You Are How Often You "Like"

FB User Profiling: Where the Game Theory
Meets Psychoanalysis

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Outline

Theoretical Foundation

Cyber Behavior Under The Game Theory Framework

Empirical Findings
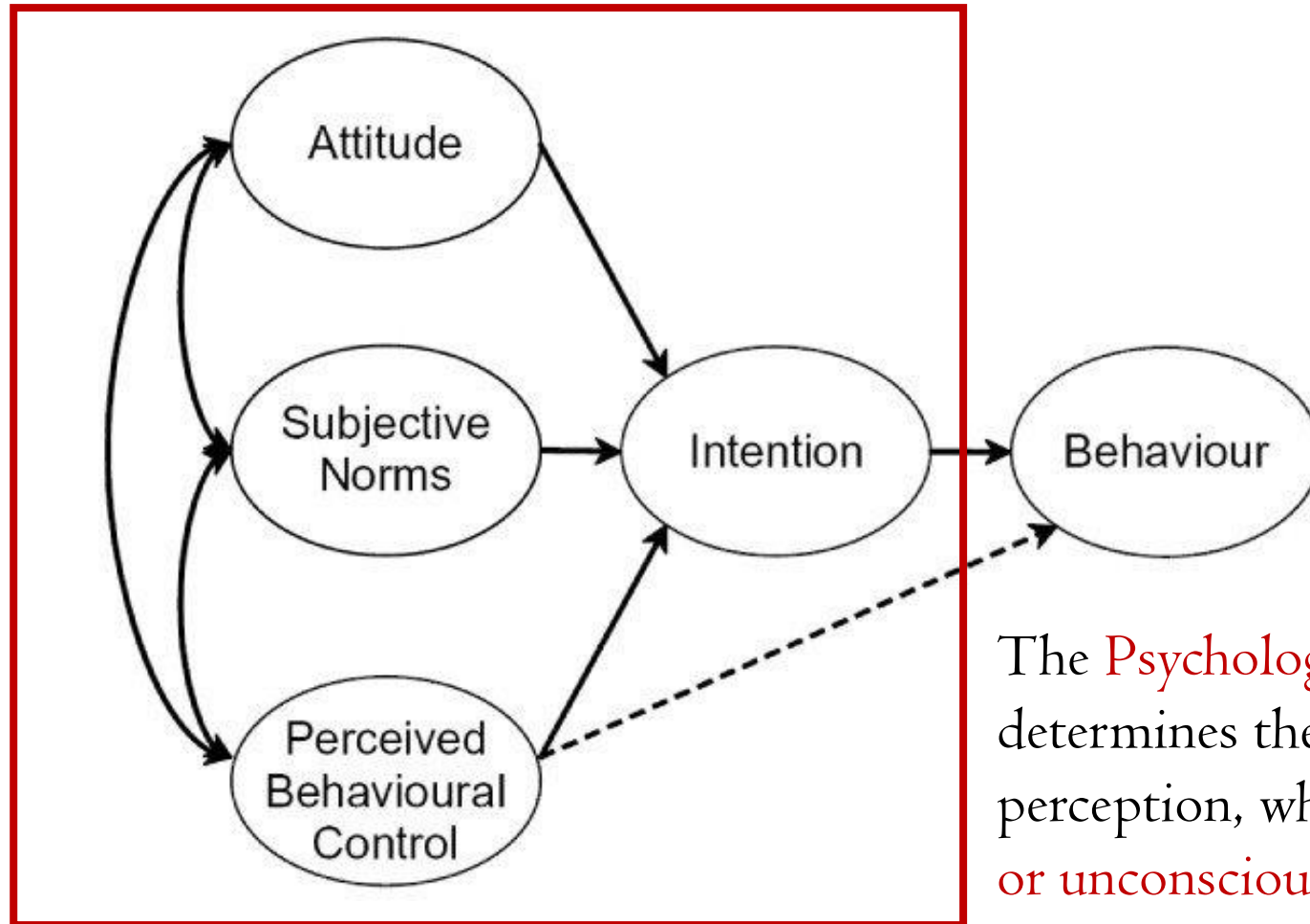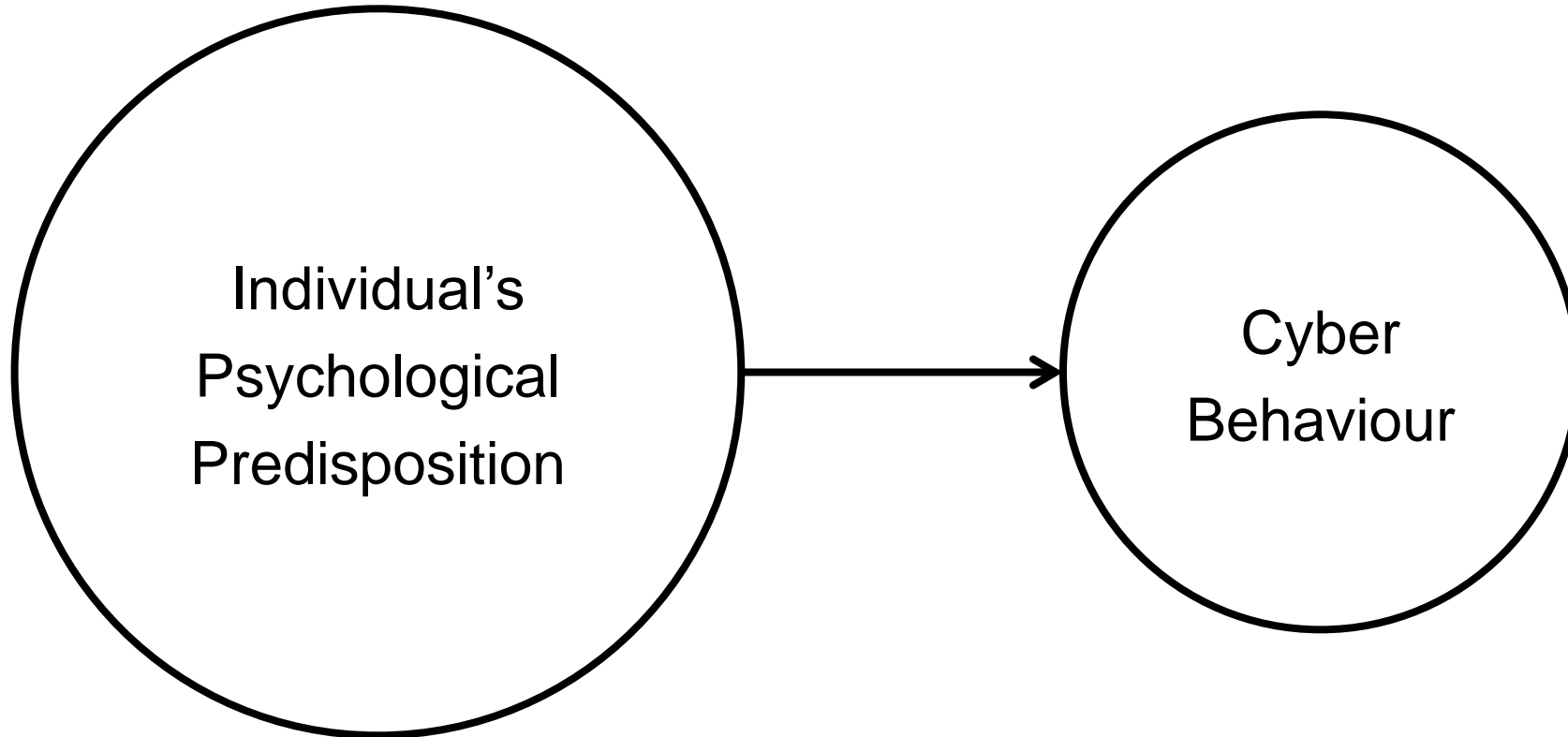
Practical Implications

