

“MACHINE TRANSLATION IS A LOT LIKE  
BOOZE:”  
LANGUAGE INSTRUCTORS’ BELIEFS ABOUT  
MACHINE TRANSLATION

Kimberly Vinall & Emily Hellmich  
Berkeley Language Center  
February 7, 2020



[Photo credit: TranslateMedia](#)

# MACHINE TRANSLATION MECHANICS

# MACHINE TRANSLATION: WHAT IT IS

## Machine Translation

GoogleTranslate

Bing Translator

DeepL



# MACHINE TRANSLATION: WHAT IT IS

## Machine Translation

GoogleTranslate

Bing Translator

DeepL

## Not Machine Translation

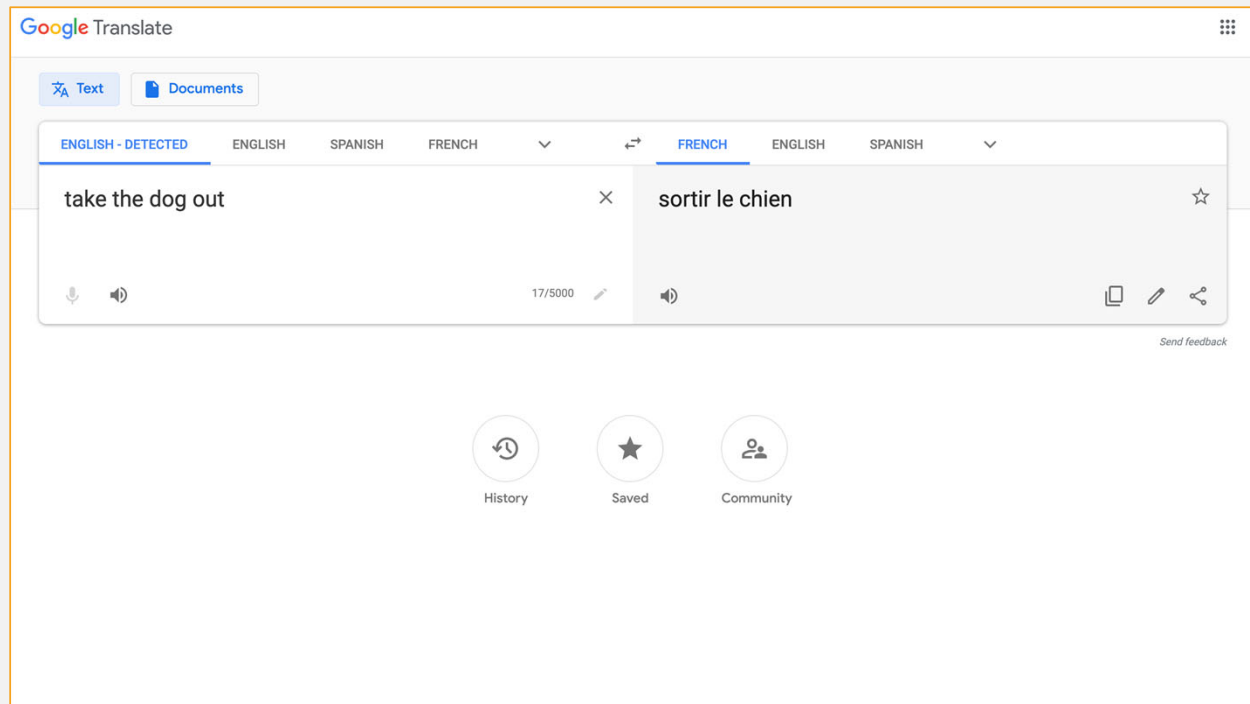
WordReference (online bilingual dictionary)

Linguee (data base of human translations)

Grammarly (AI-based editing)



# MACHINE TRANSLATION: WHAT IT IS



# MACHINE TRANSLATION: WHAT IT ISN'T

English-French

WordReference ne peut pas traduire cette expression, mais cliquez sur chacun des mots pour en voir la signification :

**take the dog out**

[définition](#) | [Synonymes anglais](#) | [collocations anglaises](#) | [Conjugaison \[FR\]](#) | [Conjugator \[EN\]](#) | [en contexte](#) | [images](#)

[in Context](#)

**WordReference** [Collins](#)

WordReference English-French Dictionary © 2020:

**Principales traductions**

Anglais		Français
<b>take [sth] ⇒ vtr</b>	(grab) She took the money and ran to the store. Elle a pris l'argent et a couru au magasin.	<b>prendre ⇒ vtr</b>
<b>take [sth] to [sth/sb] ⇒ vtr</b>	(transport, carry) He took the radio to his friend's house. Il a apporté (or: transporté) la radio chez son ami.	<b>apporter ⇒, transporter ⇒ vtr</b>
<b>take [sth] ⇒ vtr</b>	(accept, receive) Son ami lui a pris la télé.	<b>prendre ⇒ vtr</b>
<b>take [sth] vtr</b>	(steal) He didn't have the money to pay for the candy, so he just took it. Il n'avait pas l'argent pour s'acheter la friandise, alors il l'a simplement	<b>(voler) prendre ⇒ vtr</b>

out\*



# MACHINE TRANSLATION: HOW IT WORKS



## MACHINE TRANSLATION: HOW IT WORKS

“I don't think we should fight [machine translation]....But I think we should learn from it and educate ourselves on what is there, and what we're becoming because I'm sure that there are going to be innovations coming soon, and just be ready.”

-Amelia, Instructor of Italian (Interviewee)

## MACHINE TRANSLATION: HOW IT WORKS

“I don't think we should fight [machine translation]...But I think we should learn from it and educate ourselves on what is there, and what we're becoming because I'm sure that there are going to be innovations coming soon, and just be ready.”

