, we want an explanation of why it is very hard to get a dagger-free reading of singly negated indefinites (that is, a reading on which the negated indefinite does not have universal quantificational force), and why it is, conversely, very hard to get a daggered reading of doubly negated indefinites (that is, a reading on which the doubly negated indefinite does not license anaphora).

The point is that in Rothschild's theory, a good deal of optionality is involved pertaining to whether an indexed indefinite is closed off by the $\exists$-operator or not. This is of course because cross-sentential anaphora is only possible if the indexed indefinite is *not* bound by $\exists$. This optionality, in turn, raises the questions that Mandelkern is emphasizing. In my implementation, in contrast, the pragmatic system guarantees that indexed indefinites must be bound by $\exists$ across the board. The reason I was able to get away with this is precisely because I have allocated the job of handling discourse anaphora to covert conjunction.

Conceptual matters aside, there are also empirical problems. Take e.g. the following text.[26]

(82) *Either John is married to a_i woman or he is single. A_i sister of Bill's is married.

In my proposal, there is a straightforward reason why the two indefinites here cannot be co-indexed. We can either apply covert conjunction to the second sentence or not. If we don't, then the two indefinites will be closed off by $\exists$ in their respective sentences and there is nothing to worry about. If we do apply covert conjunct, we get a structure of the following sort which I showed above violates the Novelty Condition, see example (54-b).

(83) $\exists_{\mathbf{10}}$ (((*John is married to* $\mathbf{indef_{10}}$ *woman*) **or** *John is single*) **and** ($\mathbf{indef_{10}}$ *sister of Bill is married*))

Unfortunately, Rothschild's conception of the Novelty Condition is not strong enough to prevent the two indefinites in (82) from being co-indexed. This is because the leftmost indefinite is embedded in a disjunction. Consequently, the context that results from updating, say, $\mathbf{c}_0$ with the first sentence will have many world-assignment pairs (w, g) in which g doesn't value the index **10** (these are the ones that verify the right disjunct). Therefore, the result of replacing the rightmost indefinite with a pronoun is an infelicitous utterance and the indefinite is predicted to be acceptable.

Can we solve this problem by replacing Rothschild's Novelty Condition with mine? We can, but the result undermines Rothschild's project root and branch. The problem is that even in a simple case such as (84), the index on the indefinite in the first sentence wouldn't pass my Novelty Condition; since the anaphoric pronoun only occurs in a subsequent sentence, when the Novelty Condition is checked in the first sentence the indexed indefinite is ruled out in favor of

[26] I am grateful to B. Spector for bringing this issue to my attention.

the plain, unindexed version: There is no motivation for the index *yet* and in general there is no telling when this motivation might appear (next sentence? the one after? next paragraph?).

(84) John broke a vase. It was expensive.

There is much to discuss, of course. Obviously, my favored way of improving Rothschild's theory is precisely the theory that I am proposing in this paper! In the interest of space let me stop here and finish with one observation. Heim (2024) proposes that texts should be considered as linguistic units consisting of conjoined utterances that are closed off by ∃-operator at root (this is a throw-back to classical DRT, of course). The observation I'd like to make here is that modulo important technicalities, i.e. exact definition of the ∃-operator and the exact formulation of the Novelty Condition, my proposal and Rothschild's arguably collapse into one theory if Heim's assumption is incorporated. In that case, the ∃-operator at the root of the text can do the job of witness transfer and covert conjunction can be used only if needed. For example, simple cases of discourse anaphora would no longer require covert conjunction, as Rothschild would have it. I suspect my solution to the problem I raised above in (82) can in that case be implemented in the resulting theory without further ado. It is at the moment not entirely clear to me what is to be gain by this move, however. Specifically, it is not clear to me what advantage this framework would have over the one I introduced in the previous sections (though see the concluding section). The *dis*advantage, arguably, is the representational commitment to ∃-closed texts.

