

# Online Data Collection for the Description of Shifted Indexicals in Turkish

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# Indexicals and Shifted Indexicals

{I, you, today, here, ...}

**Non-shifted indexicals** refer to parameters of actual context:

(1) Peter believes [ that I am cooking fish ].

a.  $\llbracket I \rrbracket = \textit{deniz}$  actual speaker

b.  $\llbracket I \rrbracket \neq \textit{peter}$  \*attitude holder

**Shifted indexicals** refer to matrix clause context

(2) Peter [ *pro* balık pişiriyor-um ] sanıyor.

Peter 1S fish cook-1S believes

Peter believes that 'I' am cooking fish.

a.  $\llbracket I \rrbracket = \textit{deniz}$  actual speaker, non-shifted

b.  $\llbracket I \rrbracket = \textit{peter}$  attitude holder, shifted

# Availability of Indexical Shifting

At least three Turkic languages have indexical shifting:

- ▶ Uyghur Shklovsky & Sudo 2013, Sudo 2010
- ▶ Turkish Gültekin Şener & Şener 2011, Özyıldız 2012
- ▶ Tatar Podobryaev 2014

Identify syntactic factors that affect availability of indexical shifting:

**Type of embedded clause:**

nominalizations vs. tensed clauses

**Pronominal expression:**

overt vs. dropped

**Subject case:**

accusative vs. nominative

# Nominalizations and Tensed Clauses

## Availability 1: Type of Embedded Clause

Tensed clauses allow shifting

- (3) Peter [ *pro* balık pişir-iyor-um ] sanıyor.  
Peter 1S fish cook-PRES-1S believes  
Peter believes that {I am / he is} cooking fish.

Nominalizations disallow shifting

- (4) Peter [ *pro* balık pişir-diğ-im-i ] sanıyor.  
Peter 1S fish cook-NMZ-1S-ACC believes  
Peter believes that I am cooking fish.

# Pronoun Expression and Subject Case

Availability 2: 'Indexical Type'

## Pronominal Expression

- (5) Peter [ben balık pişir-iyor-um ] sanıyor.  
Peter 1S.NOM fish cook-PRES-1S believes  
Peter believes that {I am / he is} cooking fish.

- ▶ Gültekin Şener & Şener → “Expression blocks shifting”,
- ▶ Maybe just a difficult judgment?
- ▶ (Expression in Tatar blocks shifting, it does not in Uyghur.)

## Accusative subjects don't shift

- (6) Peter [ben-i balık pişir-iyor-um ] sanıyor.  
Peter 1S-ACC fish cook-PRES-1S believes  
Peter believes that {I am / \*he is} cooking fish.

# Online Data Collection

## Why?

- ▶ More speakers,
- ▶ Subtle contrasts.

## What?

- ▶ Existence:  
Can the phenomenon be shown to affect at least some indexicals?  
Which ones?
- ▶ Exploration:
  - ▶ What factors affect the availability of indexical shifting? to what extent?
  - ▶ What happens when there is more than one indexical in a shifting environment?

# The Right Test Items

## How to Indicate Coreference?

Some previous studies use **non linguistic signs** to indicate coreference:

(7) HANNA found a picture of HER. Keller & Asudeh (2001)

(8) +Daddy+ will put on suntan lotion to keep +himself+ from getting sunburned. Collins et al. (2009)

**Practical issue** with non-linguistic signs:

(9) a. +Peter+ +*pro*+ balık pişiriyorum sanıyor.

b. +Peter+                      balık pişiriyor+um+ sanıyor.  
Peter                      1s            fish    cook-1s                      believe

**Solution:** Question Answer pairs.

# Why Question Answer Pairs?

## 1. Questions as syntactic controls

Indexicals refer to non-actual contexts in **quoted environments**.

(10) Peter said: “I am cooking fish.”

*Wh*- extraction rules out quotation.

(11) a. \*What did Peter say: “I am cooking \_\_\_”?

b. What did Peter say that I was cooking \_\_\_?

In Turkish, shifting available with *wh*- extraction: not quotation.

(12) Peter [*pro* ne pişiriyor-um] dedi?

Peter 1s what cook-1s said

What did Peter say that {I / he} was cooking?

The question places the indexical in a controlled syntactic environment.



# Why Question Answer Pairs

## 2. Answers fix an indexical's reference

Participant A says:

- (13) Peter [*pro* ne pişiriyor-um] sanıyor?  
Peter 1s what cook-1s believes  
What does Peter believe that {I / he} am cooking?