-Amelia, Instructor of Italian (Interviewee)

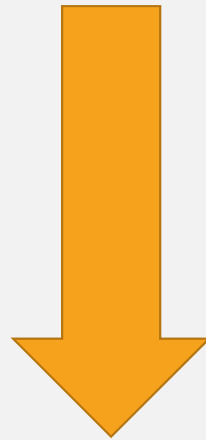
## MACHINE TRANSLATION: HOW IT WORKS

“I don't think we should fight [machine translation]....But I think we should learn from it and educate ourselves on what is there, and what we're becoming because I'm sure that there are going to be innovations coming soon, and just be ready.”

-Amelia, Instructor of Italian (Interviewee)

# MACHINE TRANSLATION: HOW IT WORKS

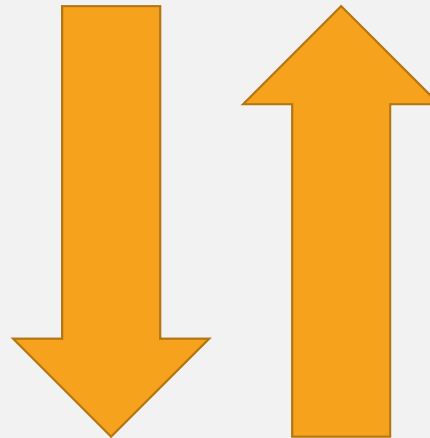
**Rule-Based & Statistical MT**



# MACHINE TRANSLATION: HOW IT WORKS


**Rule-Based & Statistical MT**

**Deep Learning MT**



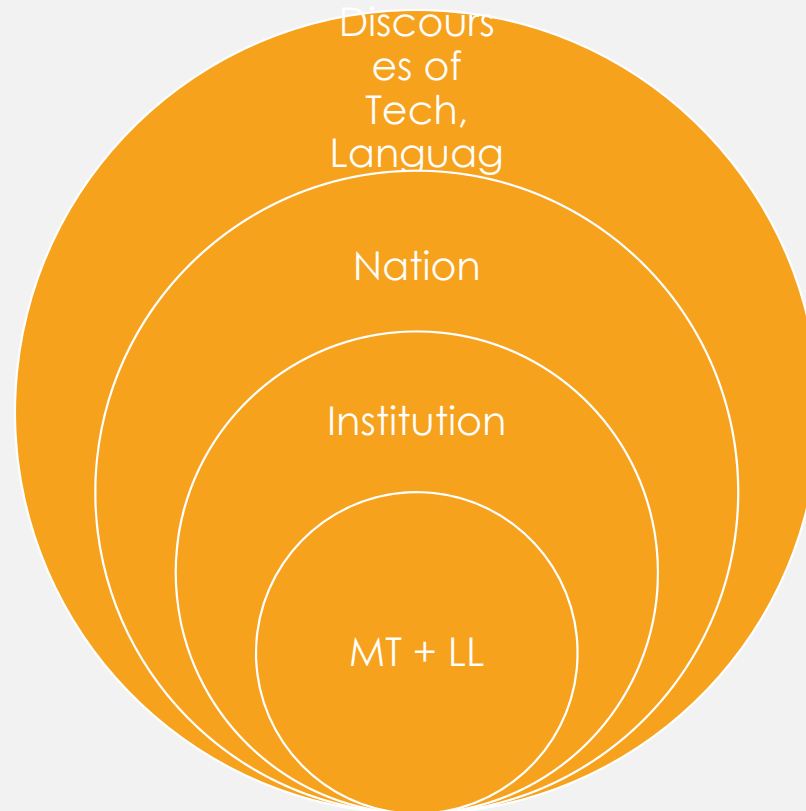
# MACHINE TRANSLATION & LANGUAGE LEARNING

# MACHINE TRANSLATION + LANGUAGE LEARNING



Instructor Beliefs	<ul style="list-style-type: none"><li>• Correa, 2011</li><li>• Clifford et al., 2013</li><li>• Knowles, 2016</li><li>• Niño, 2009</li></ul>
Student Beliefs	<ul style="list-style-type: none"><li>• Briggs, 2018</li><li>• Clifford et al, 2013</li><li>• Niño, 2009</li><li>• White &amp; Heidrich, 2013</li></ul>
Interventions	<ul style="list-style-type: none"><li>• O'Neill, 2016, 2019</li><li>• Tsai, 2019</li><li>• Niño, 2008</li></ul>

# MACHINE TRANSLATION + LANGUAGE LEARNING: A LARGER ECOLOGY





## LARGER RESEARCH PROJECT

- Update literature to reflect updated tools
- Expand sample and methods
- Extend domain of inquiry

# RESEARCH DESIGN

# PARTICIPANTS

## SURVEY

- N=165
  - Professional status
  - Language taught
  - Institution type

## INTERVIEWS

# PARTICIPANTS

## SURVEY

- N=165
  - Professional status
  - Language taught
  - Institution type

## INTERVIEWS

- N=11
  - Professional status
  - Language taught
  - Institution type

# DATA COLLECTION

## SURVEY

- Creation: FA2018
  - Demographic information
  - Sections on: acceptability, policies, student use and motivation, pedagogical potential, threat
- Distribution: SP2019
  - Round 1: targeted major LL organizations, individual universities across US
  - Round II: targeted underrepresented groups

## INTERVIEWS

- Selection Criteria
  - 12 themes from survey data
  - Survey respondents who embodied these themes
- Interviews
  - FA2019
  - Questions: theme-specific and general

# DATA ANALYSIS

## SURVEY

- Descriptive statistics (closed-ended questions)
- Iterative open-ended, axial coding (open-ended questions)
- Reliability measures: IRR, investigating outliers

## INTERVIEWS

- Iterative open-ended, axial coding
- Reliability measures: IRR, investigating outliers, looking for negative evidence

# FINDINGS

## DESCRIPTIVE RESULTS

### INSTRUCTOR PERCEPTIONS ON

- I. Why do students use MT?
- II. What is appropriate use of MT?
- III. What do students learn from MT?
- IV. Is MT a threat to the profession?