6 Beyond the basic cases: EEG

In this section I'd like to highlight some interesting consequences of the theory that I have developed in the previous sections. Many of these generalizations that both provide support for EEG, repeated below, and exhibit various facets of the proposal. As I indicated at the outset, EEG is a variant of a generalization due to Chatain (2024). I refer the reader to Chatain's paper for discussion of other case-studies.

(85) **Existence Entailment Generalization (EEG).**
If φ is an indefinite statement and α is an anaphoric definite, in a text that contains both φ and α, anaphoric dependency between φ and α is possible if and only if there is a sentential constituent β that contains α such that the local context of β entails that φ is true.

In (86-a), the indefinite "*a wife*" is embedded under "*know*" and "*likely*" in the consequent of a conditional. Yet it manages to antecede the pronoun in the next sentence. In (86-b), the embedded clause "*John has a wife*" is replaced with the truth-conditionally near-equivalent "*John is not single*". The pronoun is perceived as marked in a manner characteristic of violations of the formal link condition, indicating that indeed it is the indefinite in (86-a) is responsible for the interpretation of the pronoun. In (86-c), "*know*" is replaced with "*think*" and anaphora downstream becomes impossible. This indicates that the factivity of the latter is playing a crucial role as well. Indeed if the antecedent is designed to block the factive presupposition to project, as we have in (86-d), anaphora becomes impossible.

(86) a. If Sue has ever met John, it is likely that she knows that John has a^{i} wife.
He talks about her_{i} all the time!
b. #If Sue has ever met John, it is likely that she knows that John is not single.
He talks about her all the time!

c. #If Sue has ever met John, it is likely that she thinks that John has a^{i} wife.
He talks about her$_{i}$ all the time!
d. #If John is married, it is likely that Sue knows that John has a^{i} wife.
He talks about her$_{i}$ all the time!

In dynamic theories (e.g. Heim 1983), presuppositions are "tests"; that is, they merely encode a condition on the input without changing it. The anaphoric potential of presupposed indefinites can only be captured if we switch to a two-dimensional framework in which each sentence is assigned a pair of context-change potentials, one presuppositional and one assertive. The lexical entries of all operators will have to be crafted accordingly.

One way to probe the content of an expression is to examine the inferences that result from embedding that expression in environments that are known to reliably trigger certain kinds of inferences. For instance, sentences of the form $\diamond(\varphi \vee \psi)$ trigger the so-called free choice inferences $\diamond\varphi$ and $\diamond\psi$. So we can examine these inferences to indirectly make conclusions about the semantic content of each individual disjunct. Against this background, consider the following sentence (from Elliott & Sudo 2025).

(87) You may include no^{i} appendix, or keep it$_{i}$ to a single page.

Intuitively, we have two inferences: that the addressee is allowed to include no appendix at all and that the addressee is allowed to include an appendix that's no longer than a single page. The latter inference suggests that the right disjunct "*keep it to a single page*", which contains a pronoun anaphoric to the negated indefinite in the left disjunct, is interpreted to mean something like "*include an appendix and keep it to a single page*". This is of course precisely what the account based on covert conjunction predicts. The same point can be made with distributive inferences (88) and simplification of disjunctive antecedents (89) (as Elliott & Sudo point out).

(88) Every student either didn't write an^{i} appendix or kept it$_{i}$ to a single page.
⇝ *At least one student didn't write an appendix*
⇝ *At least one student wrote a less than one page appendix*

(89) If John doesn't include an^{i} appendix or keeps it$_{i}$ to a single page, his dissertation will meet the length requirement.
⇝ *If John doesn't include an appendix, . . .*
⇝ *If John includes a less than one page appendix, . . .*

In dynamic semantics quite generally (e.g. Groenendijk & Stokhof 1991), operators are either externally dynamic (e.g. "*and*") or externally static (e.g. "*every*"). It appears however that "*or*" fits into neither category. An indefinite embedded in a disjunct *can* antecedent a pronoun in subsequent discourse but *only if* the other disjunct is presumed to be false. Consider the following contrast based on an observation due to Rothschild (2017):

(90) Either he won't get a good grade or I will buy him a^{i} nice box of chocolate.
a. If he gets an A, I'll let him eat all of it$_{i}$!
b. #If he gets an F, I won't let him eat any of it$_{i}$!

