Reverse Paralysis

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INTRODUCTION

- 5.6 million (1.9% of the US population) people suffer some sort of paralysis
- Spinal lesions cause extreme cases of paralysis
- Humans have yet to solve all paralysis cases
- New technology aims to solve this problem

Background

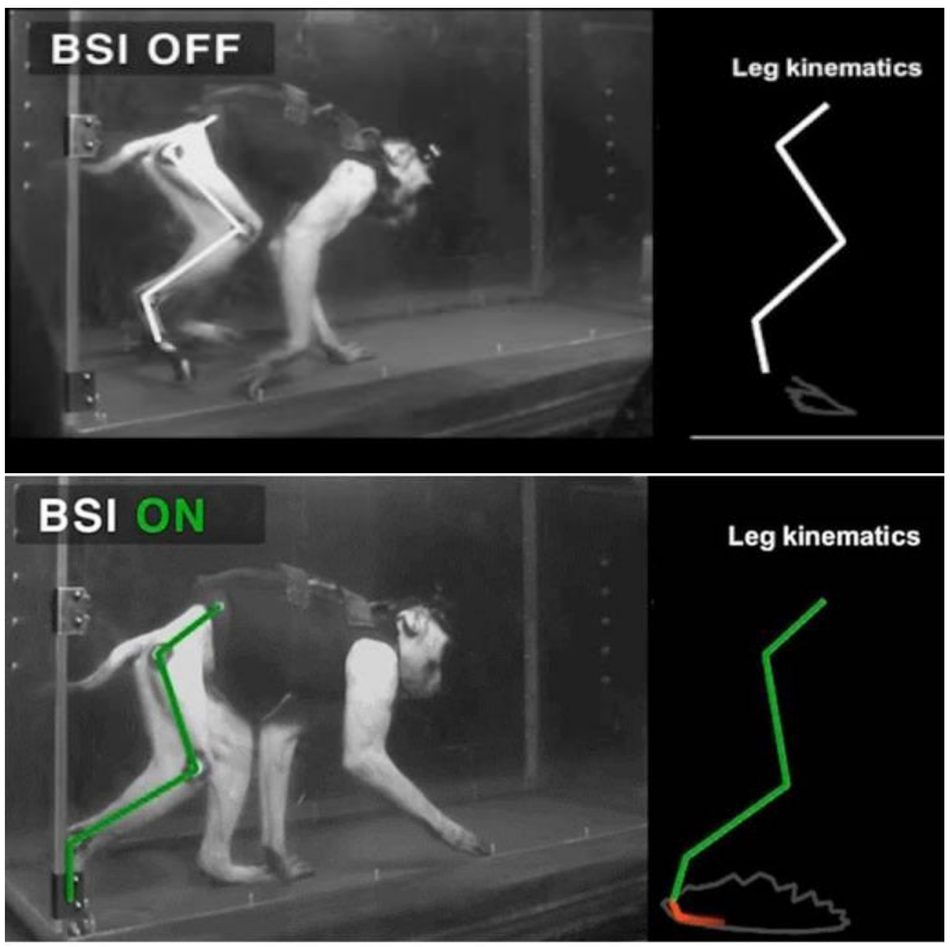
- Paralysis may comes in many forms and has many causes
- Grégoire Courtine worked with colleagues at (EPFL) Swiss Federal Institute to develop reverse paralysis technology

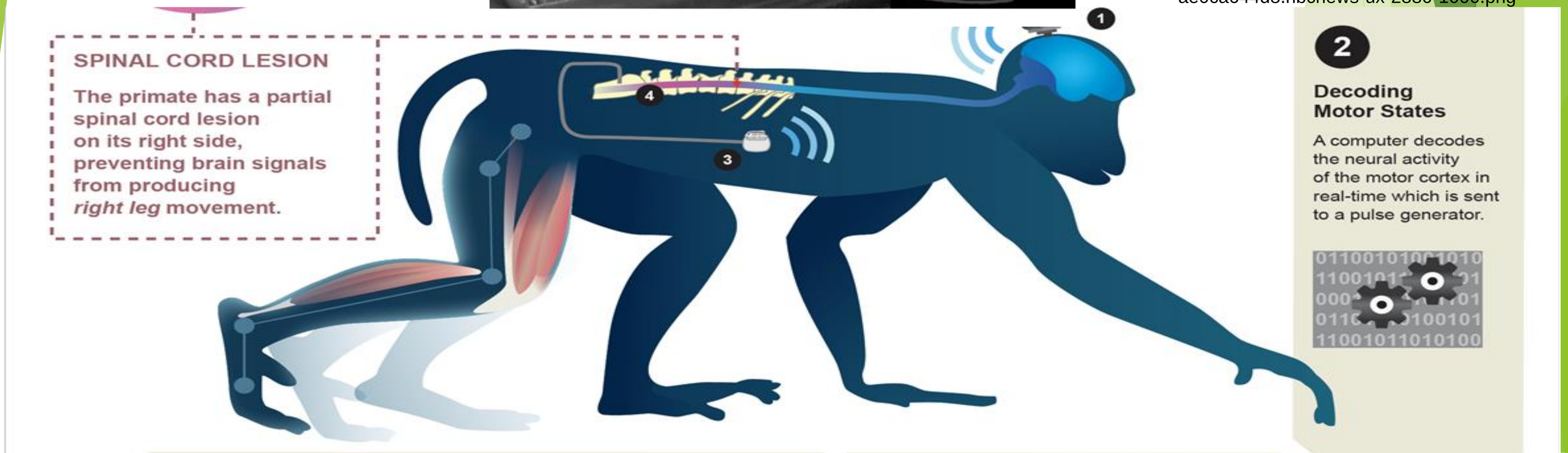
Implementation/Experiment

- The team tested their technology on a partially paralyzed primate
- The primate has a partial spinal cord lesion so it's right leg does not receive neural signals from the brain
- Neural activity still occurs in an attempt to control the leg
- His team aimed to record the neural activity and send it to the muscles that control the primate's right leg

Reversing Paralysis/Neural Bypass

1. The brain implant records motor cortex activity in the primate's brain
2. A Computer decodes the neural activity
3. The pulse generator reads the decoded activity and creates stimulation protocols
4. The spinal implant runs the protocol and stimulates neural paths to control muscles





Conclusion

- The goal of this technology is to improve rehabilitation, and is not meant to be a permanent fix
- This may lead to reversing more forms of paralysis
- This technology could be implemented for human use
- The team believes that the technology could be transferred to humans in the next 10 years

Works Cited

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