Limitations

Outline

Theory of Planned Behavior (TPB)

The Psychological Predisposition determines the individuals' perception, whether consciously or unconsciously.

Linkage to the Game Theory

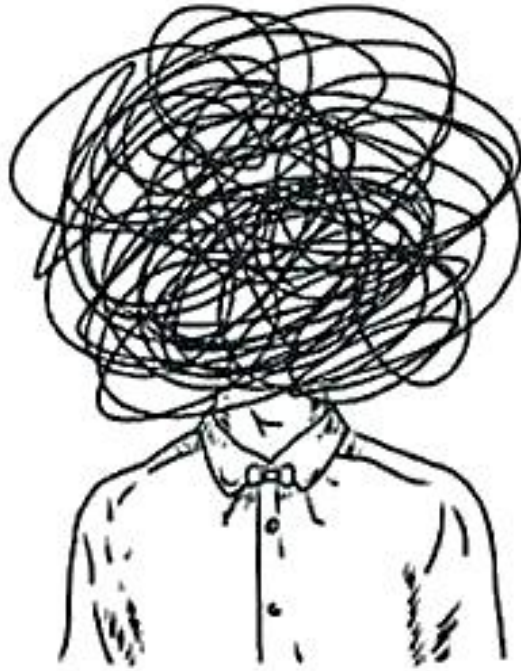
Individual's Psychological Predisposition → Cyber Behaviour

Which could be best represented and simplified with a payoff profile.

Psychological Projection (投射)

Which works unconsciously.

Anxiety & Reject Sensitivity (拒絕敏感度)

They are theoretically and empirically correlated.

Outline

The Payoff Profile

	👍 (blue)	👍 (gray)
👍 (blue)	A	$-B$ $-\gamma R_S$
👍 (gray)	A $-\alpha R_S$	$-\beta R_S$

R_S: Reject Sensitivity
$0 < \gamma < \beta$,
α is any of the real numbers

The Payoff Profile

	A	$-B$ $-\gamma R_S$
	A $-\alpha R_S$	$-\beta R_S$

The user plays mixed-strategically:

$$\mathbb{E}(\text{👍}) = pA + (1-p)(-B - \gamma R_S)$$
$$\mathbb{E}(\text{👍}) = p(A - \alpha R_S) + (1-p)(-\beta R_S)$$

$$\mathbb{E}(\text{👍}) = \mathbb{E}(\text{👍})$$
$$(p-1)B + (p-1)\gamma R_S$$
$$= (p-1)\beta R_S - p\alpha R_S$$

$$if \ R_S = 0, then \ B = 0 \ or \ p = 1$$

The Payoff Profile

	👍 (blue)	👍 (gray)
👍 (blue)	A	$-B - \gamma R_S$
👍 (gray)	$A - \alpha R_S$	$-\beta R_S$

The user plays mixed-strategically:

$$\mathbb{E}(\text{👍}) = pA + (1-p)(-B - \gamma R_S)$$
$$\mathbb{E}(\text{👍}) = p(A - \alpha R_S) + (1-p)(-\beta R_S)$$

$$\mathbb{E}(\text{👍}) = \mathbb{E}(\text{👍})$$
$$p = \frac{B + (\gamma - \beta - \alpha)R_S}{B + (\gamma - \beta + \alpha)R_S}$$

if p and R_S correlates positively, then $\alpha < 0$

The Payoff Profile

	👍	👍
👍	A	$-B$ $-\gamma R_S$
👍	A $+kR_S$	$-\beta R_S$

The Wanting Type
($k = -\alpha$,
p positively correlates to Rs)

	👍	👍
👍	A	$-B$
👍	A	0

The Independent Type
(p = 1)

	👍	👍
👍	A	0
👍	A	0

The Indifferent Type
(0 < p < 1)

Based on the model, we could have 3 different types of users with different payoff profiles and act accordingly on the social websites.

Outline

Opensource Data

臉書自拍分享：大學生的實踐與解讀

英文計畫名稱：Selfies on Facebook: Practices and Interpretations
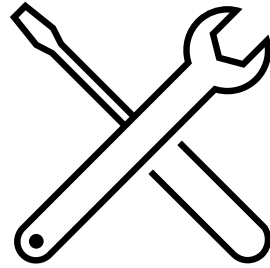**計畫主持人/服務單位：王映涵／國立中山大學行銷傳播管理所**
調查執行期間：2015-11-01 ～ 2015-12-31
DOI：10.6141/TW-SRDA-E10334-1

母體定義：台灣有使用Facebook之大學生，年齡18-22歲
最大樣本數目：717
調查方式：網絡調查

Operational Definition of p and R_s

We define the Reject Sensitivity as '按讚人數未達預期我會失望' while the p as the frequency of performing the " " behaviours.

