

# Intervening and non-intervening Interference

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## Intrusion Effects

- Negative Polarity Items (NPIs) require the presence of a structurally inappropriate licenser to be well formed.

**Licensing** No man who had a beard was ever happy.  
**Intrusion** A man who had no beard was ever happy.  
**Violation** A man who had a beard was ever happy.

- Structurally inappropriate licensors have been found to drive Intrusion Effects (grammaticality illusion) using a variety of experimental methods [1; 3; 4; 5; 2].
- The current web-based self-paced reading/judgment study examines previously untested possible intrusion configurations in Turkish.

## Intrusion in Turkish: Previous Findings

ERP evidence:

Critical conditions in [6]			
<b>Licensing</b>	<b>Kimse</b>	Ali'nin çalıştığını söyle <u>medi</u> bana	
	NPI	[ES EV]	MV.NEG
<b>Intrusion</b>	<b>Kimse</b>	Ali'nin çalışmadığını söyledi bana	
	NPI	[ES EV.NEG]	MV
<b>Violation</b>	<b>Kimse</b>	Ali'nin çalıştığını söyledi bana	
	NPI	[ES EV]	MV

Findings of Intrusion in [6]:

- ERP response profiles of Intrusion strongly resemble those of local licensing condition of embedded NPIs:
  - Both conditions attenuated N400 effects otherwise observed for embedded negation. Both conditions elicited similar LAN profiles.
- Intrusion induced complete attenuation of main verb violation P600 effects that unlicensed conditions elicited.
- Intrusion condition demonstrated acceptance rates in EoS judgment in between licensing and violation conditions.