## WHY DO STUDENTS USE MT?

Most Prevalent	Less Prevalent but Salient	Less Prevalent
Lack of confidence	Desire to communicate	Desire to learn faster than course pace
Quick & convenient	Lack of time/busy	Outright cheating
Grades	Not motivated	Lack of awareness of MT limitations
	Not prepared/Don't understand	
	Using all resources available	

## WHY DO STUDENTS USE MT?

“I think that students put a lot of pressure on themselves for perfection. Students are **very hard on themselves** when they make mistakes, which is a hard adjustment to make for a language-learning classroom that is all about making mistakes and learning from them. **They're scared of people thinking they are stupid or not trying hard enough, even if they know they're working hard to understand.**”

-Survey participant

## WHY DO STUDENTS USE MT?

“I would guess a number of reasons: first, they want to be able to express their ideas and so are looking for a one-to-one translation of their thoughts; second, they feel immense pressure to get good grades, but don't have time to reflect about their writing practice; finally, they spend much of their time on their phones, so it is kind of second nature (and kind of a convenience) to use it for their coursework.”

## WHY DO STUDENTS USE MT?

“I would guess a number of reasons: **first, they want to be able to express their ideas and so are looking for a one-to-one translation of their thoughts**; second, they feel immense pressure to get good grades, but don't have time to reflect about their writing practice; finally, they spend much of their time on their phones, so it is kind of second nature (and kind of a convenience) to use it for their coursework.”

## WHY DO STUDENTS USE MT?

“I would guess a number of reasons: first, they want to be able to express their ideas and so are looking for a one-to-one translation of their thoughts; second, they feel immense pressure to get good grades, but don't have time to reflect about their writing practice; finally, **they spend much of their time on their phones, so it is kind of second nature (and kind of a convenience) to use it for their coursework.**”

## WHY DO STUDENTS USE MT?

“Mostly for convenience and availability, perhaps because being socialized to use it, out of habit.”

-Survey participant

## WHY DO STUDENTS USE MT?

Most Prevalent	Less Prevalent but Salient	Less Prevalent
Lack of confidence	Desire to communicate	Desire to learn faster than course pace
Quick & convenient	Lack of time/busy	Outright cheating
Grades	Not motivated	Lack of awareness of MT limitations
	Not prepared/Don't understand	
	Using all resources available	

WHAT IS APPROPRIATE STUDENT USE  
OF MT?



**SCENARIO A:** Students are completing a **writing** task in the target language. Students are using MT to translate from what they have personally written into the target language.

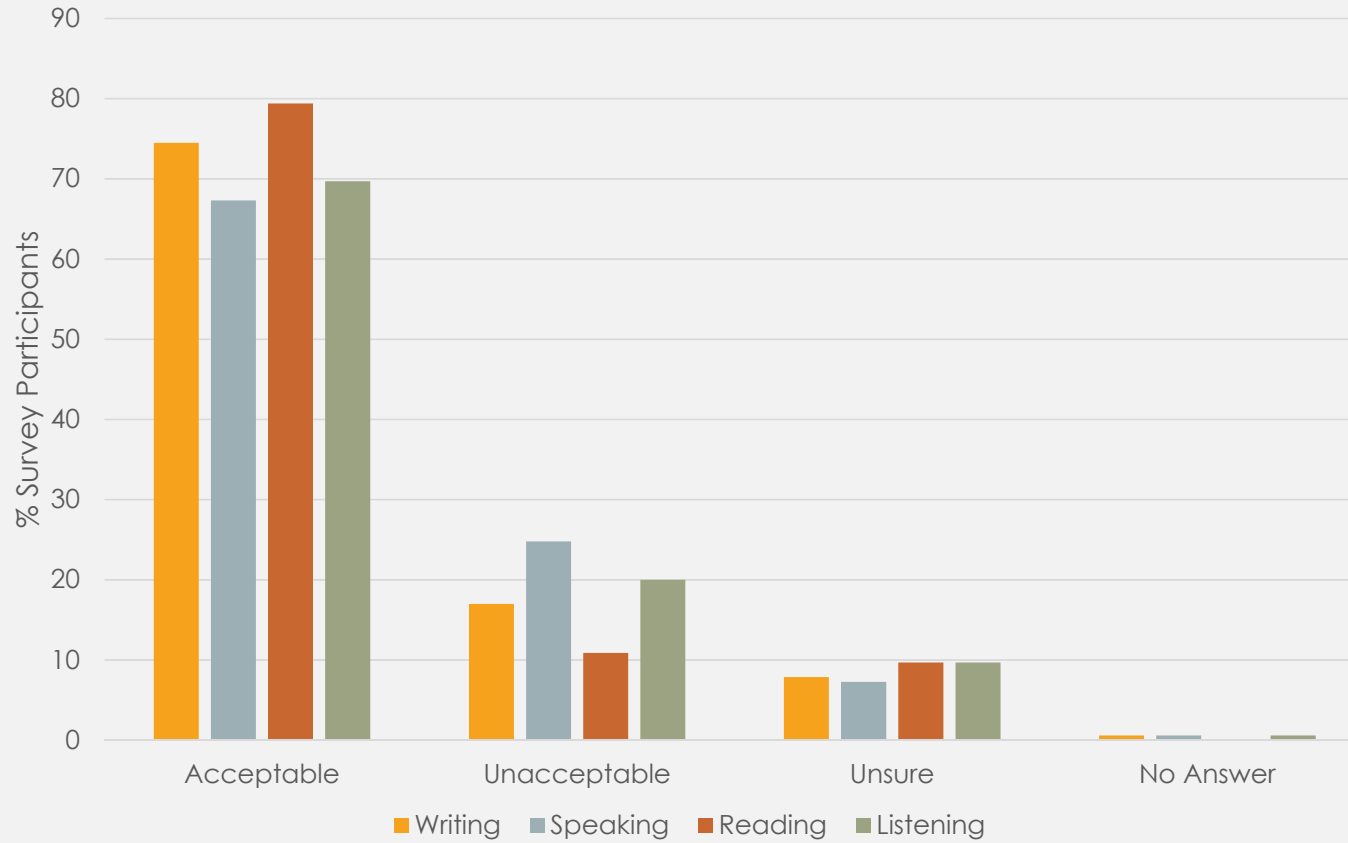
Assess the appropriateness of the following uses of MT for language students:

	Inappropriate	Acceptable	Unsure
To translate individual vocabulary words	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To translate phrases of 2 or more words	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To translate complete sentences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To translate complete paragraphs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To translate the entire task	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

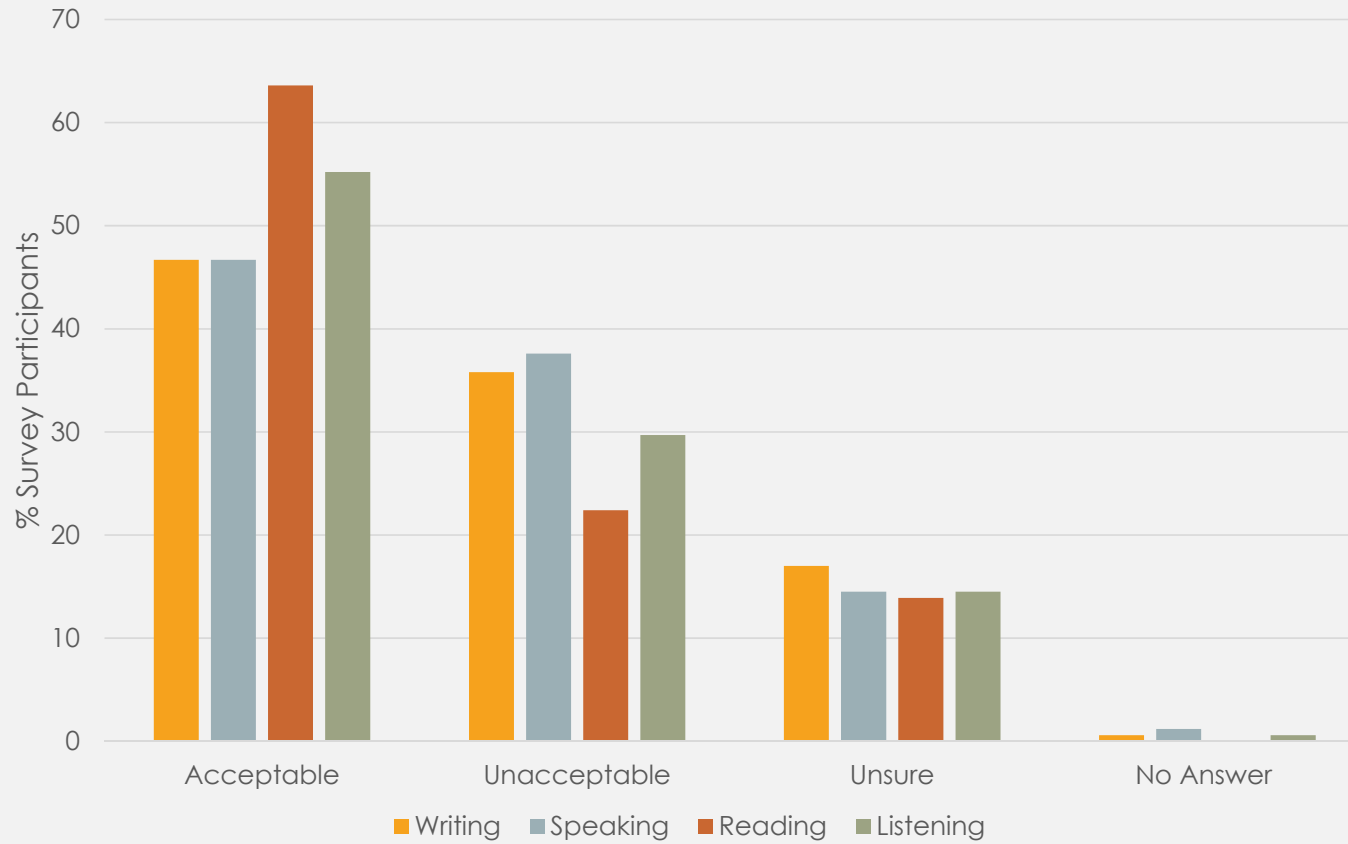
## WHAT IS APPROPRIATE STUDENT USE OF MT?