The Payoff Profile

	👍 (blue)	👍 (gray)
👍 (blue)	A	$-B$ $-\gamma R_S$
👍 (gray)	A $+kR_S$	$-\beta R_S$

The Wanting Type
($k = -\alpha$,
p positively correlates to Rs)

	👍 (blue)	👍 (gray)
👍 (blue)	A	$-B$
👍 (gray)	A	0

The Independent Type
(p = 1)

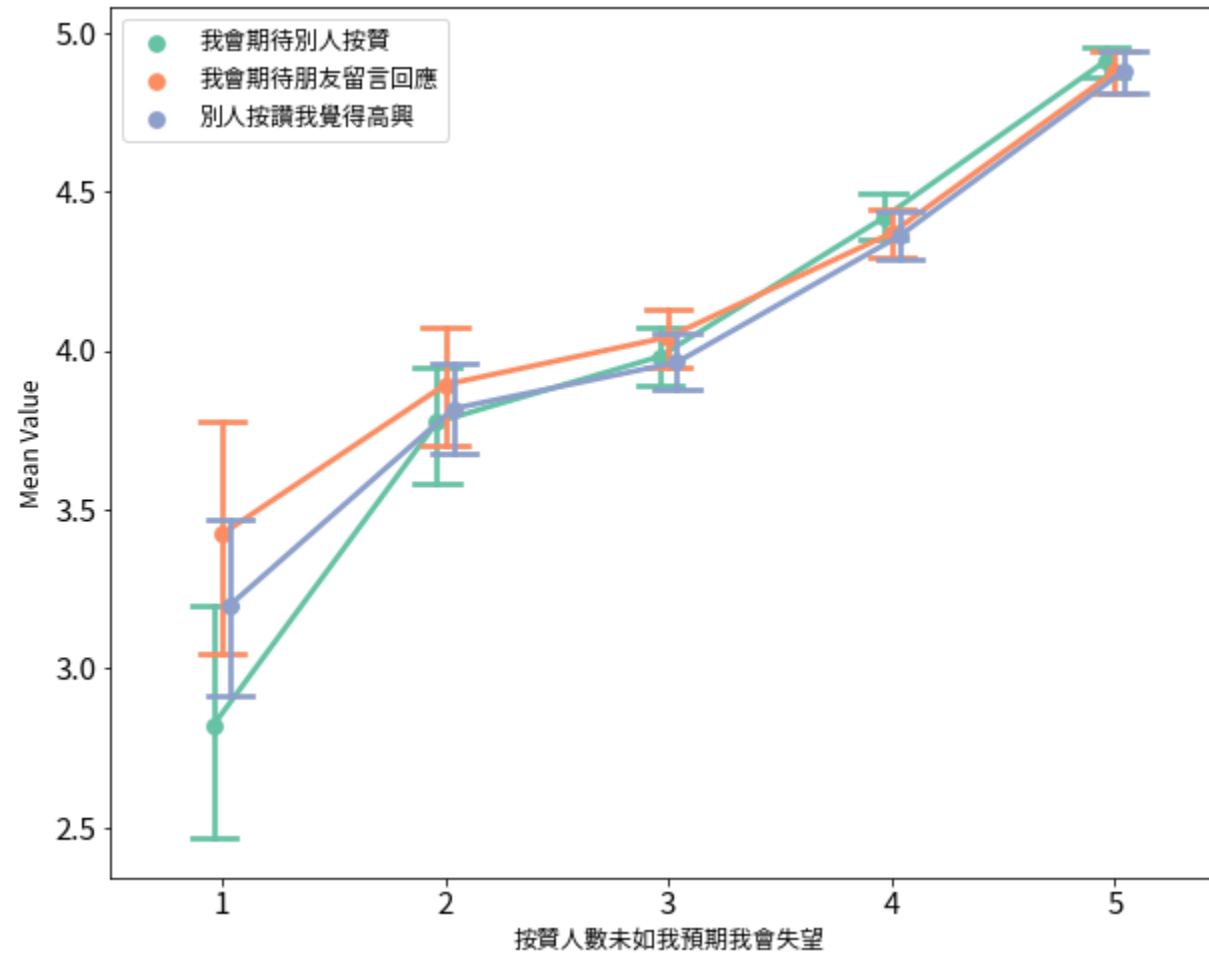|	👍 (blue)	👍 (gray)
👍 (blue)	A	0
👍 (gray)	A	0

The Indifferent Type
(0 < p < 1)

Let's first focus on the Wanting Type.