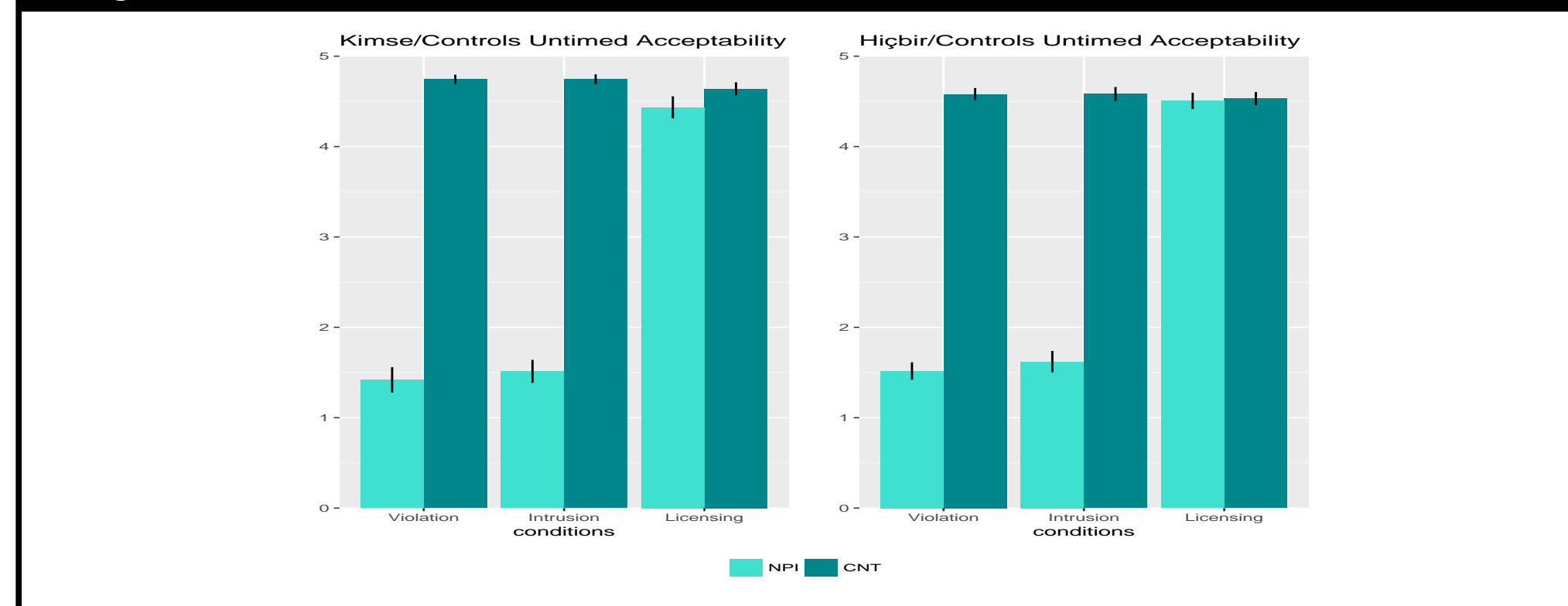
## Present Study

- Research questions:
  - What is the sensitivity of intrusion effects for context manipulations?
  - Can intrusion effects be turned on/off by target manipulations?
  - What are the experimental task effects for intrusion effects?
- Context manipulation: Complementation (Exp.1&2) vs Relativization (Exp.3)
- Target manipulation: Pronominal NPI (*kimse*) vs Determiner NPI (*hiçbir*) (Exp.1&2)
