A pied-piping theory of exceptional *de re*: Scoping after all

Ömer Demirok, Boğaziçi University

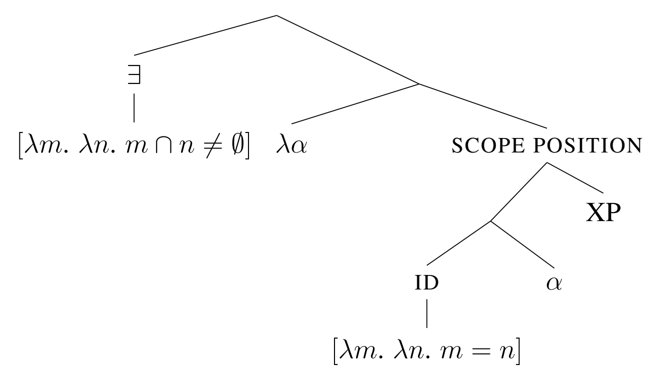
Setting the stage. The traditional scope theory of intensionality, as laid out in von Fintel and Heim (2011) and named STI in Keshet (2011), assumes a simple representation of intensionality. Under STI, a DP in the scope of an intensional operator ω cannot have a transparent (*de re*) construal with respect to ω. What I label **exceptional *de re*** has been argued to an empirical challenge of exactly this nature: a DP **can be** transparent with respect to an intensional operator ω even when it **cannot** scope above ω. As Keshet succinctly explains, *everyone in this room* in (1a) **has to** take scope within the if-clause [(1) cannot mean 'everyone in this room x is such that if x were outside, it would be empty'], yet it **can** (in fact, has to) be transparent relative to the relevant modal [because no human can be in a room and outside that room in the same world]. Therefore, (1a), grossly simplifying the Lewis-Kratzer semantics for conditionals, receives the truth conditions in (1b).

(1) a. If **everyone in this room** were outside, it would be empty. (Keshet, 2011)
b. $[\![(1a)]\!]^{w} = 1$ *iff* $[\![\text{would}]\!]^{w}(\lambda w'.\ [\![\text{everyone in this room}]\!]^{\mathbf{w}}([\![\text{outside}]\!]^{w'}))(\lambda w'.\ [\![\text{it be empty}]\!]^{w'})$

Deriving (1b) under STI faces two challenges: [1] *everyone in this room* has to move out of an extraction island to be outside the scope of the modal [2] this movement is not allowed to be scope-shifting, i.e. it cannot leave a trace of type e but has to leave a trace of type $< et, t >$ (Heim & Kratzer 1998, Romoli & Sudo 2009, Keshet 2011, von Fintel & Heim 2011). Given this unsatisfactory state of affairs, exceptional *de re* is thought to be a compelling argument against STI (well-known alternatives: a richer representation of intensionality (Percus 2000, Schwarz 2012, a.o.), split intensionality (Keshet 2011)). Yet, I show that an account of exceptional *de re* strictly under STI's assumptions is very much possible and has the advantage of explaining why scope-shift cannot be obtained in examples like (1a).

Proposal. Building on Charlow's (2017) proposal that exceptional scope (of indefinites) can be generated via pied-piping, I argue that grammar generates **exceptional *de re*** via **pied-piping**, as well. Partly departing from Charlow, I propose that for a DP to pied-pipe an XP (e.g. a clause), XP needs be syntactically 'lifted' into an **existential quantifier**, as in (2), in a way that creates a scope position of type t right above XP. As will be shown below, the 'pied-piper' DP moves out of XP and targets this scope position. The syntax of pied-piping I propose **[1]** borrows from the well-known Fox-Heim derivation[1] of a Hamblin set (Fox 2012, Heim 2012, Dayal 2016, a.o.) and **[2]** features a type-neutral $\exists$ morpheme (cf. Nishigauchi 1990, Heim 2012).

(2)

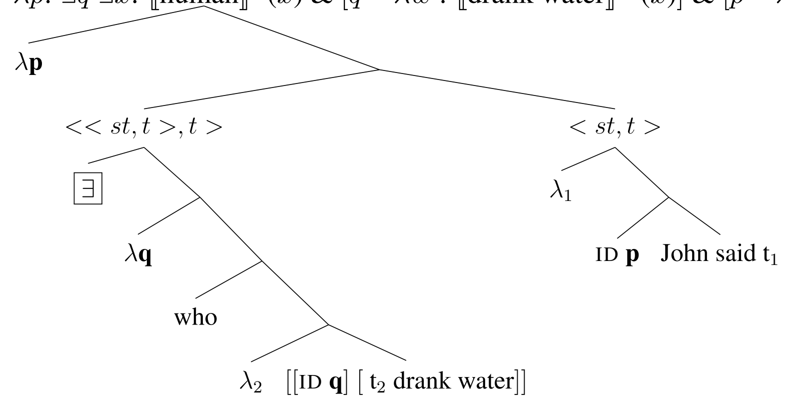


Overt clausal pied-piping in *wh*-questions (Richards 2000, Heck 2009, Cable 2010), as exemplified in (3), provides an illustration of the general logic of pied-piping [note that (3b) is in essence Dayal's (1994) LF for scope-marking constructions, proposed independent of pied-piping].