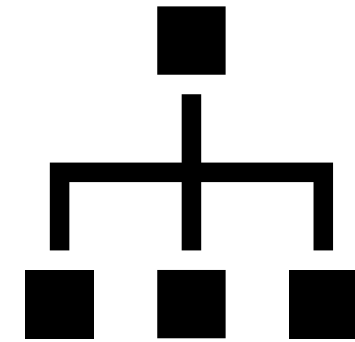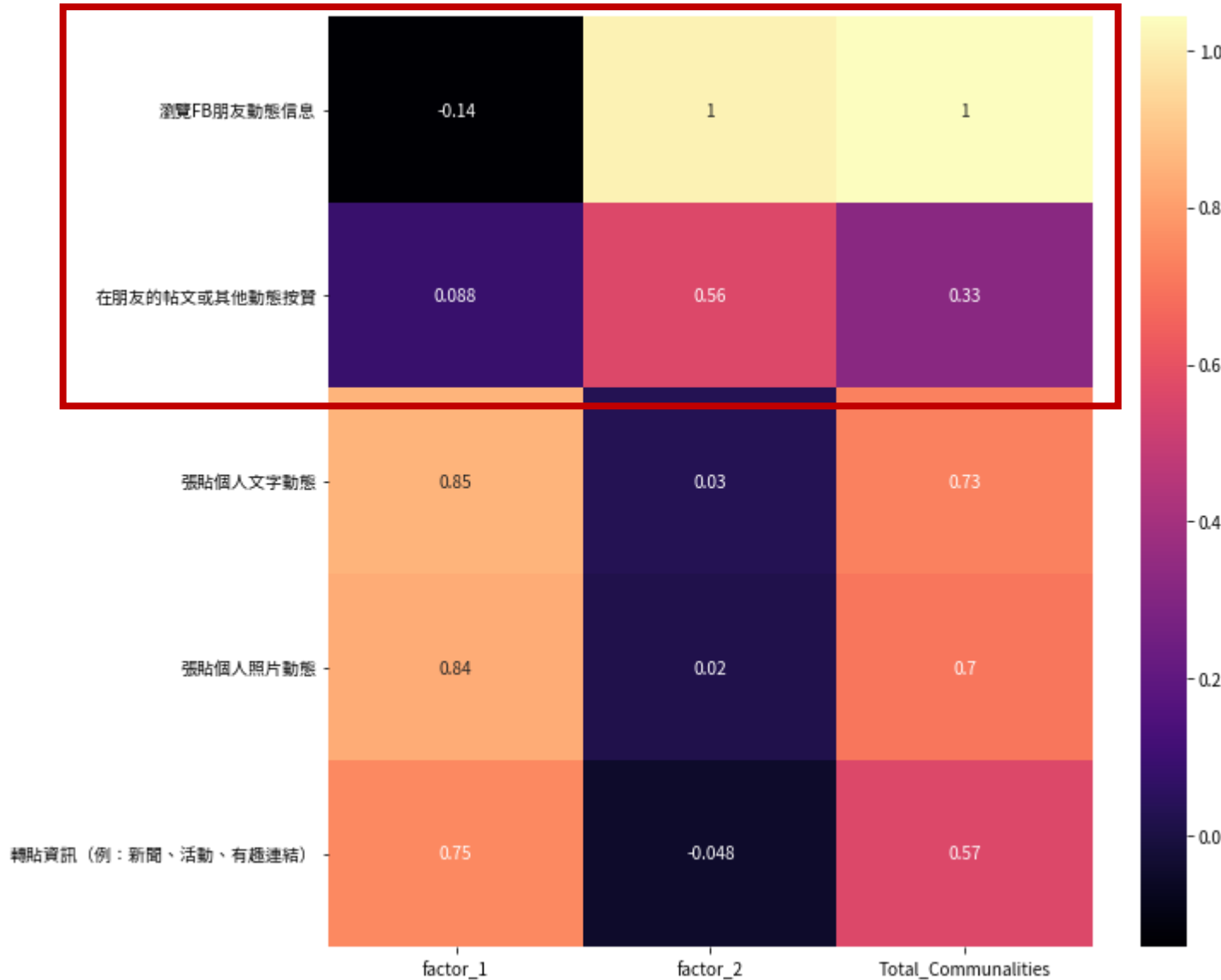# Psychological Projection (The Expectations)
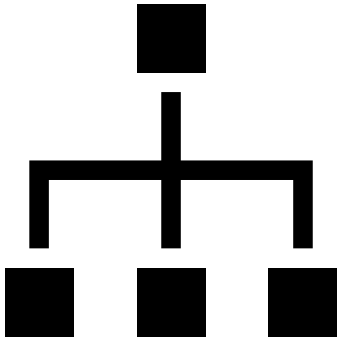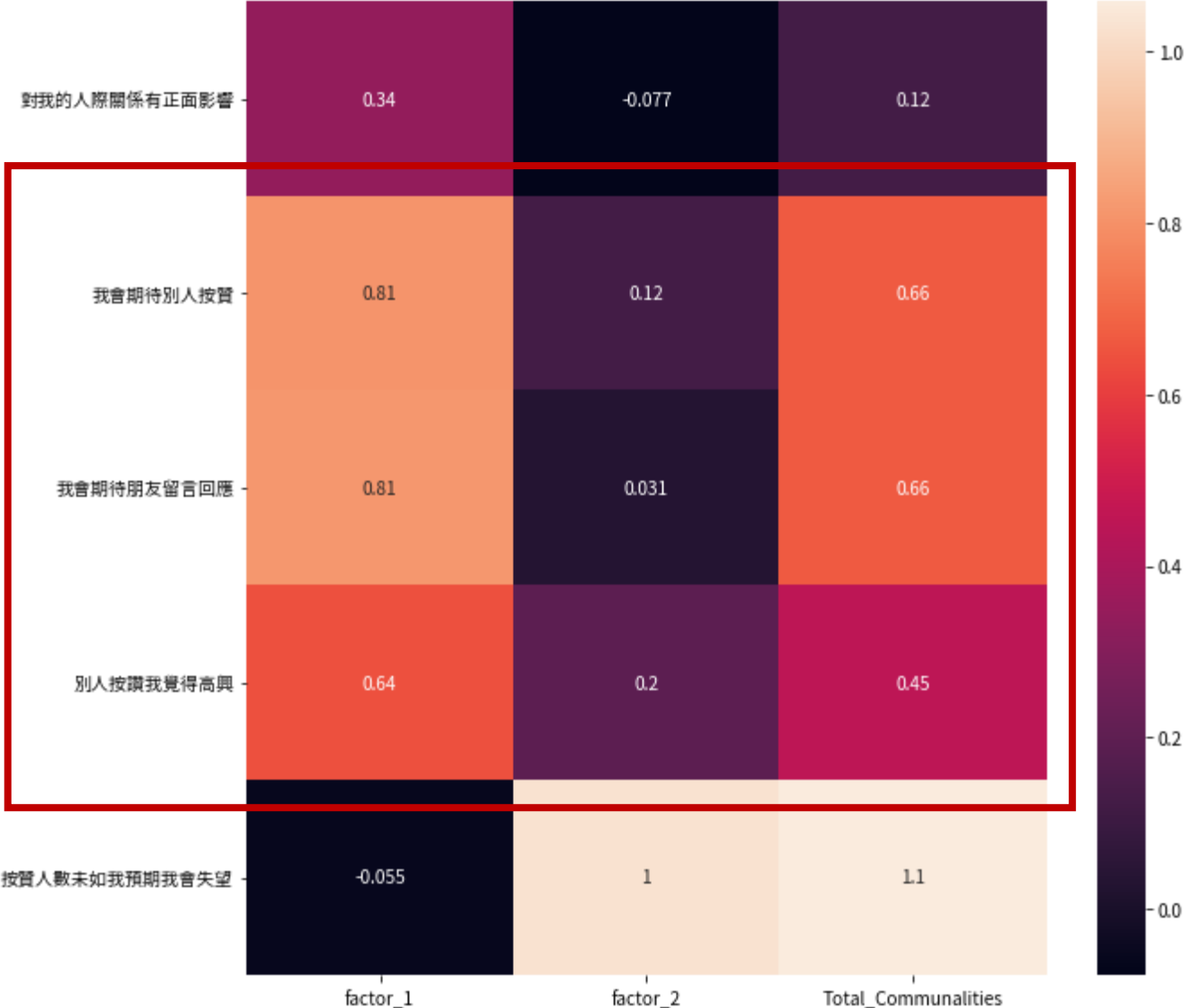
The results of Factor Analysis indicates that
"我會期待別人按贊" &
"我會期待朋友留言回應"
includes a certain homogeneity.

Psychological Projection - How they expect?