- MT was largely seen as appropriate for **individual words** and **phrases of 2+ words** (although less so) for reading, writing, listening, and speaking

## Individual Words



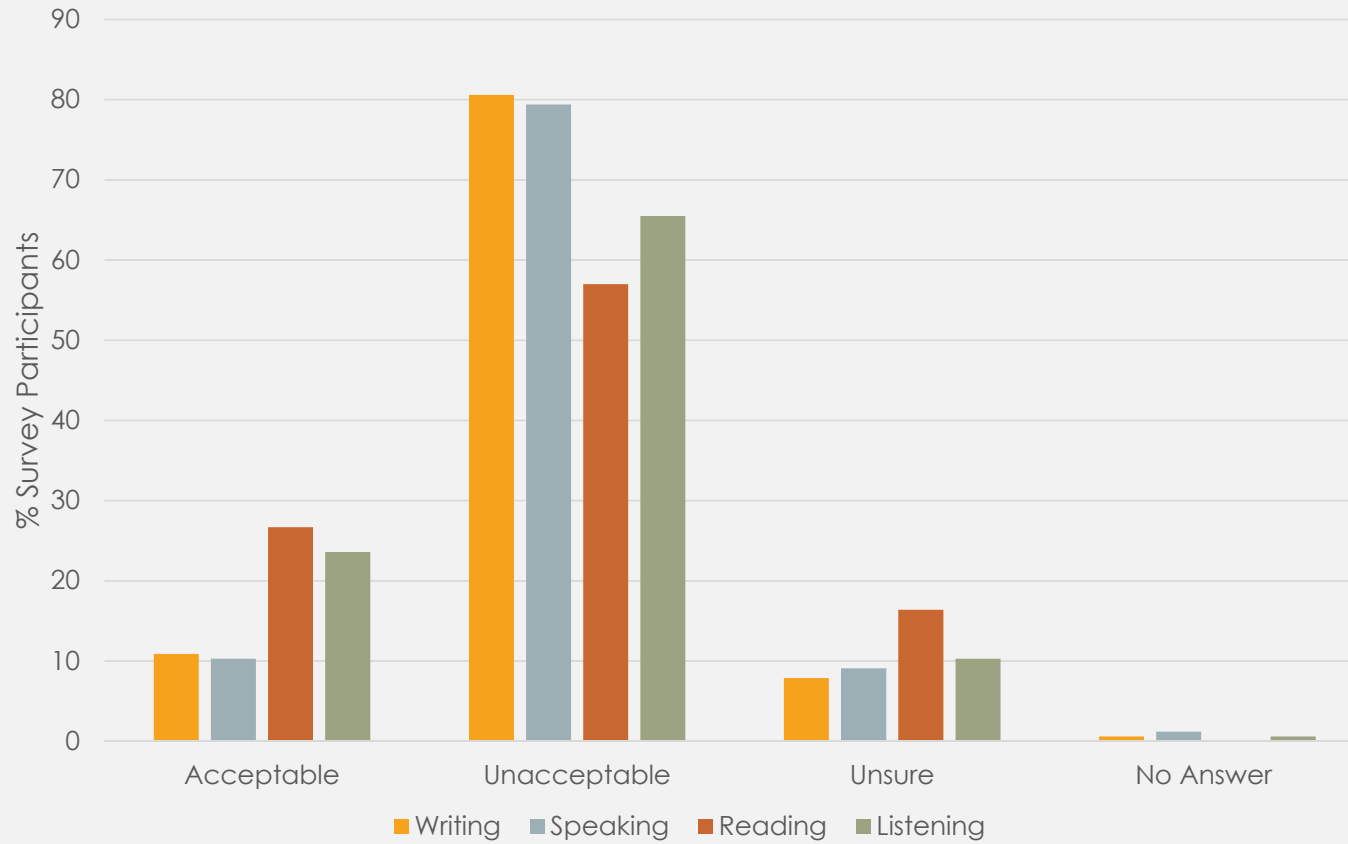
## Phrases 2+ Words



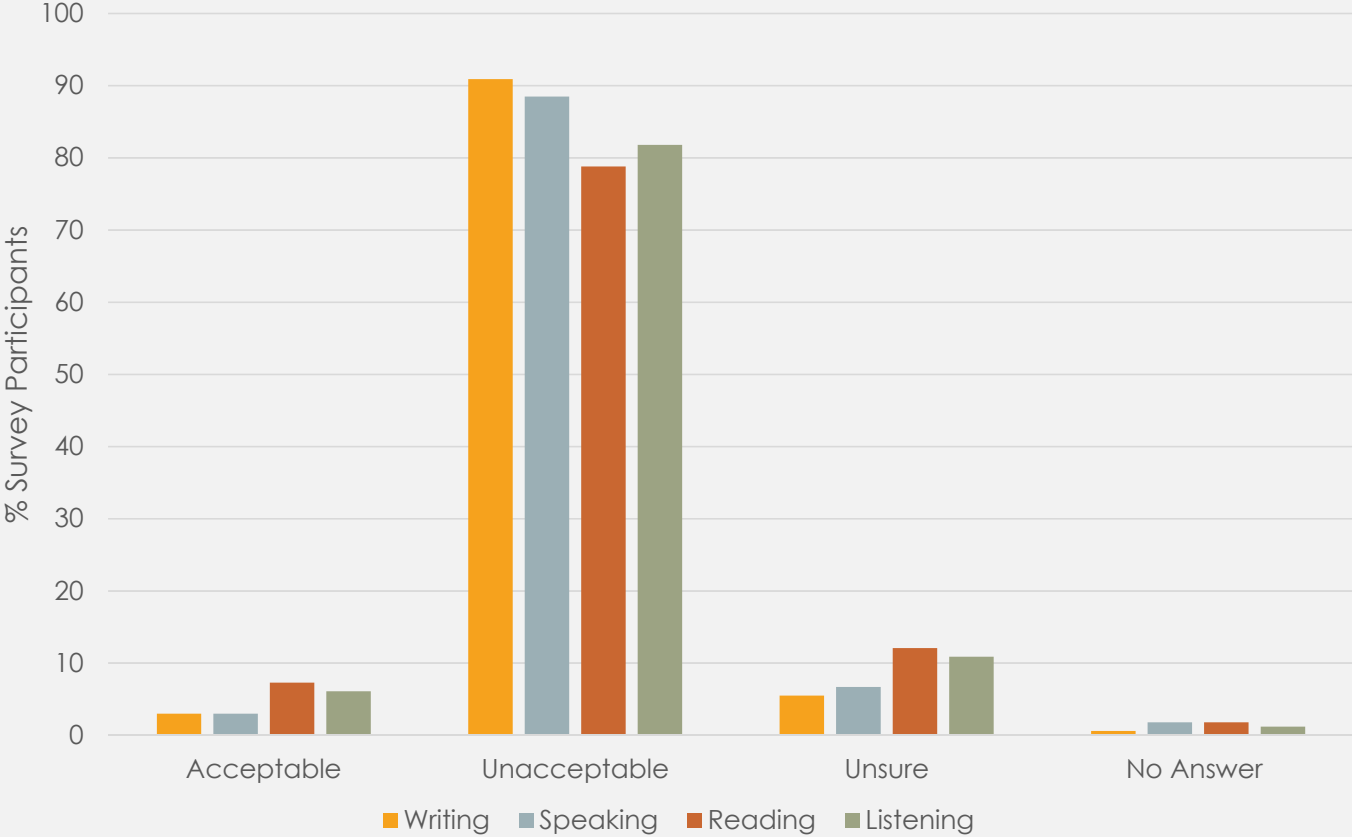
## WHAT IS APPROPRIATE STUDENT USE OF MT?