- Tast effects: Time-insensitive measures (Exp.1) vs time-sensitive measures (Exp.2&3)

## Experiment 1: Untimed task

- Replication of [6] with the addition of determiner NPI (*hiçbir*) conditions (see the tables under Exp. 2).
- Web-based (Ibex Farm). 38 Turkish native speakers (21 F; mean age=29.5, SD = 5.2)

Figure 1: Untimed acceptability judgment task results



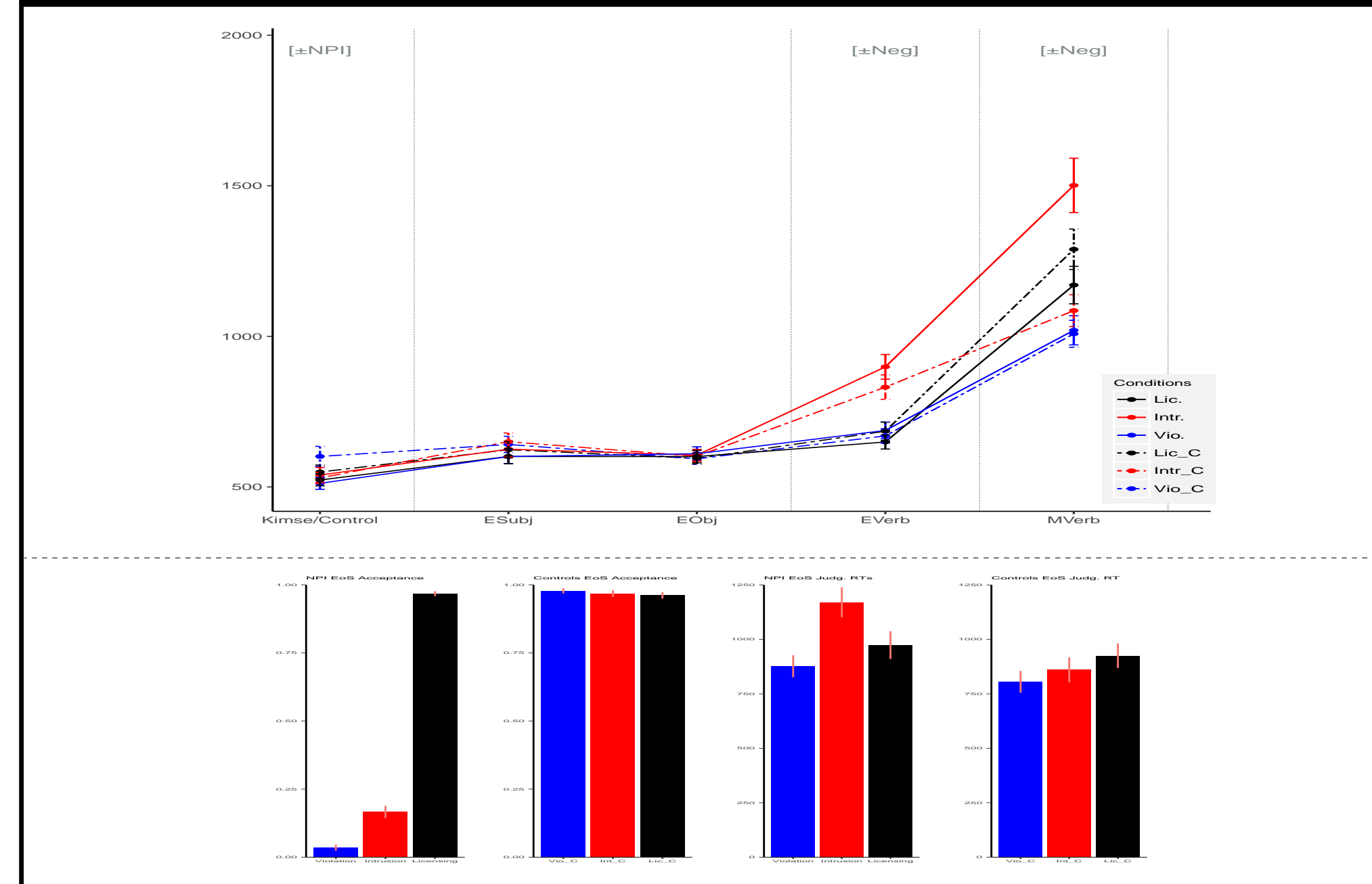
## Experiment 2: Intervening interference