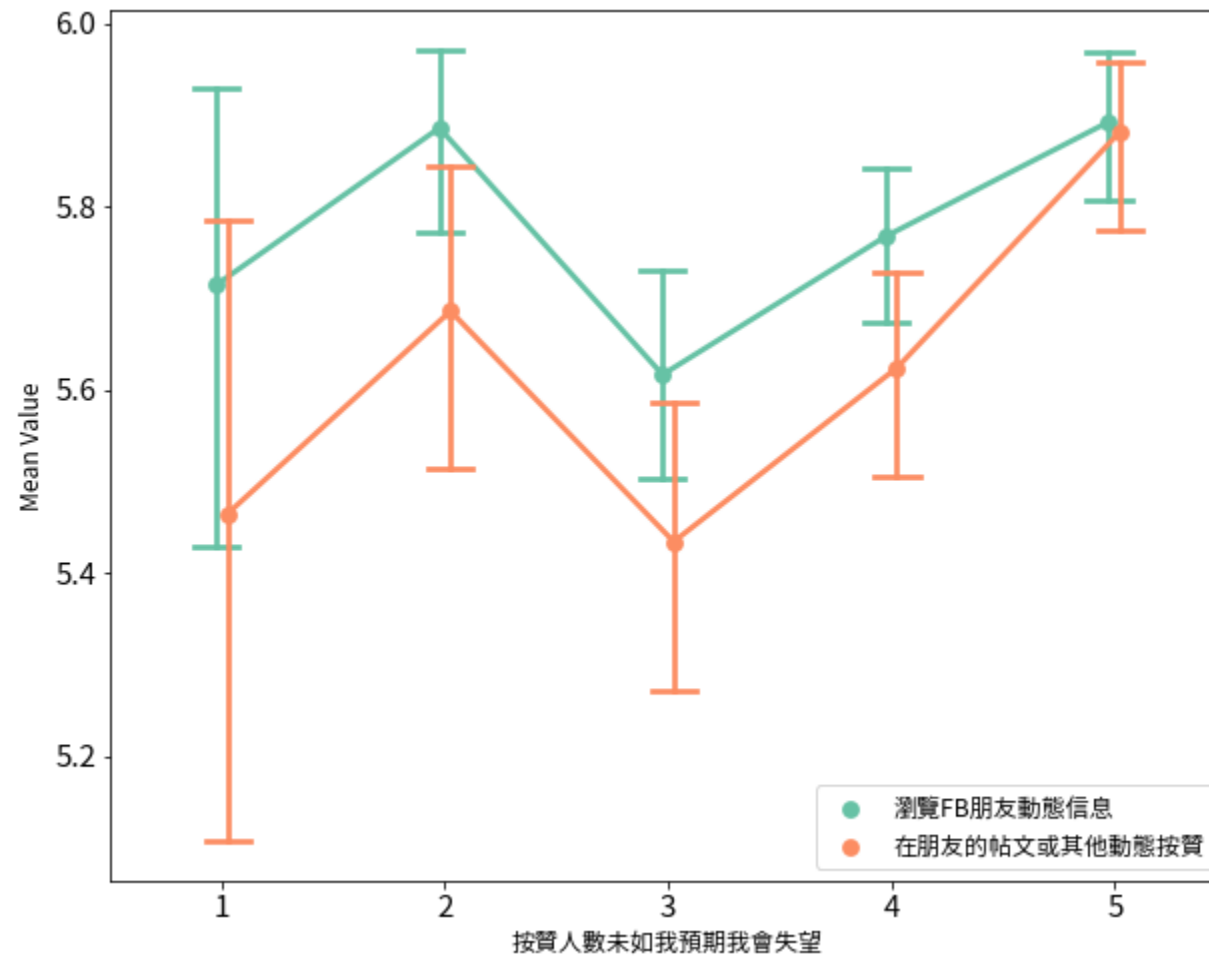# Psychological Projection (The General "👍" Behaviours)

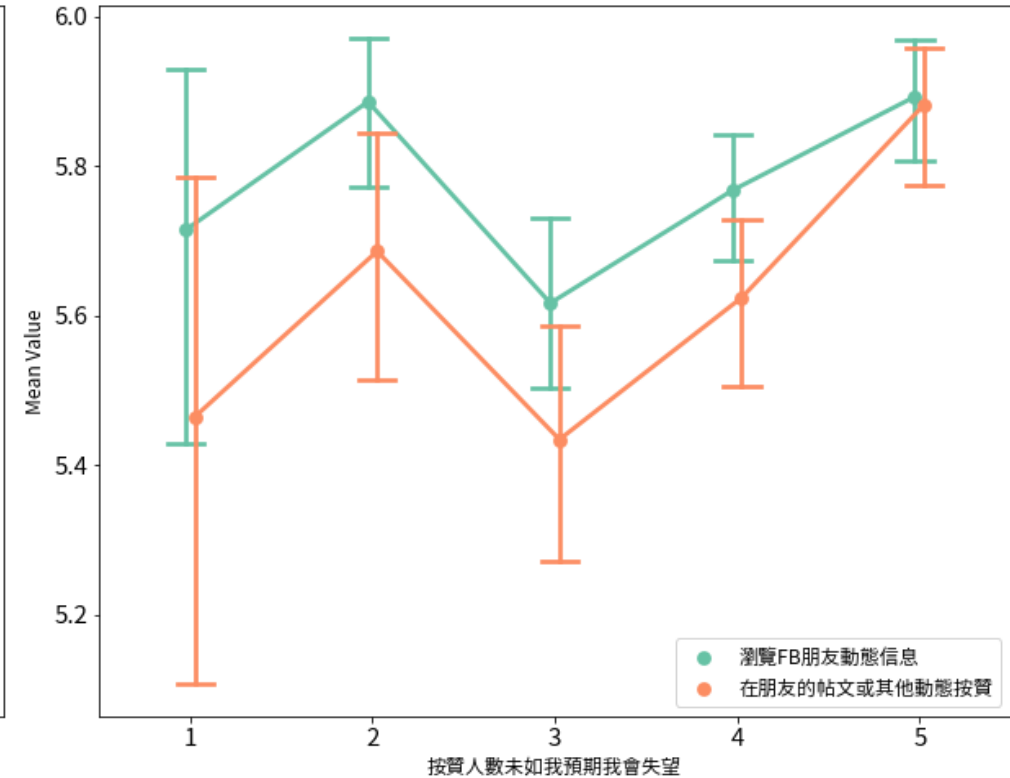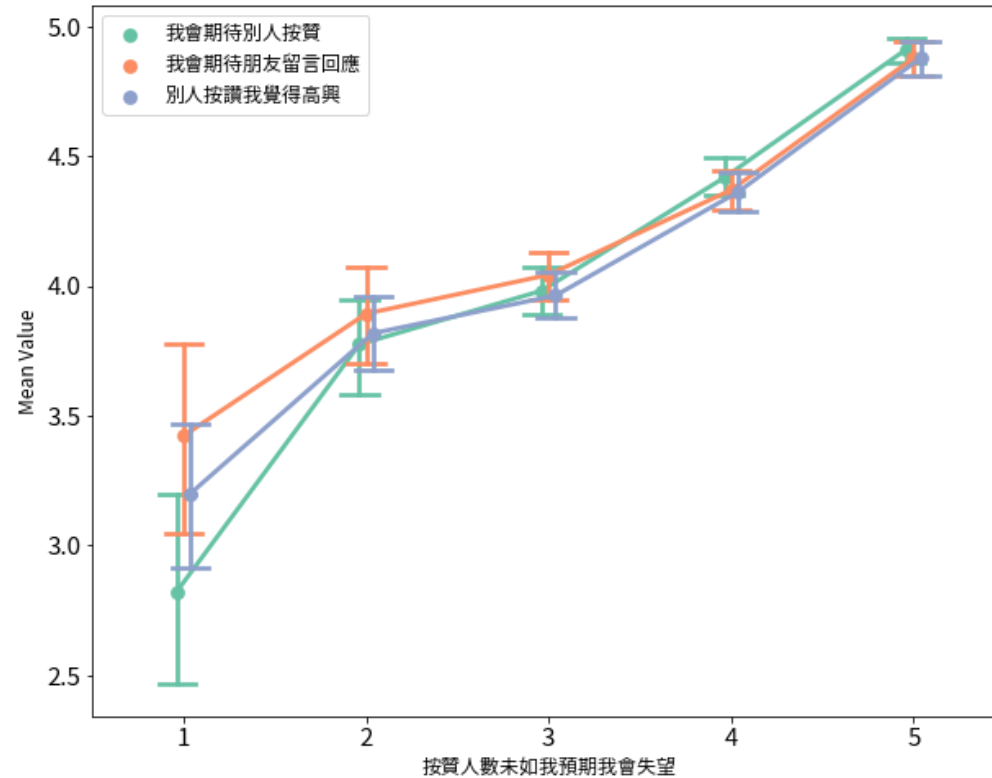The results of Factor Analysis indicates that
"瀏覽FB朋友動態消息" &
"在朋友的貼文或其他動態按贊"
includes a certain homogeneity.

