1 Case Study

We show several real-cases to see the difference between the baseline and our model. These cases are shown in Table 1. The "Source" indicates the source sentence and the "Reference" indicates the human translation. The underline means average gate activation is larger than 0.5 (computed after merging the sub-word). The **bold font** indicates improvements of our model; and the *italic font* indicates translation errors.

The global representation could revise several usual errors in machine translation systems like over/under translation. Furthermore, some mistakes about semantic (case 2) or syntactic (case 4) are revised by the global representation.

Source	帕特里克·罗伊辞去雪崩队主帅一职。
Reference	Patrick Roy resigns as Avalanche coach.
Transformer	Patrick Roy resigned as *manager* of the avalanche.
+ GloRepre	Patrick Roy <u>resigned</u> as **coach** of the avalanche.
Source	出台或者即将出台楼市调控政策的二线城市不止苏州，还包括合肥、南京等城市。
Reference	In addition to Suzhou, other second-tier cities including Hefei and Nanjing will also introduce property market regulations and control policies.
Transformer	The second-tier cities, including Hefei and Nanjing, are not only Suzhou, *but also the cities of Hefei.*
+ GloRepre	The second-tier cities, <u>not</u> <u>only</u> Suzhou, but also Hefei and Nanjing **will also introduce property market regulations and control policies.**
Source	法庭得知，这名 22 岁的受害者在饮酒后穿过公路。
Reference	The 22-year-old victim had been drinking and had passed out on the road, the court heard.
Transformer	The 22-year-old was told to cross the road after drinking.
+ GloRepre	The 22-year-old victim <u>crossed</u> the road after <u>drinking</u>, **the court heard**.
Source	"莫斯科旅游警察的人员招录、警务模式、装备配备，以及与游客的良好互动给我们带来了很多启发，"陈晓昆说。
Reference	"The recruiting, police mode and equipment of Moscow tourism police officers and their excellent interactions with visitors have inspired us a lot." Chen Xiaokun said.
Transformer	"We have a lot of inspiration from the *Moscow Travel Police*, *the police model*, the equipment, the good interaction with tourists," *Chen said.*
+ GloRepre	"We have a lot of <u>inspiration</u> <u>by</u> the Moscow Travel <u>Police</u>'s recruiting, **police mode**, equipment and the good interaction with tourists." *Chen said.*

Table 1: Translation cases from Transformer and our model which are from the ZH-EN task.