パソコンがあれば出来ることばの実験研究の実際

KLS "Hands-on" Workshop on Easy Experimental Methods

代表：中谷健太郎　（甲南大学）

中野陽子（関西学院大学）

田中幹大（甲南女子大学）

青木奈律乃（甲南大学院）

本日のメニュー

1. Introduction: 対照実験とラテン方格法
2. クラウドソーシングによる質問紙調査　（青木）
   - 使用ソフト：ウェブアプリ（Lancers, Ibex farm）
3. 自己ペース読文課題　（中谷）
   - 使用ソフト：Linger
4. プライミング課題　（中野）
   - 使用ソフト：DMDX
5. 言語産出課題　（田中）
   - 使用ソフト：E-Prime

関西心理言語学研究会

KCP (Kansai Circle of Psycholinguistics)
http://www.konan-u.ac.jp/hp/nakatani/kcp/

実験のデザインについて

「対照実験」Control experiment

言語実験＝対照実験

* 「要因」factorの効果の有無を検証する

* 検証したい要因の影響下にある群＝実験群

* 検証したい要因の影響がない群＝対照群（統制群）

* 実験群 & 対照群　⇒あわせて**Target**と呼ぶ

* フィラー Filler (Distractor)

* 各被験者に提示する割合は最低Target : Filler = 1 : 2, できれば 1 : 3 の割合が望ましい

例：*That*-trace effect (Perlmutter, 1968)

1. a. Who do you think Sue met __?
    b. Who do you think that Sue met __?

2. a. Who do you think __ met Sue?
    b. *Who do you think that __ met Sue?

2x2 factorial design
要因(1)：*that*の有無
　　2水準：*that*有 vs. 無

要因(2)：gapの位置
　　2水準：subj gap vs. obj gap

用意する材料 (Target items)

1. a. Who do you think Sue met __?
   b. Who do you think that Sue met __?
   c. Who do you think __ met Sue?
   d. *Who do you think that __ met Sue?

   } Item 1

2. a. Who do you suspect John killed __?
   b. Who do you suspect that John killed __?
   c. Who do you suspect __ killed John?
   d. *Who do you suspect that __ killed John?

   } Item 2

3. a. Who do you believe John punched __?
   b. ...

   } Item 3

では各被験者に材料をどのように提示すべきか

Target items の提示

1. a. Who do you think Sue met?
    b. Who do you think that Sue met?
    c. Who do you think met Sue?
    d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
    b. Who do you suspect that John killed?
    c. Who do you suspect killed John?
    d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
    b. Who do you believe that John punched?
    c. Who do you believe punched John?
    d. Who do you believe that punched John?

Target itemsの提示

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者1

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者2

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者3

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者1

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者2

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1. a. Who do you think Sue met?
   b. **Who do you think that Sue met?**
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. **Who do you suspect that John killed?**
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. **Who do you believe that John punched?**
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者3

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者4

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者1 （ラテン方格法 Latin square design）

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者2　（ラテン方格法 Latin square design）

1. a. Who do you think Sue met?
   b. **Who do you think that Sue met?**
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. **Who do you suspect killed John?**
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. **Who do you believe that punched John?**

被験者3 （ラテン方格法 Latin square design)

1. a. Who do you think Sue met?
   b. Who do you think that Sue met?

   c. Who do you think met Sue?

   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. Who do you suspect that John killed?
   c. Who do you suspect killed John?

   d. Who do you suspect that killed John?

3. **a. Who do you believe John punched?**
   b. Who do you believe that John punched?
   c. Who do you believe punched John?
   d. Who do you believe that punched John?

被験者4 （ラテン方格法 Latin square design）

1. a. Who do you think Sue met?
      b. Who do you think that Sue met?
      c. Who do you think met Sue?
      d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
      b. Who do you suspect that John killed?
      c. Who do you suspect killed John?
      d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
      b. Who do you believe that John punched?
      c. Who do you believe punched John?
      d. Who do you believe that punched John?

被験者5 （ラテン方格法 Latin square design）

1. a. **Who do you think Sue met?**
   b. Who do you think that Sue met?
   c. Who do you think met Sue?
   d. Who do you think that met Sue?

2. a. Who do you suspect John killed?
   b. **Who do you suspect that John killed?**
   c. Who do you suspect killed John?
   d. Who do you suspect that killed John?

3. a. Who do you believe John punched?
   b. Who do you believe that John punched?
   c. **Who do you believe punched John?**
   d. Who do you believe that punched John?

実験文提示のまとめ

✳ Targetはラテン方格法により各被験者に分配される

  被験者1: 1a, 2b, 3c, 4d, 5a, ...

  被験者2: 1b, 2c, 3d, 4a, 5b, ...

  被験者3: 1c, 2d, 3a, 4b, 5c, ...

  被験者4: 1d, 2a, 3b, 4c, 5d, ...

✳ TargetにFillerを混ぜる

✳ Target文とFiller文は擬似ランダムに提示されるのが理想（順序の効果を打ち消すため）