Psychological Projection – How they act on FB?
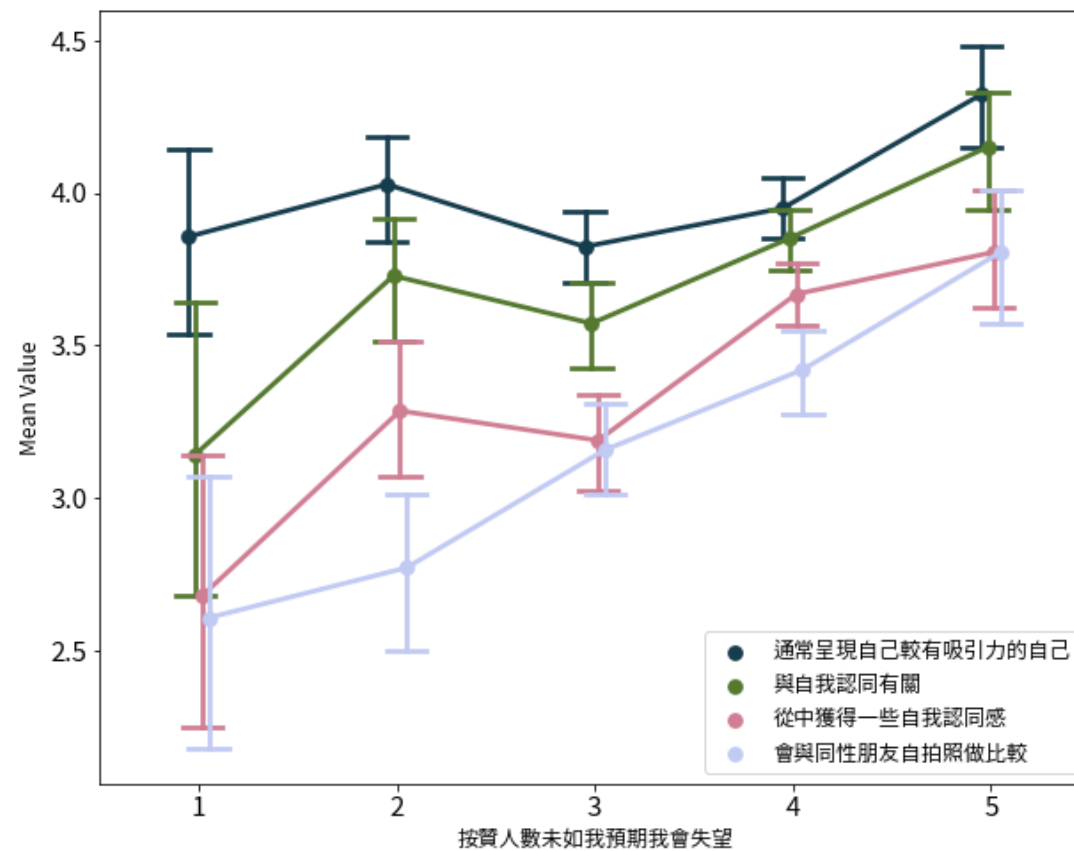
Psychological Projection

We're seeing that the users with greater Reject Sensitivity
act with respond to their expectation, as the model predicts.
The p correlates positively to the Rs.

The Wants & Their Dependency (Motives and Acts)

The Payoff Profile

The Wanting Type
$(k = -\alpha,$
p positively correlates to Rs)

The Independent Type
$(p = 1)$

The Indifferent Type
$(0 < p < 1)$

The analysis on the Independent and Indifferent Type are much tricky due to the overlap of their behaviour (p).