Web-based (Ibex Farm software) Self-paced reading with EoS acceptability judgment task. 2x2x3 design with 6 items per condition. 72 sets of items for critical/control conditions + 48 Filler items= 120 sentences, half ungrammatical. 67 Turkish native speakers (35 F; mean age=29.8, SD=5.4)

### Pronominal NPI & Control conditions

	Regions				
	NPI/Cont.	ESubj	EObj	EVerb	MVerb
<b>Licensing</b>	Kimse/Esra, Eren'in elmayı yediğini				gördü.
	Anybody/Esra Eren-G apple-A eat-FN-AG-A				see-NEG-P.3SG
	'Anybody/Esra did not see that Eren ate apple.'				
<b>Intrusion</b>	Kimse/Esra, Eren'in elmayı yemediğini				gördü.
	Anybody/Esra Eren-G apple-A eat-NEG-FN-AG-A				see-P.3SG
	**Anybody/Esra saw that Eren did not eat apple.'				
<b>Violation</b>	Kimse/Esra, Eren'in elmayı yediğini				gördü.
	Anybody/Esra Eren-G apple-A eat-FN-AG-A				see-P.3SG
	**Anybody/Esra saw that Eren ate apple.'				

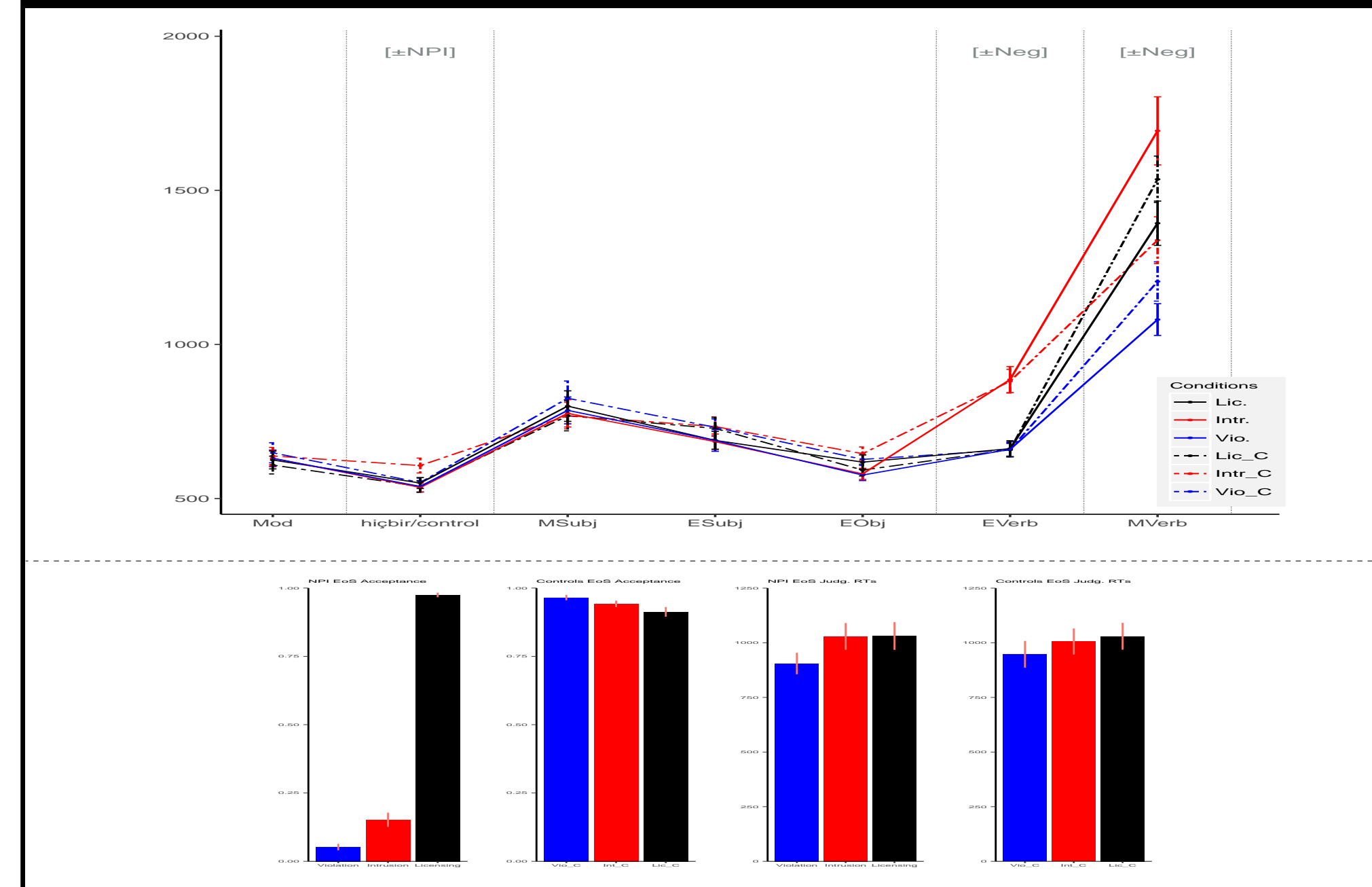
Figure 2: Kimse SPR & EoS judgment task results



### Determiner NPI & Control conditions

Regions							
	Mod	NPI/Cont.	MSubj	ESubj	EObj	EVerb	MVerb
Licensing	Okuldaki hiçbir/yeni öğrenci, Eren'in elmayı yediğini						görmedi.
	School-L-P any/new student Eren-G apple-A eat-FN-AG-A						see-NEG-P.3SG
	'Any/new student at the school did not see that Eren ate apple.'						
Intrusion	Okuldaki hiçbir/yeni öğrenci, Eren'in elmayı yemediğini						gördü.
	School-L-P any/new student Eren-G apple-A eat-NEG-FN-AG-A						see-P.3SG
	*Any/new student at the school saw that Eren did not eat apple.'						
Violation	Okuldaki hiçbir/yeni öğrenci, Eren'in elmayı yediğini						gördü.
	School-L-P any/new student Eren-G apple-A eat-FN-AG-A						see-P.3SG
	*Any/new student at the school saw that Eren did not eat apple.'						

