

INTRODUCTION: We develop a *flexible* take on SCOPE THEORY OF INTENSIONALITY (STI), where exceptional *de re* interpretations are derived via *recursive scope-taking* (Dayal 1996, Charlow 2019, Demirok 2019). The flexible STI avoids undergeneration issues associated with, e.g., Keshet’s (2010) *split intensionality*, while also avoiding *overgeneration* issues associated with the BINDING THEORY OF INTENSIONALITY (BTI) (Percus 2000). An important empirical contribution of the flexible STI is a straightforward account of Bäuerle’s Puzzle, which cannot be accounted for under existing versions of the STI, as demonstrated by Grano (2019).

ASSUMPTIONS: we assume that the grammar is fundamentally *intensional* – predicates return *propositions*; definite descriptions denote *individual concepts*. Consequently, definite descriptions and verbal predicates can’t compose via function application. We need some mechanism for resolving the type-mismatch.

$$(1) \quad \llbracket \text{swim} \rrbracket := \lambda x w. \text{swim}_w x \quad e \rightarrow s \rightarrow t \quad (2) \quad \llbracket \text{the boy} \rrbracket := \lambda w. \iota x[\text{boy}_w x] \quad s \rightarrow e$$

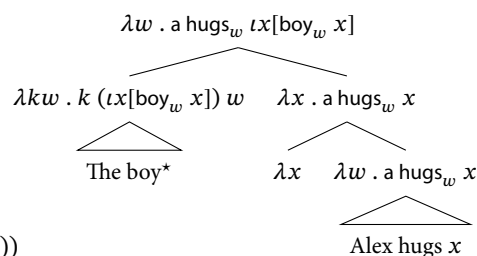
INTRODUCING BIND: In order to allow composition to proceed, we’ll propose a type-shifting operation which will play a central role in the logic of our intensional grammar – (\star) (pronounced: *bind*; defined in (3)). One can think of *bind* as an operation that takes an intensional value, and converts it into an intensional *scope-taker*. When a verbal predicate takes a definite as an argument, the *bind*-shifted definite undergoes QR, taking scope over the resulting derived predicate, as in (4).

$$(3) \quad m^\star := \lambda k. \lambda w. k(m w) w \quad (\star) :: S a \rightarrow (a \rightarrow S b) \rightarrow S b$$

ACCOUNTING FOR EXCEPTIONAL *DE RE*: We have everything we need to account for simple cases of *de re*. Let’s take (5), where *philosopher* is interpreted *de re*. In order to derive this reading, *the philosopher* is *bind*-shifted, and scoped out of the embedded clause.

(5) Sally wants to hug the philosopher_{de re}.

$$(6) \quad \llbracket \text{the philosopher} \rrbracket^\star (\lambda x. \lambda w. s \text{ wants}_w (\lambda w'. s \text{ hug}_{w'} x))$$



There is a major problem for the STI however – the STI predicts *prima facie* that finite clauses should block *de re* readings, since they are scope islands.

Nominal predicates, however, can easily be interpreted *de re* in these same environments, as in (7). Keshet develops a variant of the STI which doesn’t face this issue, but it doesn’t generalize to nominal predicates in doubly-embedded environments (we show this in detail in the talk).

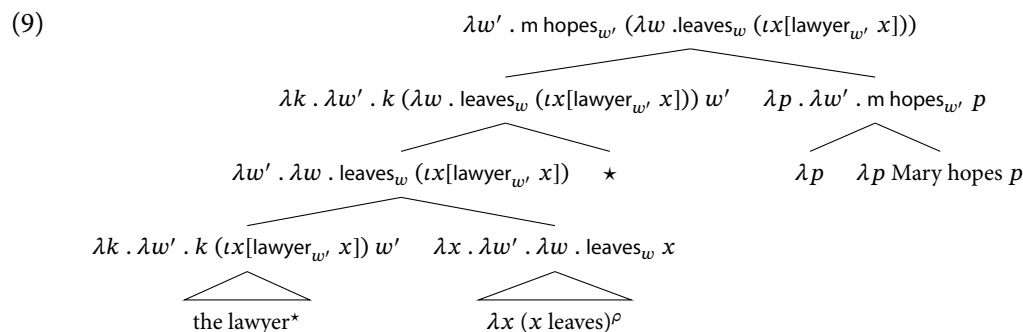
(7) Mary hopes that the lawyer_{de re} leaves.