Where Are The Independent & Indifferent Types?
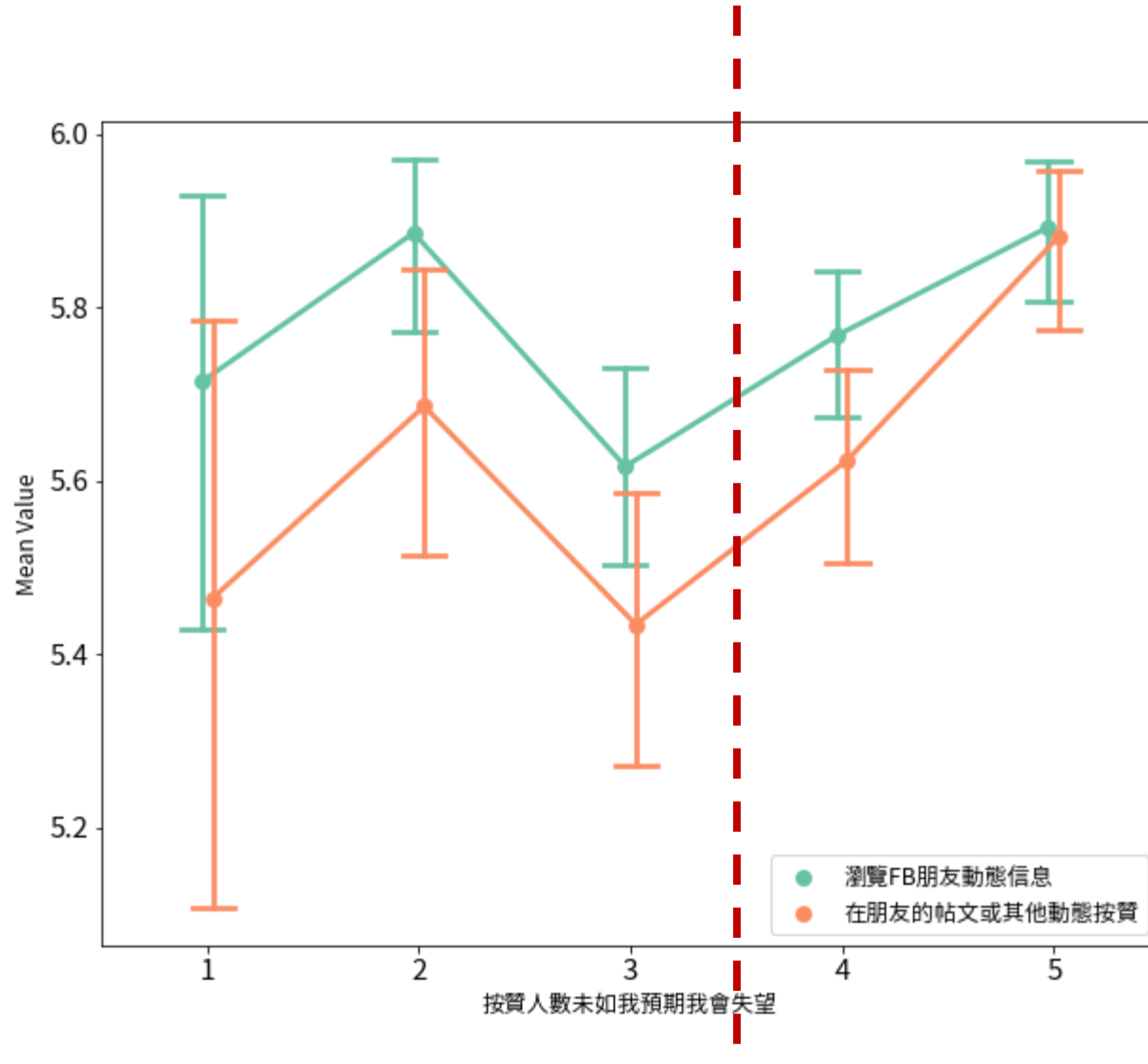
We define
'按讚人數未達預期我會失望' <= 3
as the pool of these two types.

Where Are The Independent & Indifferent Types?
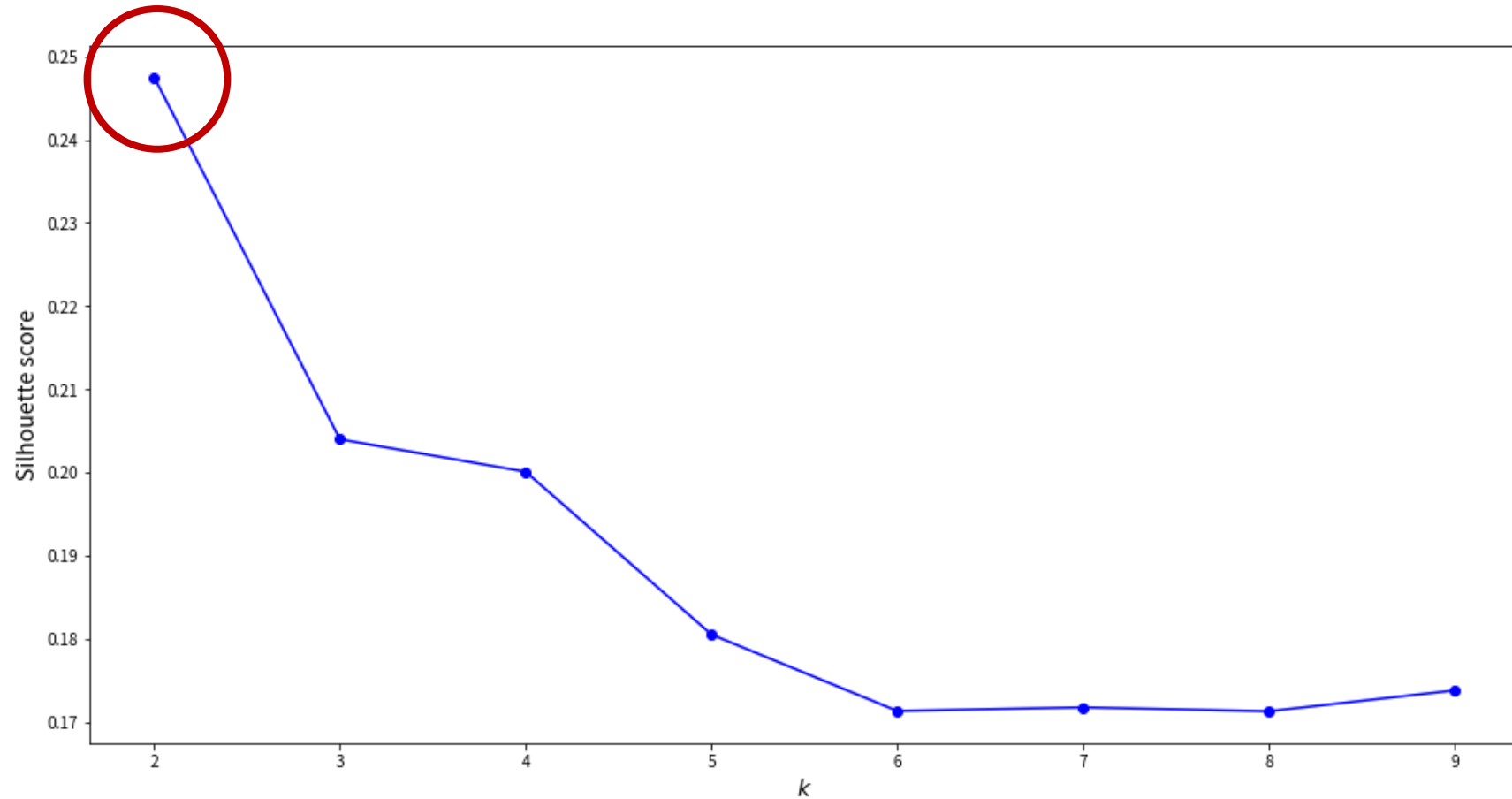
With the Clustering Analysis, we could see from the Silhoutte Score graph that there are two clusters within the pool. (The evidence is data-drivenly solid)