Figure 3: Hiçbir SPR & EoS judgment task results



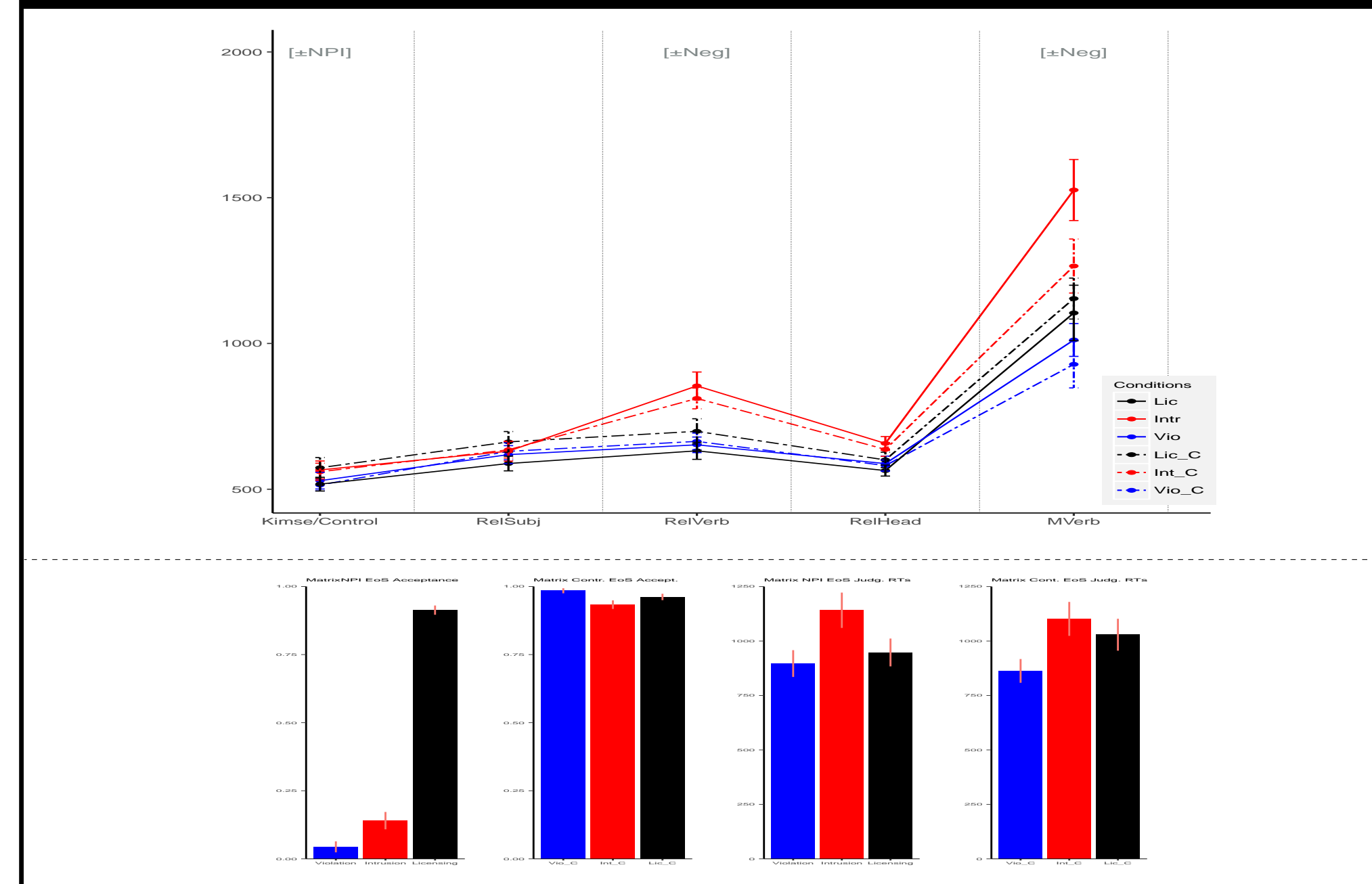
## Experiment 3: Intervening & Non-intervening interference

Same as Exp.2 in terms of method & # of materials. 53 Turkish native speakers (29 F; mean age=25.1, SD=5.4)