(3) a. [$_{\text{CP}}$ **Nork** edan duela ura]$_1$ esan du Jonek **t**$_1$?
[who.ERG drink AUX.COMP water.ABS] say AUX Jon.ERG
Lit: **[Who drank water]**$_1$ did John say **t**$_1$? Basque, Duguine & Irurtzun (2014:3)

[1] I assume that a semantically vacuous OP ($\lambda m.\ m$) is generated in ID's sister and moves out, yielding λ-abstraction. The λ-abstraction solution, due to Fox/Heim, dispenses with quantifiers combining with functions into sets.

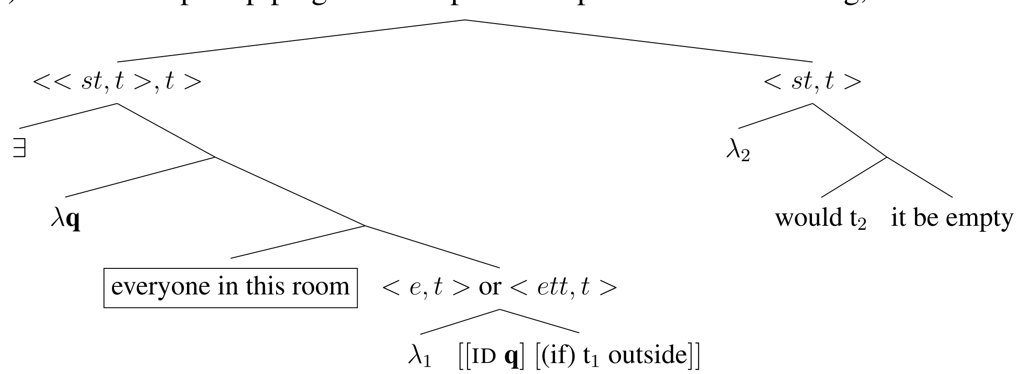
b. $\lambda p.\ \exists q\ \exists x$: $[\![\text{human}]\!]^{w}(x)$ & $[q = \lambda w'.\ [\![\text{drank water}]\!]^{w'}(x)]$ & $[p = \lambda w'.\ [\![\text{said}]\!]^{w'}(q)(\text{j})]$



I propose that pied-piping for *de re* is identical to what we see in *wh*-questions, cf. (3b), and consists in building an existential quantifier via subsequent merger of ID and $\exists$ heads. I take (overt and covert) island pied-piping to feature movement of the pied-piper to the edge of the island (Richards 2000, Cable 2010, Huhmarniemi 2012, a.o.). Hence, (4) is a possible LF for (1a), where *everyone in this room* pied-pipes the if-clause and is no longer in the scope of the modal *would*, as a result of which it is transparent with respect to *would*, as desired. Crucially, (4) receives two interpretations, which together explain how *de re* obtains without the possibility of wide scope. If the trace of *everyone in this room*, t_1, is of type e, the truth conditions derived from (4) are **anomalous** —a contradiction, for there cannot be a p s.t. for everyone in the room x, p is the proposition that x is outside, as shown in (5a) [of course, with pied-piping existential quantifiers, this is not the case, see e.g. (3b)]. This is a welcome result considering that universal quantifiers cannot scope out of if-clauses. However, if t_1 is of type $< et, t >$, *everyone in this room* scopally *"reconstructs"* into its trace position and the derived truth conditions are (5b), equivalent to the desired truth conditions in (1b)).

Then, the pied-piping approach, when combined with the default possibility of 'type-neutral λ-abstraction' [entertained in von Fintel & Heim (2011) to derive "the third reading" (i.e. narrow scope/transparent readings of indefinites) under STI], does justice to the exceptional status of universal quantifiers, blocking their unattested wide scope. Finally, this approach also extends to *de re* out of non-propositional objects (e.g. DPs) and furthermore allows us to address von Stechow's (1996) criticism of pied-piping via a simple assumption on ID's meaning, as shall be explained.

(4)



(5) a. $\exists p$: $\forall x$: $[\![\text{(one) in this room}]\!]^{w}(x) \rightarrow [p = \lambda w'.[\![\text{outside}]\!]^{w'}(x)]$ & $[\![\text{would}]\!]^{w}(p)(\lambda w'.\ [\![\text{it be empty}]\!]^{w'})$

b. $\exists p$: $[p{=}\lambda w'.\ [\![\text{everyone in this room}]\!]^{w}([\![\text{outside}]\!]^{w'})]$ & $[\![\text{would}]\!]^{w}(p)(\lambda w'.\ [\![\text{it be empty}]\!]^{w'})$

Selected Refs. **Charlow, S. 2017.** The scope of alternatives: Indefiniteness and islands. *Linguistics & Philosophy.* **Dayal, V. 1994.** Scope Marking as Indirect Wh-Dependency. *Natural Language Semantics.* **von Fintel, K., and I. Heim. 2011.** *Intensional semantics*. Lecture notes, MIT. **Fox, D. 2012.** The Semantics of Questions. Lecture notes, MIT. **Heim, I. 2012.** Functional readings without type-shifted noun phrases. Ms., MIT. **Keshet, E. 2011.** Split intensionality: a new scope theory of *de re* and *de dicto*. *Linguistics & Philosophy*.