- MT was largely seen as largely inappropriate for **complete sentences, complete paragraphs, and entire tasks** for reading, writing, listening, and speaking

## Complete Sentences



### Complete Paragraphs

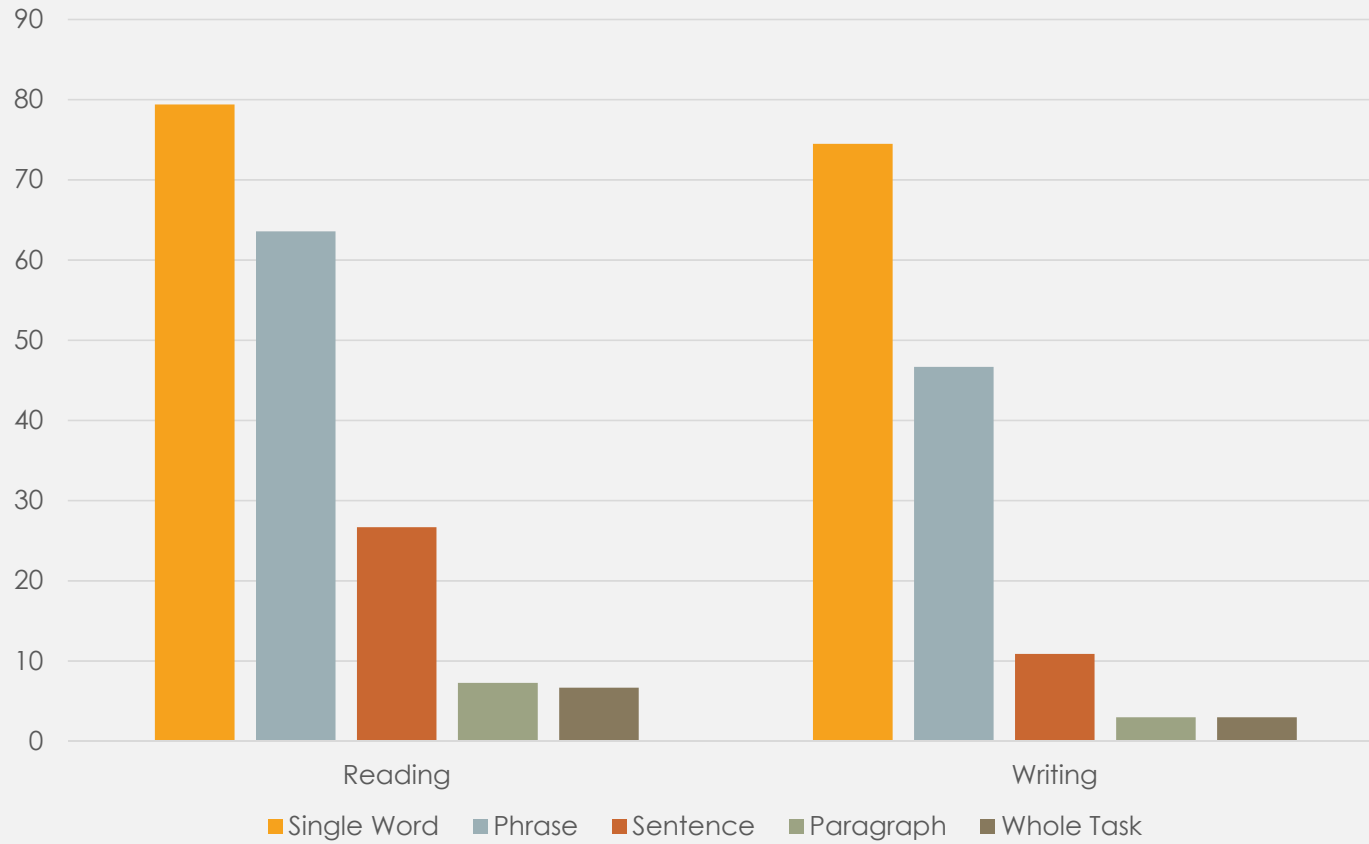


## WHAT IS APPROPRIATE STUDENT USE OF MT?

- The case of reading was slightly different



## Acceptable Use of MT: Reading vs. Writing



WHY IS READING DIFFERENT?

## WHY IS READING DIFFERENT?

“Students are also learning content because their use of MT gives them access to texts that would otherwise be beyond their current abilities.”