### Matrix NPI & Control conditions

	Regions			
	NPI/Cont.	RelSubj	RelVerb	MVerb
<b>Licensing</b>	Kimse/Esra, Eren'in yıkadığı		elmayı	yemedi.
	Anybody/Esra Eren-G wash-FN-AG		apple-A	eat-NEG-P.3SG
	'Anybody/Esra did not eat the apple Eren washed.'='Nobody ate ...'			
<b>Intrusion</b>	Kimse/Esra, Eren'in yıkamadığı		elmayı	yedi.
	Anybody/Esra Eren-G wash-NEG-FN-AG		apple-A	eat-P.3SG
	**Anybody/Esra ate the apple Eren did not wash.'			
<b>Violation</b>	Kimse/Esra, Eren'in yıkadığı		elmayı	yedi.
	Anybody/Esra Eren-G		wash-FN-AG-A	see-P.3SG
	**Anybody/Esra ate the apple Eren washed.'			

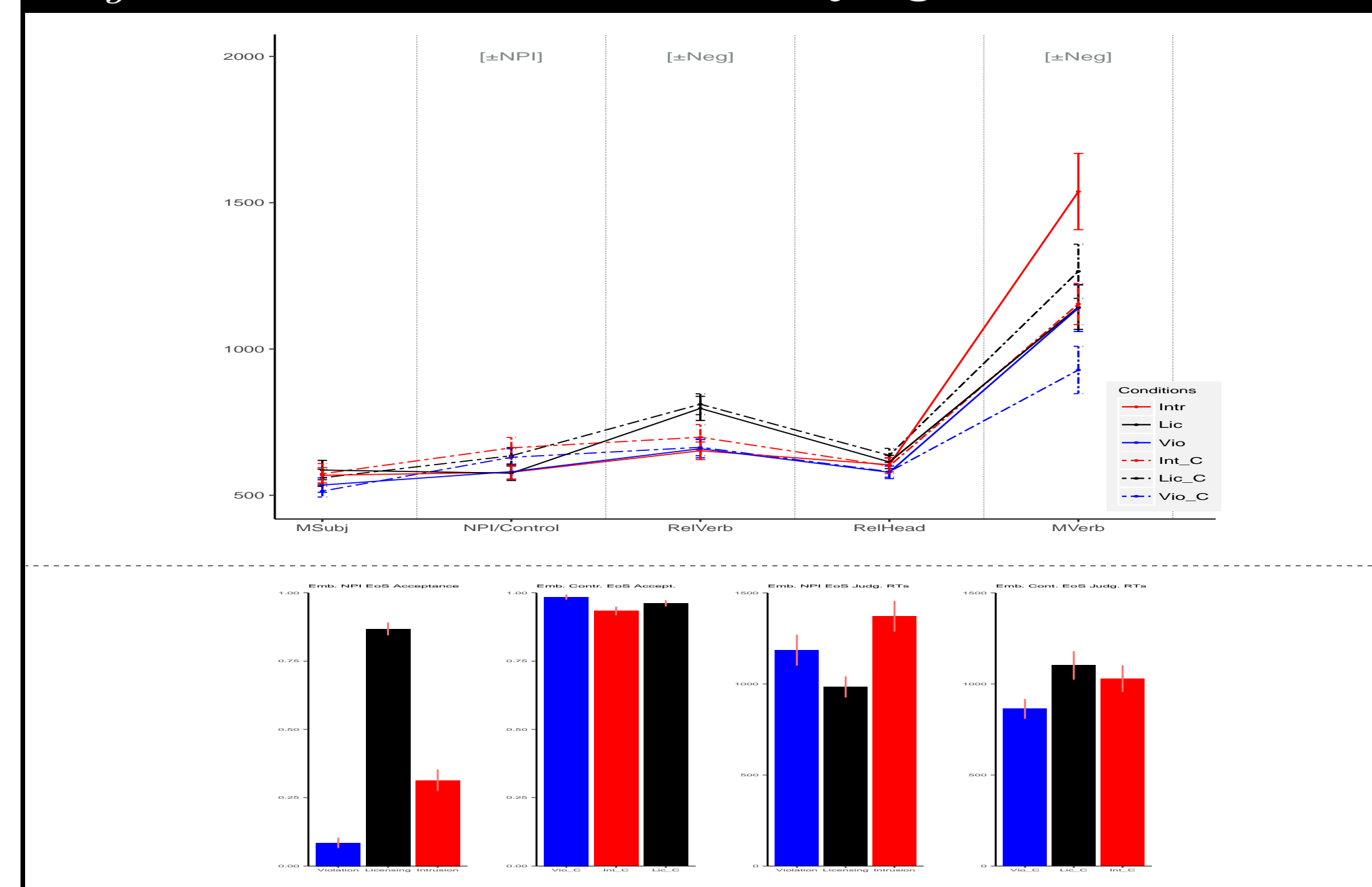
Figure 4: Matrix NPI SPR & EoS judgment task results



