**INTRODUCTION**

**BACKGROUND**

- Psycholinguistic investigation of scrambling in ditransitives is important:
  1. It would help distinguish between the competing theories of grammar and solve unsolved problems in linguistics (e.g., Kozumi & Tanaka, 2004).
  2. It would contribute to characterization of universal principles and constraints of the human sentence processing (e.g., Miyamoto & Takahashi, 2004; Present study is concerned with this view).

**PREVIOUS STUDIES IN JAPANESE**

- Both case markers and animacy are related to processing of ditransitives
  - Canonical: Waitress-NOM cashier-DAT cook-ACC introduced.
  - Scrambled: Waitress-NOM cook-ACC cashier-DAT introduced.
    - ‘The waitress introduced the cook to the cashier.’
  - [NOM>DAT>ACC] was read faster than [NOM>ACC>DAT].
  - Filler-gap dependency makes the processing of scrambling harder
  - The grammatical information from case markers is important.

- Sakai et al. (2009)
  - Canonical: Mother-NOM sauce-ACC ketchup-DAT mixed.
  - Scrambled: Mother-NOM sauce-DAT ketchup-ACC mixed.
    - ‘Mother mixed the ketchup into the sauce.’
  - LAN (left anterior negativity) was elicited at ketchup-ACC.
  - [NOM>ACC>DAT] was easier to process than [NOM>DAT>ACC].
  - The semantic information from animacy is also important.

**REMAINING QUESTION**

- Are the effect of case markers and animacy specific to Japanese, or are they more general processing constraints, and affect the processing of ditransitives in other languages?
- We attempted to answer this question by processing of Turkish ditransitives.

**EXPERIMENTS**

- **EXPERIMENT 1** [Possessor goal]
  - Aim: To examine how canonical and scrambled ditransitives with possessor goal (animate DAT-noun) are processed in Turkish
  - Participants: 52 Native speakers of Turkish at Çanakkale Onsekiz Mart U.
  - Materials: 20 set of targets with show type verbs & 82 fillers (Lat Sqr Des)
  - Results: 1a Can-close: Siyasetçi seçimden önce vali-ye ilpî-ye tan B. 1b Scr-close: Siyasetçi seçimden önce ilpî-ye vali-ye tan B. 1c Can-far: Siyasetçi vali-ye gov.-DAT seçimden önce town-ACC introduced tan B. 1d Scr-far: Siyasetçi ilpî-ye seçimden önce gov.-DAT town-ACC introduced tan B. ‘I heard that the politician introduced the town to the government before election.’

- **EXPERIMENT 2** [Locative goal]
  - Aim: To examine how canonical and scrambled ditransitives with locative goal (animate DAT-noun) are processed in Turkish
  - Participants: Identical to Experiment 1
  - Materials: 20 set of targets with pass type verbs & 82 fillers (Lat Sqr Des)
  - Results: 2a Can-close: Kurye şatadan önce upaç-a-a plan-DATE delivered plan-DAT delivered. 2b Scr-close: Kurye şatadan önce upaç-a-a plan-DAT delivered. 2c Can-far: Kurye şatadan önce upaç-a-a plan-DAT delivered. 2d Scr-far: Kurye şatadan önce upaç-a-a plan-DAT delivered. ‘I heard that the courier delivered the package to the plane before noon.’

**GENERAL DISCUSSION & CONCLUSIONS**

1. **How are two types of canonical and scrambled ditransitives processed in Turkish?**
   - [EXPERIMENT 1]: When the DAT-noun was animate (possessor goal);
     - [NOM>DAT>ACC] was read faster than [NOM>ACC>DAT].
   - [EXPERIMENT 2]: When the DAT-noun was inanimate (locative goal);
     - [NOM>ACC>DAT] was read faster than [NOM>DAT>ACC].
   - Results are in line with Öztürk (2004)’s analysis of canonical word orders of ditransitives in Turkish.

2. **Evaluation of the effect of case markers and animacy in Turkish**
   - Results are also in line with filler-gap dependencies (Miyamoto & Takahashi, 2002, 2004).
   - Case markers alone cannot be responsible for the results, because...

**MAJOR FINDINGS**

- [EXPERIMENT 1] When the DAT-noun was animate (possessor goal):
  - [NOM>DAT>ACC] was read faster than [NOM>ACC>DAT] order.
- [EXPERIMENT 2] When the DAT-noun was inanimate (locative goal):
  - [NOM>ACC>DAT] was read faster than [NOM>DAT>ACC] order.

**CONCLUSIONS**

- Both case markers and animacy have an impact on the processing of canonical and scrambled ditransitives in Turkish as well, and they are general processing constraints (not specific to Japanese).