Given the redundancy condition on covert conjunction, this is precisely the pattern we should expect. See Hofmann (2025a) for a discussion of related constructions in the context of dynamic semantics.

Next, consider the case of Stone's (1992) disjunctions. The example below is from Schlenker (2011).

(91) Mary will bake a strudel or John will buy a tiramisù, and I will devour it!

The treatment of these cases follows essentially Rothschild (2017).

(92) $\exists_i$ [[*Mary will bake* **indef**$_i$ *strudel* **or** *John will buy* **indef**$_i$ *tiramisù*] **and** [*I will devour* **it**$_i$]]

First note that the presupposition of the $\exists$-operator is met. For any w and g, $\exists$'s prejacent is defined and false relative to $(w, g_{i \mapsto \#})$. This is because relative to $(w, g_{i \mapsto \#})$, both disjuncts are false. Furthermore, both indefinites satisfy the Novelty Condition. For example, if we remove the index on the rightmost indefinite, the resulting LF will presuppose that John will not buy a tiramisù, see the discussion of example (41-c) above.

An interesting consequence of the current proposal is that in certain configurations a decision needs to be made pertaining to whether covert conjunction is involved or not and, if so, where it is located. For example, consider the following sentences.

(93) a. I bet John broke a vase and didn't pay for it.
b. I bet John owns a suit and didn't wear it.

Intuitively, the speaker of (93-a) wins the bet as soon as there is a vase that John broke and didn't pay for. It does not matter if there is also a vase that John broke but did pay for. In contrast, the speaker of (93-b) intuitively wins the bet only if John owns suit but did not wear *any* of the suit that he owns. In this case, the sheer existence of a suit that John owns but did not wear does not suffice to win the bet. Within the current proposal, this contrast can be accounted for as follows. In one case, the indefinite antecedes the pronoun without further ado via the $\exists$-operator (94-a). In the other, there is a covert conjunction below negation (94-b).

(94) a. *I bet* $\exists_i$ [*John broke* **indef**$_i$ *vase* **and** [**not** *John paid for* **it**$_i$]]
b. *I bet* [[$\exists_i$ *John owns* **indef**$_i$ *suit*] **and not** [$\exists_i$ *John owns* **indef**$_i$ *suit* **and** *John paid for* **it**$_i$]]

Indeed, one can construct similar examples even without negation.

(95) Every student who has a suit wears it whenever he goes to a fancy party.

Intuitively, this sentence need not mean that for every student who has a suit, there is a particular suit that he wears to every fancy occasion. The more plausible interpretation is represented with covert conjunction below "*whenever*"; according to this, the sentence is true iff every student who owns a suit wears some suit or other that he owns whenever he goes to a fancy party.

(96) ...**λi** [$\exists_i$ **t**$_i$ *has* **indef**$_j$ *suit* **and** **t**$_i$ *wears* **it**$_j$] [**whenever he**$_i$ *goes to a fancy party*]

Let me finish this section with a discussion of a rather surprising redundancy effect in disjunction. Consider the following sentences.

(97) a. Either Mary isn't pregnant, or she is pregnant and she is happy.
b. Either Mary isn't pregnant, or she is happy.

As Mayr & Romoli (2016) point out, the fact that (97-a) is felicitous is rather surprising. After all, (97-a) appears to be equivalent with (97-b). Since the latter is structurally simpler, one would expect (97-a) to be infelicitous for the same reason that e.g. "*Mary is expecting a daughter and she is pregnant*" is. Now, for my purposes it does not matter why (97-a) is felicitous (see Mayr & Romoli 2016 for detailed discussion). What does matter is that the redundancy effect actually does appear in certain cases. Consider,

(98) a. Either John doesn't have a cat, or he has a cat and he loves it.

b. #Either John doesn't have a cat, or it is a cat and he loves it.
c. #Either John doesn't have a cat, or he has it and he loves it.