### Embedded NPI & Control conditions

	Regions			
	MSubj	NPI/Cont.	RelVerb	MVerb
<b>Intrusion</b>	Esra,	kimsenin/Eren'in yıkadığı	elmayı	yemedi.
	Esra anybody/Eren-G	eat-FN-AG	apple-A	eat-NEG-P.3SG
	'Esra did not eat the apple *anybody/Eren washed.'			
<b>Licensing</b>	Esra,	kimsenin/Eren'in yıkamadığı	elmayı	yedi.
	Esra kimsenin/Eren-G	eat-NEG-FN-AG	apple-A	eat-P.3SG
	'Esra ate the apple anybody/Eren did not wash.'			
<b>Violation</b>	Esra,	anybody/Eren'in yıkadığı	elmayı	yedi.
	Esra anybody/Eren-G	apple-A	eat-FN-AG-A	see-P.3SG
	'Esra ate the apple *anybody/Eren washed.'			

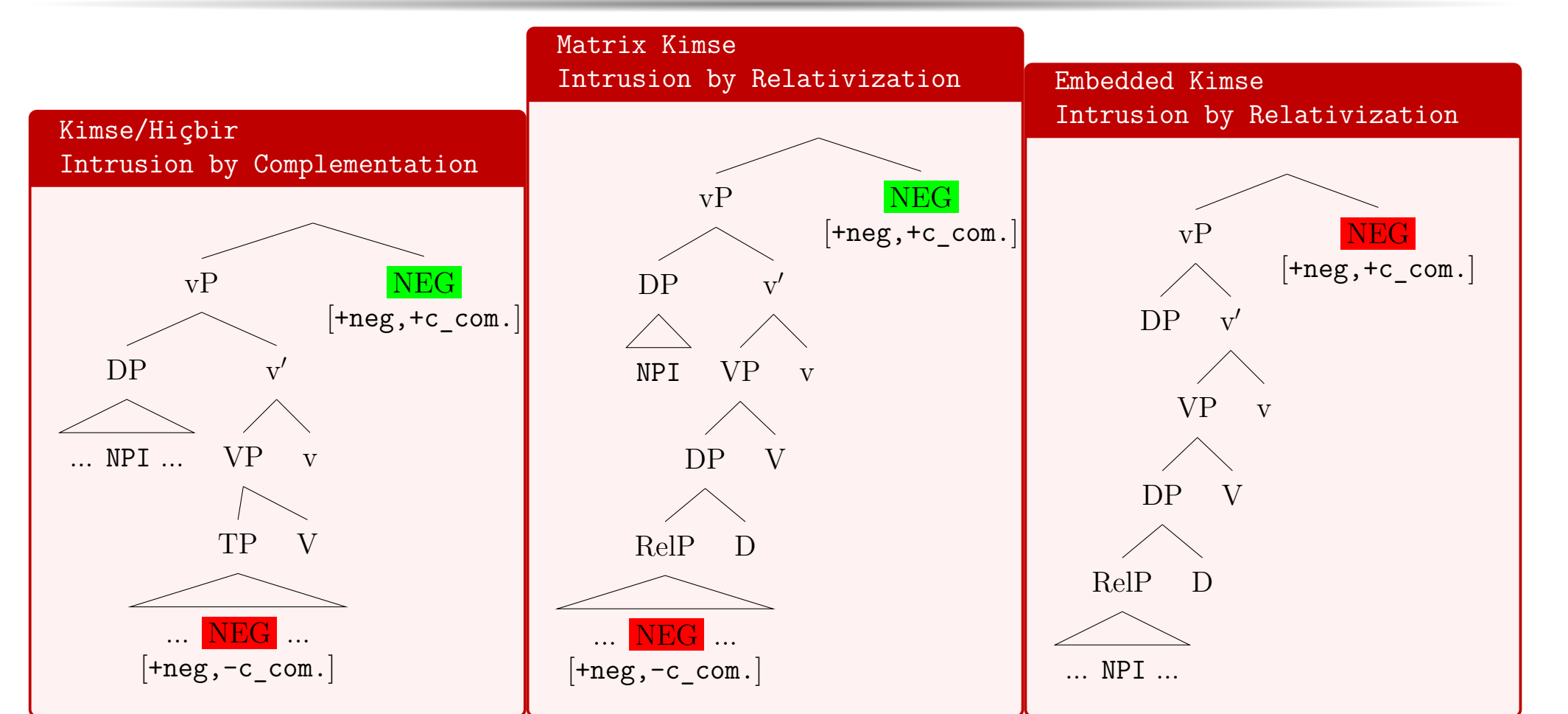
Figure 5: Emb. NPI SPR & EoS judgment task results