-Survey and interview participant

## WHY IS READING DIFFERENT?

“Students are also learning content because their use of MT gives them access to texts that would otherwise be beyond their current abilities.”

-Survey and interview participant

“If a student actually attempts to read an authentic text on their own and then uses MT as a tool for confirmation, they can gain quite a bit of confidence in their own reading comprehension”

-Survey participant

## WHAT DO STUDENTS LEARN FROM MT?

Most Prevalent	Less Prevalent but Salient	Less Prevalent
Vocabulary	Checking work	Confidence
Limitations of MT	Nuance of translation	Syntax
	Context-dependent nature of language	Responsible use of tech

## WHAT DO STUDENTS LEARN FROM MT?

### **Vocabulary**

“Find synonyms, better words, a wider range of words, or some key words around which to build sentences”

-Survey participant

## WHAT DO STUDENTS LEARN FROM MT?

### **Limitations of MT**

“I hope (!) that they learn that, at least as of now, they cannot rely on MT to accurately translate and that they need to learn the material in order to attain language proficiency.”

-Survey participant

## WHAT DO STUDENTS LEARN FROM MT?

Most Prevalent	Less Prevalent but Salient	Less Prevalent
Vocabulary	Checking work	Confidence
Limitations of MT	Nuance of translation	Syntax
	Context-dependent nature of language	Responsible use of tech



## WHAT DO STUDENTS LEARN FROM MT?

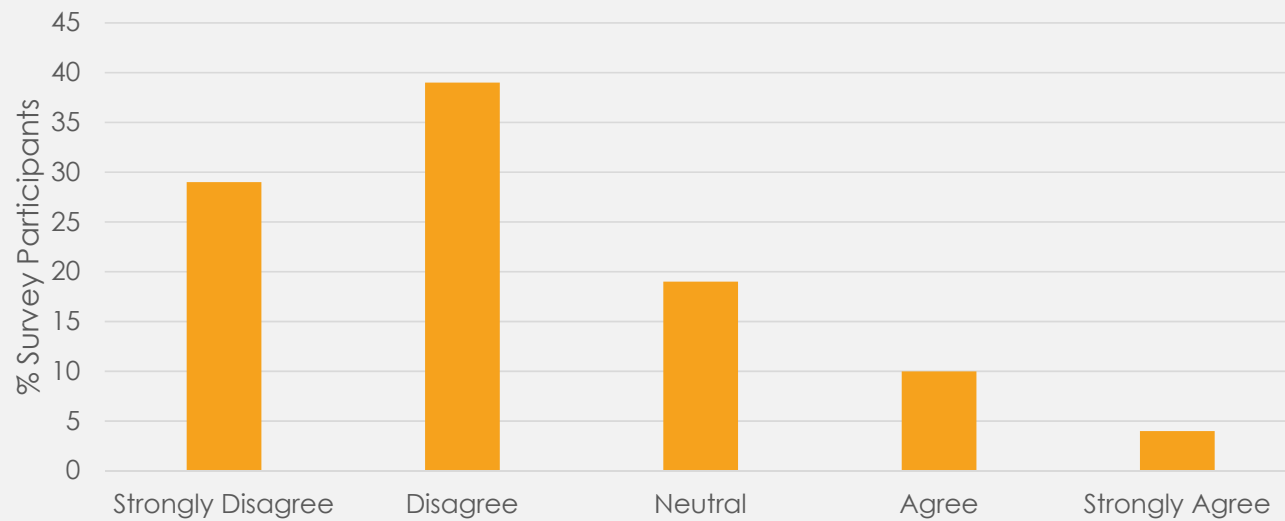
- This was **highly-contextual**
  - Depended on
    - Presence of pedagogical intervention
    - Student
    - Level

## WHAT DO STUDENTS LEARN FROM MT?

“If students have a conversation with their instructor at the beginning of the semester, **students will learn how to use MT, when it works and when it doesn't.**”

-Survey participant

## IS MT A THREAT TO THE PROFESSION?



# IS MT A THREAT TO THE PROFESSION?

- Explanation/Rationale
  - Language learning vs. machine translation
  - Language teaching vs. machine translation

## IS MT A THREAT TO THE PROFESSION?

“MT doesn't really teach students to produce or manipulate the language. We still need teachers for that.”

-Survey participant

## IS MT A THREAT TO THE PROFESSION?

“MT doesn't really teach students to produce or manipulate the language. We still need teachers for that.”

-Survey participant

“MT, whether it's at the level of a word, phrase, sentence, paragraph or entire text, is ultimately only translation. Teaching a foreign language is much more than teaching translation.”

-Survey participant

## IS MT A THREAT TO THE PROFESSION?

- Explanation/Rationale
  - Language learning vs. machine translation
  - Language teaching vs. machine translation
- BUT: Concerns remain around language ideologies in US

## IS MT A THREAT TO THE PROFESSION?

“The broader public, including legislators and education leaders and university administrators, perceives learning a second language as a technological problem that can be solved with an app, as if the problem of math education could be solved by giving everyone a calculator. With MT to do the hard work for beginning students, they never force themselves to do the difficult work necessary for learning. Students see it as wasted effort, and administrators see the whole department as dispensable.”