Participant B replies:

- (14) *pro* balık pişiriyormuş-sun.  
2s fish cook-2s  
You're cooking fish.

→ **unshifted** reading

Or, participant B replies:

- (15) *pro* balık pişiriyormuş-∅.  
3s fish cook-3s  
He's cooking fish.

→ **shifted** reading

The answer indirectly fixes the indexical's reference.

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<sup>1</sup>Independent properties of *pro* ensure that it doesn't refer to a discourse external entity.

# Materials and Participants

- ▶ Three (sub-)experiments
  1. Effect of indexical type on shifting,
  2. Shift Together,
  3. Temporals and Locatives. (not part of this talk)
- ▶ Platform: Ibex Farm Alexander Drummond
- ▶ Participants:
  - ▶ N=42,
  - ▶ recruited online,
  - ▶ no compensation.
- ▶ Items
  - ▶ 1 item per condition (!),
  - ▶ only the matrix verb 'san-', *believe*.
- ▶ Task:

'How natural are these dialogues, on a scale from 0 to 9?'

# Experiment 1

## Methods

### **Research question:**

Effect of subject indexical type on availability of shifted readings.

### **Indexical Type:**

{dropped, overt NOM, overt ACC}

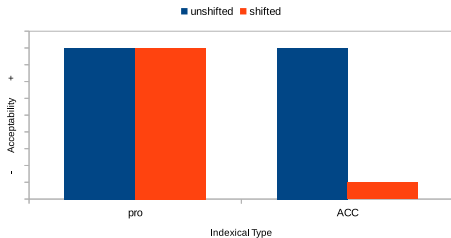
### **Reading Type:**

{shifted, unshifted}

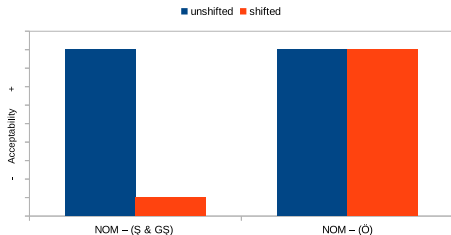
# Experiment 1

## Predictions

### Common Predictions for *pro* and (overt) ACC

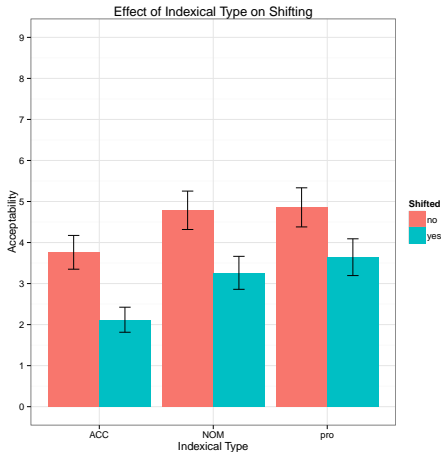


### Different Predictions for (overt) NOM



# Experiment 1

## Results



Significant cost associated with:

- ▶ Shifting,
- ▶ ACC subjects.

No interaction found.

Ratings low in general.

# Experiment 1

## Discussion

### ▶ **Pronoun Expression**

- ▶ If pronoun expression blocks shifting, the contrast between NOM x unshifted and NOM x shifted is predicted, but none between *pro* x unshifted and *pro* x shifted.
- ▶ This means, shifting is degraded overall. The result consistent with pronoun expression not blocking shifting, in Turkish.

### ▶ **Accusative Subjects**

- ▶ Only ACC x shifted was predicted to be degraded, not ACC x unshifted,
- ▶ But overall degradation associated with ACC subjects introduces a confound: Are ACC subjects banned from shifting, or are we simply seeing cost of shifting + cost of accusative subjects?

This cost is problematic: if subject case is a factor, we want to compare NOM subject and ACC subject embedded clauses. But, this might not be a minimal manipulation.

# Experiment 2

## Background

### General Question:

How many readings are available for *two* indexicals in a shifting environment?

(1) Subject [ ... Indexical 1 ... Indexical 2 ... ] Verb

At most four:

1. Neither indexical shifts,
2. Both indexicals shift,
3. Only Indexical 1 shifts,
4. Only Indexical 2 shifts.

### Specific Question:

Does 'Shift Together' hold in Turkish?

**Shift Together:** Either both indexicals shift 'together', or neither does.

Anand & Nevins 2004

# Experiment 2

## Methods

### Question reformulated:

Does the shifting of one indexical affect the shifting of another?