## Summary

- To our knowledge, intrusion effects have been observed for the first time in contexts when the interference occurs in a non-intervening position (Fig. 5).
- Main effect of negation at the embedded verbs (Fig.2-5).
- Intrusion effect was observed in categorically two different NPIs for the first time (Fig. 2/3).
- EoS judgments show strong indication of intrusion in non-intervening interference cases.
- Experimental task is a significant factor in intrusion effects. Intrusion effects have only been observed in time-sensitive measures as also observed in [2].
- Online results of intrusion did not pattern with the licensing cases, contra the findings in [2]
- Intrusion effects were evident in EoS acceptance judgments (Fig. 5).

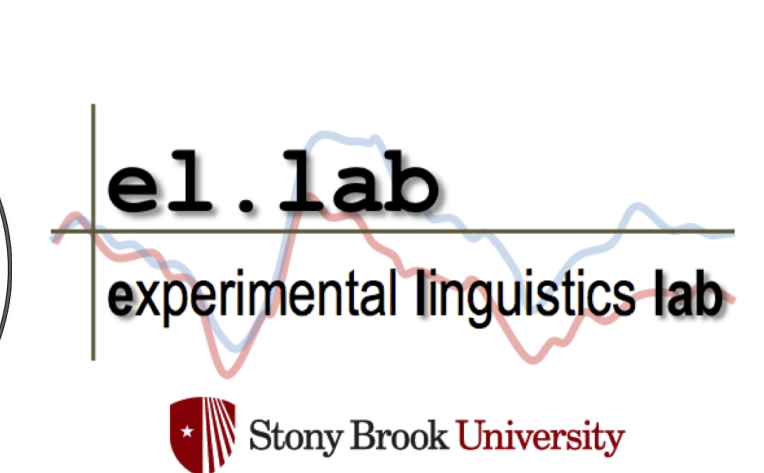
## Discussion



- Licensing prediction is triggered only after NPI is processed in prospective licensing contexts.
- Processing of NPI licensing is closely connected to the structural variability. There is a locality requirement when an NPI occurs in a RC, no such requirement was observed in cases when NPIs occur in a complement clause (see [6])
- Intrusion effects have been observed in environments where the illicit licenser occurred in a structurally higher position (Embedded Kimse case).
- The presence of a licenser with [+neg] and [+c\_command] features [3] does not guarantee a successful parsing of NPI licensing.

## References & Acknowledgments

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