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## Abstract

This work is part of ongoing research work that focuses on the linguistic analysis and computational description of five different Sign Languages (SLs), namely Irish Sign Language (ISL), Flemish Sign Language (VGT), Dutch Sign Language (NGT), Spanish Sign Language (LSE), and British Sign Language (BSL) as part of the SignON project. This work will be leveraged to inform the development of SL lexicon entries for a Sign Language Machine Translation (SLMT) system. In particular, this research focuses on ISL. We investigate the existence of constructions similar to or equivalent in functionality to gerunds in spoken language, in particular, English. The initial findings indicate that such constructions do indeed exist and that they can take many forms.

## Methodology

- We use Signs of Ireland Corpus (SOI) within this research work.
- We use ELAN (EUDICO Linguistic Annotator) to view the SOI Corpus.
- Glosses are provided in block capitals and are used to reflect the meaning of a sign or multiple signs in a spoken language [1].
- We conduct a manual approach for the investigation of gerunds within the data.

## Gerunds as Linguistic Phenomena

- Gerunds in English present themselves with the suffixation -ing at the end of a verb. Example 1 provides an example of a gerund, where the verb 'play' includes the suffixation -ing.

### Example 1

"Playing basketball takes up too much of her time."

- One of the challenges is that present participle and past progressive also use -ing suffixation. Furthermore, some verbal nouns and deverbal nouns use -ing as one of many forms for nominalisation purposes.

## Findings

- The initial results within this body of work show that gerund constructions in ISL are present through the following:
- Gerunds and complex constructions

### Example 2

JEEP-HITS-UNDER-CAR JEEP-LIFTS-CAR

"The jeep hit the car, lifting it up"

SOI Corpus Nicholas (22) personal stories (Wexford)



## Findings

- Gerunds and reduplication of the verb

### Example 3

CONTINUE+ COME-OVER LICK-DRINK LICK++++ INDEX+c DRINK

"(The dog) came over again, licking my drink."

SOI Corpus Eilish (10) Personal Stories (Dublin)



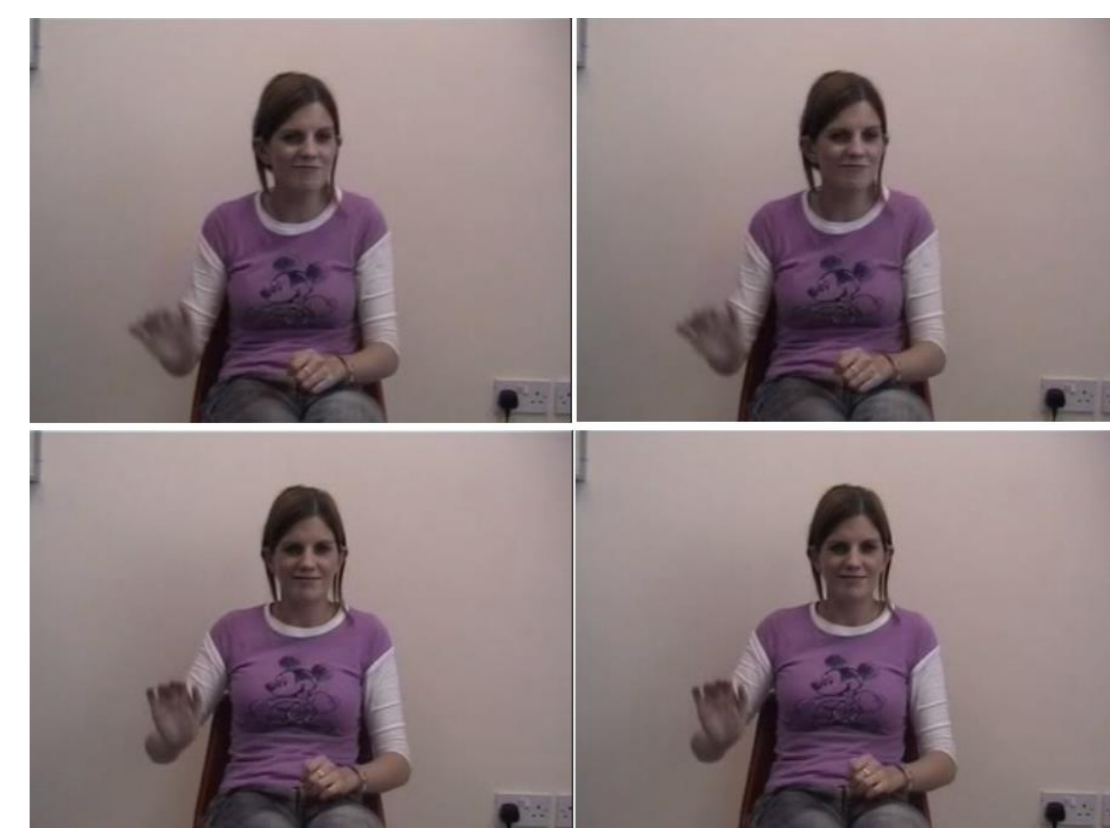
- Gerunds and the citation form of the verb

### Example 4

CONTINUE BASKETBALL PLAY

"Continue playing basketball."

SOI Corpus Caroline (15) Personal Stories (Dublin)



## Conclusions and Future Work

- Initial findings indicate that such constructions do exist in ISL.
- Gerund constructions in ISL may be articulated through complex constructions, the reduplication of a verb, and the citation form of a verb.
- There are many challenging obstacles with regard to identifying gerund constructions in SL.
- Future work will focus on gathering more evidence with regard to these linguistic phenomena within SL.

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