The sentence (98-a) exhibits the same puzzle as before. After all, the speaker could just as well have said "*either John doesn't have a cat or he loves it*". What is surprising is that (98-b) and (98-c) are perceived as infelicitous. But why should this be? On the face of it, it is difficult to reconcile the oddness of these sentences with the fact that (97-a) is impeccable. For good measure, note that the oddness of (98-b) and (98-c) is in fact about redundancy. If the conjunct is strengthened, the oddness disappears.

(99) a. Either John doesn't have a cat, or it is a beautiful cat and he loves it.
b. Either John doesn't have a car, or he has had it for years and he loves it.

I'd like to point out that this facts receive a natural explanation under the current proposal. In order to establish an anaphoric link in e.g. (98-b), we need an LF in which the right disjunct is analyzed roughly as follows.

(100) **or** $\exists_i$ (*John has* **indef**$_i$ *cat* **and** **it**$_i$ *is a cat* **and** ...)

The problem, of course, is that even if we assume the triviality condition is met, the blue conjunct makes "*it is a cat*" redundant. In other words, this LF is expected to be infelicitous for the same reason that the following sentence is.

(101) #John has a_i cat and it_i is a cat.

7 Conclusion and a loose end

My fundamental goal in this paper was explore a viable theory of singular anaphora that does not necessitate departure from an independently formulated principles of semantic interpretation and pragmatic information-exchange. In other words, the hope was to minimize and isolate the key ingredients that are needed to establish anaphoric links. Naturally, I had to exclude from consideration many domains that are directly relevant here. The question of $\exists/\forall$-readings, for example, was one that was set aside at the outset. Another major omission is plural anaphora. I hope future work can explore the limits of the theory discussed in this paper.

I'd like to end with a discussion of an apparent problem for my proposal. Consider the following text.

(102) John has a sister. She is a mathematician. She works at MIT.

In the current proposal, this text is in principle predicted to be true even if John has one sister who is a mathematician but does not work at MIT and one sister who works at MIT but is not a mathematician. The reason is that the pronoun in the third sentence can in principle receive the analysis in (103-a) instead of (103-b).

(103) a. $\exists_i$ *John has* **indef**$_i$ *sister* **and** **she**$_i$ *works at MIT*
b. $\exists_i$ *John has* **indef**$_i$ *sister* **and** **she**$_i$ *is a mathematician* **and** **she**$_i$ *works at MIT*

Obviously, some pressure must be introduced for the parser to go for the strongest available candidate for a covert conjunct. Do what extent is this stipulation a disadvantage of the current proposal relative to its alternatives? Let me make three points about this. First, to the extent that the indefinite can be relied upon to trigger a uniqueness implicature, this problem is moot because in that case there would be no difference between (103-a) and (103-b). Second, as I

pointed out at the end of section 5, *if* discourse anaphora is accounted for via existential closure over texts, there would be no reason to rely upon covert conjunct in cases like (102) and this problem would disappear. Finally and, in a sense, most importantly, it is not entirely clear to me if allowing for the sort of ambiguity mentioned above is *in principle* a bad thing to begin with. Consider the following exchange.

(104) a. **A:** John has a sister. She works at MIT.
b. **B:** No, she works at Harvard.

Descriptively, the proper analysis of **B**'s utterance here requires "backtracking"; that is, **B**'s utterance should be analyzed as in (105-a) instead of (105-b).

(105) a. $\exists_i$ *John has* **indef$_i$** *sister* **and she$_i$** *works at Harvard*
b. $\exists_i$ *John has* **indef$_i$** *sister* **and she$_i$** *works at MIT* **and she$_i$** *works at Harvard*

On the face of it, any theory that has the resources to explain backtracking also predicts an ambiguity along the lines of (103-a) vs (103-b). The fact that this ambiguity is generally not perceive presumably has to do with the fact that backtracking is subject to strict conditions. In other words, information-exchange is generally presumed to be *monotonic*. But this is of course just another way of saying that all else equal (103-b) is preferable to (103-a).

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