We’ll suggest that what takes scope under the *de re* interpretation is not just the definite itself, but rather the entire embedded clause. In order to flesh out this idea, we’ll need an additional, extremely simple type-shifting operation (ρ) (pronounced *return*). Return simply takes a value and *lifts* it into a trivially intensional value. At this point it will also be useful to introduce a type constructor for talking about intensional values; instead of writing $s \rightarrow t$, we’ll write $S t$. We can observe at this point that the triple $(S, (\star), \rho)$ constitute a *monad* (concretely, the Reader monad) – a well established mathematical construct for modelling computation.

$$(8) \quad a^\rho := \lambda w. a \quad (\rho) :: a \rightarrow S t$$

We now have everything we need to derive *exceptional de re*. The general strategy is as follows: (a) the definite scopes to the edge of the embedded clause, over a return operator – the position of return demarcates the

material that will be interpreted *de re*, (b) the embedded clause scopes over the matrix clause, leaving behind a higher-type (propositional) trace. In (9) we illustrate how the exceptional *de re* interpretation of *lawyer* in (7) is derived under our take on the STI.



QUANTIFICATION AND BÄUERLE'S PUZZLE: In the grammar that we're constructing, we currently don't have a treatment of quantification. In the general case, we need a way of composing meanings of type $S (a \rightarrow b) \rightarrow c$ with meanings of type $a \rightarrow S b$, returning something of type $S c$. We define an upgraded version of *bind* in (10), pronounced *i-bind*, which accomplishes this. (11) illustrates how *i-bind* is used to integrate quantificational determiners into the fragment.

$$(10) \quad m^* := \lambda n w . m w (\lambda x . n x w) \quad (\star) :: S ((a \rightarrow b) \rightarrow c) \rightarrow (a \rightarrow S b) \rightarrow S c$$

$$(11) \quad ([\text{every}]^{\star \circ \rho} [\text{boy}])^* [\text{left}] = \lambda w . \forall x [\text{boy}_w x \rightarrow \text{left}_w x]$$

I-bind essentially divorces quantification and intensionality. We now have everything we need in order to account for Bäuerle's puzzle. Consider (12) – as is well established, this example places conflicting requirements on the scope of the existential. As shown in detail by Grano (2019), Keshet's split intensionality take on the STI can't derive this reading.

$$(12) \quad \text{George thinks every Red Sox player}_{\text{de re}} \text{ is staying in some five star hotel downtown}_{\text{de dicto}}. \quad \exists > \forall$$

Our strategy is as follows: *every Red Sox player* scopes over the return operator, leaving behind a higher type trace of type $(e \rightarrow t) \rightarrow t$. The subject *some five star hotel* scopes below return but above the higher-type trace left behind by *every red sox player*. The result is a *world-sensitive proposition*, where *some* scopes over *every*, but the restrictor of *every NP* is relativised to the outer world argument. Consequently, *Red Sox player* is *de re*, but the quantificational force of *every* semantically reconstructs below *some*. We can schematise the computation of the Bäuerle's puzzle sentence as follows:

$$(13) \quad (\text{every-rsp} \star (\lambda Q (\rho (\text{some-fsh} \star (\lambda x (Q^\rho \star (\lambda y . y \text{ staying-in } x)))))) \star (\lambda p . g \text{ thinks } p))$$

DOUBLY-EMBEDDED *DE RE*: Grano (2019) observes that transparent readings in *doubly embedded contexts* are problematic for Keshet's split intensionality account. Consider the following example from Grano (p. 162), where the restrictor of the definite is interpreted *de re*.

$$(14) \quad \text{Mary thinks that Jo hopes that Bill will buy the hat just like mine}_{\text{de re}}.$$

On the flexible STI, this is no problem. This is because scope-island respecting pied-piping can proceed *recursively*.