### Clause Type

{Nominalized (shifting banned), Tensed (shifting ok)}

### Subject Indexical:

*pro*

{Shifted, Unshifted}

### Object Indexical:

*pro* possessor in object possessive

{Shifted, Unshifted}

### Example

pseudo Turkish

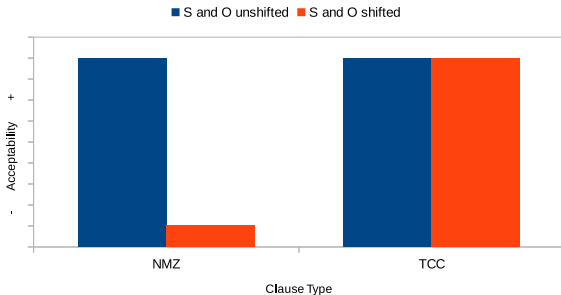
- (2) a. Who does Peter believe that <I> sold <my> car to.  
b. He<sub>shifted</sub> sold your<sub>unshifted</sub> car to Bill.



# Experiment 2

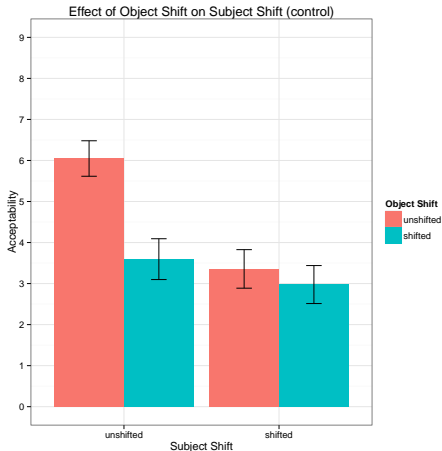
## Predictions

**Minimal desideratum:** For the 'shift together' readings, the following pattern should obtain.



# Experiment 2

## Results: Control Conditions

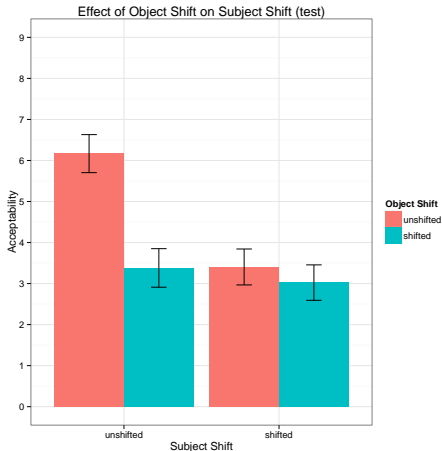


Intuition: In 'nominalized' clauses, no shifting available.

Result:  
Attempt to shift an indexical results in degradation.  
(expected)

# Experiment 2

## Results: Test Conditions



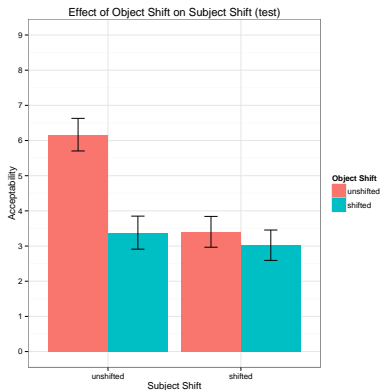
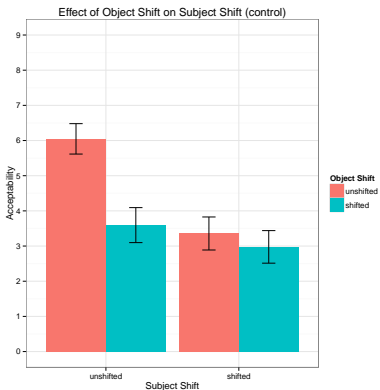
Intuition: In 'tensed' clauses, shifting available.

Result:  
Attempt to shift an indexical results in degradation.  
(unexpected)

# Experiment 2

## Comparison and Discussion

Apparently, no difference detected across the two clause types.



The pattern is that of a non-indexical shifting language?

## Concluding Remarks

The results do reflect some intuitive results.

- ▶ Acceptability of non-shifted readings,
- ▶ Degradation associated with accusative subject complements

But it appears to reveal something new:

- ▶ Degradation associated with indexical shifting.

This creates a confound.

- ▶ Status of ACC x shifted,
- ▶ Shift Together.

We need a finer grained investigation method → Forced choice task?

# References

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