-Survey participant



DESCRIPTIVE TO ANALYTICAL

## ANALYTICAL RESULTS

### METAPHORS OF MACHINE TRANSLATION

**I. MT as dictionary “on steroids”**

**II. MT as a “tool of deception”**

**III. MT as “a new tool in our toolbox”**

IV. MT as an instrument: “calculator”

V. MT as a crutch

## METAPHOR 1

### MT AS A DICTIONARY “ON STEROIDS”

- MT represents a quick and easy fix to a problem: “mirrors the pace of post modernity”
- the Googlization of everything: students use it because “google is everywhere”
- at the word level, its use is acceptable; beyond that, it is “an obstacle for learning” or “an easy way out,” i.e. cheating
  - students are constructed as lazy or weak, not wanting or not able to put in the extra effort to do the work
- MT is not a threat: teachers are not dictionaries
  - they can teach students how to use MT
  - they can provide all the things that MT can't provide

## METAPHOR II

### MT AS A “TOOL OF DECEPTION”

- **Students:** deceived because they don't learn anything and because they don't realize MT's limitations
  - “they honestly believe because of what they hear in the media, etc. that MT will produce proper language”
- **Instructors:** deceived by students who cheat (they are disrespected) and deprived of the opportunity to see what students are really learning
- **Language learning:** MT “obscures the hard work involved with becoming proficient or fluent in a foreign language”
- **Language requirement:** MT use allows students to pass the class and to fulfill the language requirement

## METAPHOR III

### MT AS A “NEW TOOL IN OUR TOOLBOX”

- it can support learning, but it is “simply” a tool among many
- “our” places instructor in the role of mediator of its use so that it is not abused and so that it doesn't become a crutch
  - teach students how to use MT “judiciously,” “effectively,” “appropriately,” “efficaciously,” “efficiently,” “wisely,” “properly,” “carefully”
  - this involves teaching students the limits of MT
  - as MT is not a transparent tool language is also not a transparent tool: students need to learn to tolerate ambiguity, to appreciate the importance of context, and to grasp the complexity of language, for example

## INTERVIEWS: CASE STUDIES

## CASE ONE: CASEY MT AS A TOOL / CRUTCH

- “don't let yourself fall into that crutch of thinking that translating is learning the language because it's not”

## CASE ONE: CASEY MT AS A TOOL / CRUTCH

- “So I don't feel like I struggle with Google Translate, I struggle with helping students understand that it's okay to make mistakes when you're learning and it's okay to simplify and it's okay to turn in something that doesn't feel like adult speech. Because the idea is that you're trying to learn and acquire the language so that it can become a part of yourself, and with Google Translate that's not going to happen. So I think my struggle is more trying to communicate that to students. And I guess you could say that my struggle is feeling like I'm not doing a very good job of communicating that ”



## CASE ONE: CASEY MT AS A TOOL / CRUTCH

- “I do understand that Google is getting better, but I don't feel that it is the authority in my classroom, and I don't really want someone to be telling me that it has authority that I don't have. I put an awful lot of time and effort into getting where I am. And again, that feels very disrespectful.”

## CASE ONE: CASEY MT AS A TOOL / CRUTCH

- “I use Google Translate myself sometimes to double check. I'm not sure how this grammar works exactly. I mean that's actually fairly rare. Vocabulary that I'm not used to in a particular context. I get so frustrated too because I have to double check their things and I think oh, that doesn't work, but I double check it because somehow it makes me not sure of myself.”

## CASE ONE: CASEY MT AS A TOOL / CRUTCH

- “I feel though that I am working hard to hold my ground. So I still feel like I do what I do the way I want to do it. But like I said, I often feel like I'm just hanging on. I can retire in less than 10 years so can I hang on for 10 years?”

## CASE TWO: AMELIA MT AS A TOOL / BRIDGE

- “I'm thinking how would we help translation technology become a bridge... A bridge between the students and the experienced human translator, meaning us...we're talking about being a bridge, or being sort of an assistant to the instructor in the language classroom”

## CASE TWO: AMELIA MT AS A TOOL / BRIDGE

- “I think that students still regard me as the ultimate accurate source of information. So they will look up their words or whatever, but then, they'll come to me and they'll want to confirm with me. So they'll come to me and they'll say, ‘Hey, I looked up this and this is what I found, but I'm not sure. Can you confirm this?’”

## CASE TWO: AMELIA MT AS A TOOL / BRIDGE

- “Learn how to work more productively on their own, learn to question the choices that they make with regards to language in context, learn how to ask questions and know not be afraid to make mistakes and be open about the process. And learn the power and the importance of words. That a word is not just a piece in a puzzle but it has meaning and meaning is something that you have to learn to identify, and interpret, and construct.”

## CASE TWO: AMELIA MT AS A TOOL / BRIDGE

- “I don't see them actually sit down and go over the sentence, and take the sentence in for a minute. Take the meaning of the sentence in and pause, and think about it for a second before jumping on your cellular phone to look for the immediate translation. So I think that ... I don't know how to call it, that pause has been lost. That meditative or reflective pause that was there before has been lost now.”

<b>Casey</b> <b>MT as tool / crutch</b>	<b>Amelia</b> <b>MT as tool / bridge</b>
<ul style="list-style-type: none"><li>• MT deprives instructors (and students) of agency</li><li>• MT negatively impacts the relationship between instructor and student (trust)</li><li>• MT interferes with / prevents language learning</li></ul>	<ul style="list-style-type: none"><li>• Instructors and students have agency with respect to MT use</li><li>• MT contributes to a positive relationship between instructor and students (trust)</li><li>• Instructor can provide something different than MT: deeper insights into language and meaning-making</li></ul>





[Photo credit: TranslateMedia](#)

## TAKE AWAYS

Machine translation “for better or for worse, is not going to disappear overnight. It really boils back down to this idea of, if they're going to do it, I want them to do it responsibly, much like you would teach a child to drink alcohol at home if they're under 21. Machine translation is a lot like booze. I expect that to be in the paper.”

-Alan, Graduate Student Instructor of Arabic (Interviewee)

# Google Translate

 Text

 Documents

ENGLISH - DETECTED

FRENCH

ENGLISH

SPANISH



Thank you!



10/5000



QUESTIONS?