Where Are The Independent & Indifferent Types?
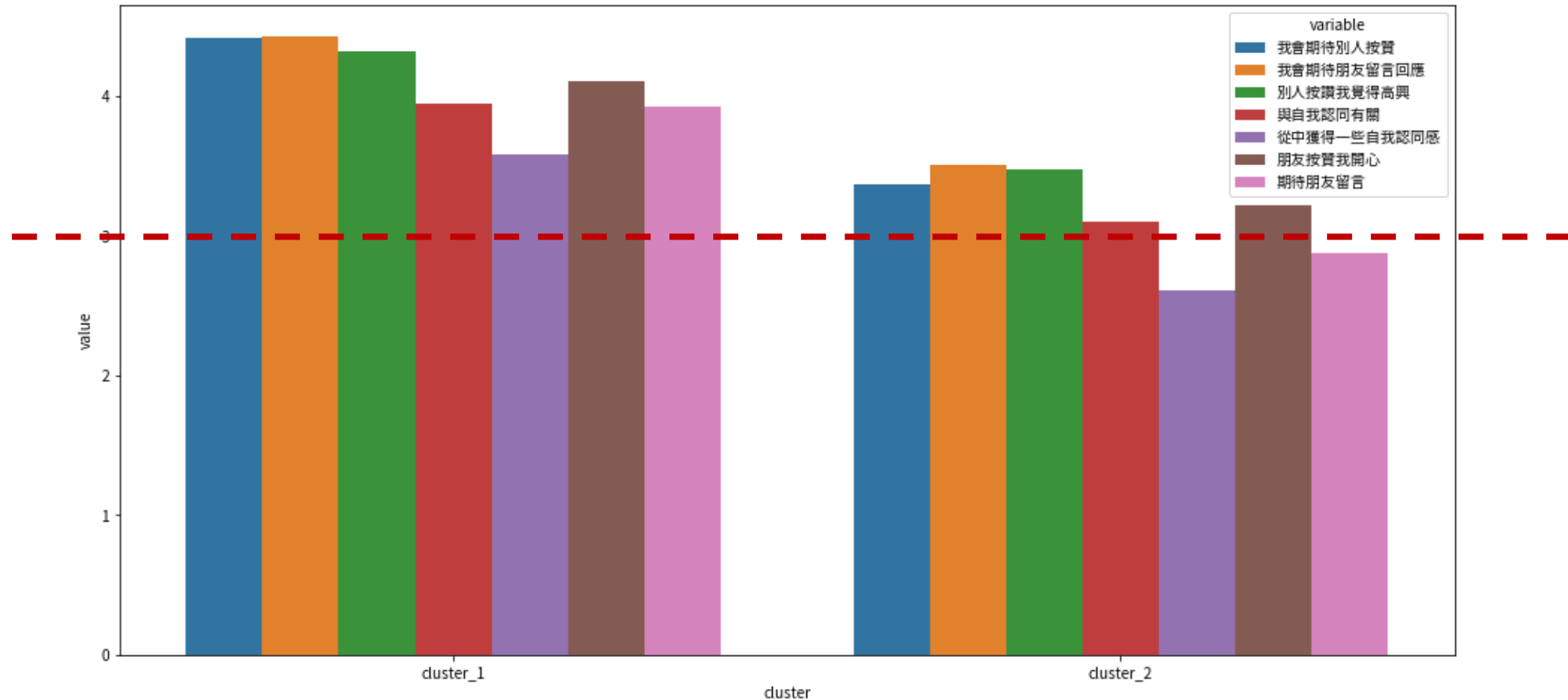
Based on these features we manage to find 2 clusters within the pool and grasp the image of the Independent & Indifferent types.

The Behavioral Differences
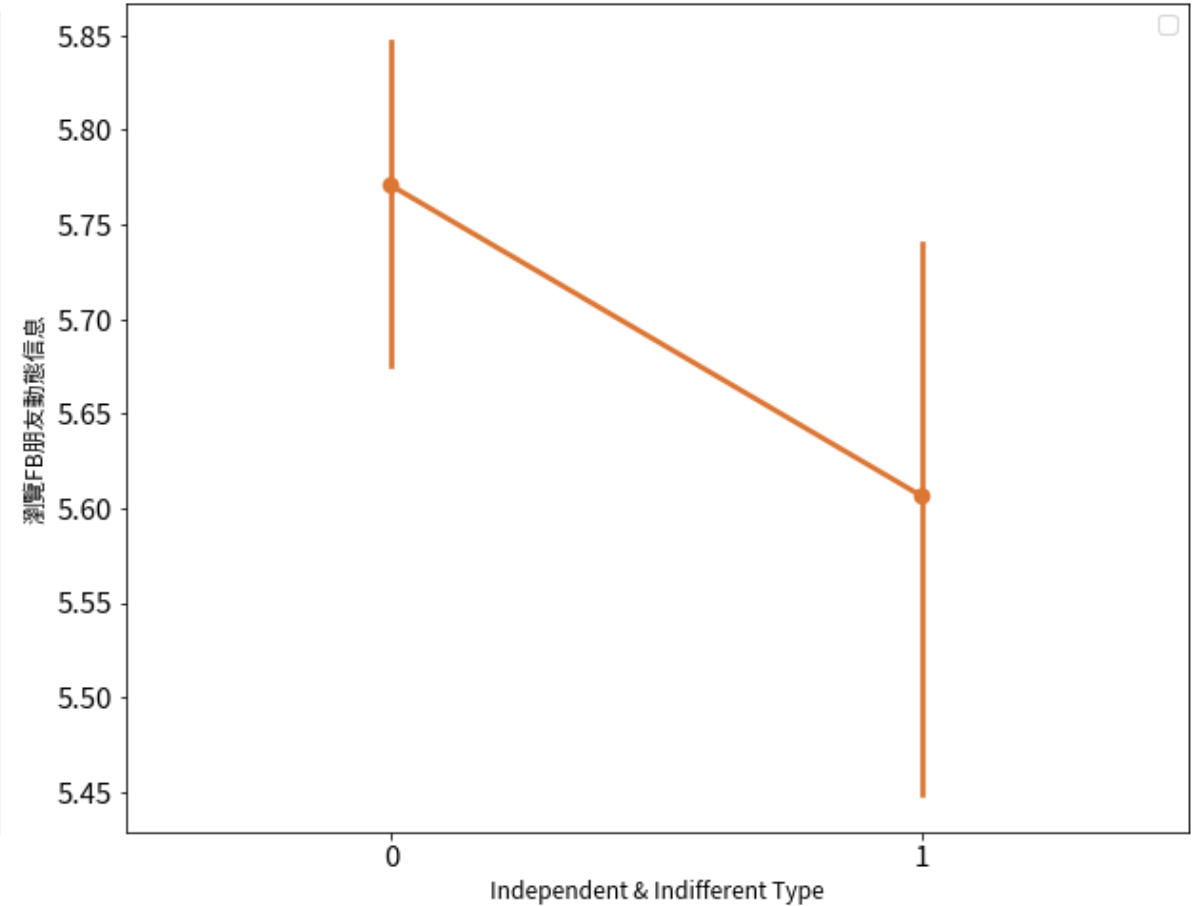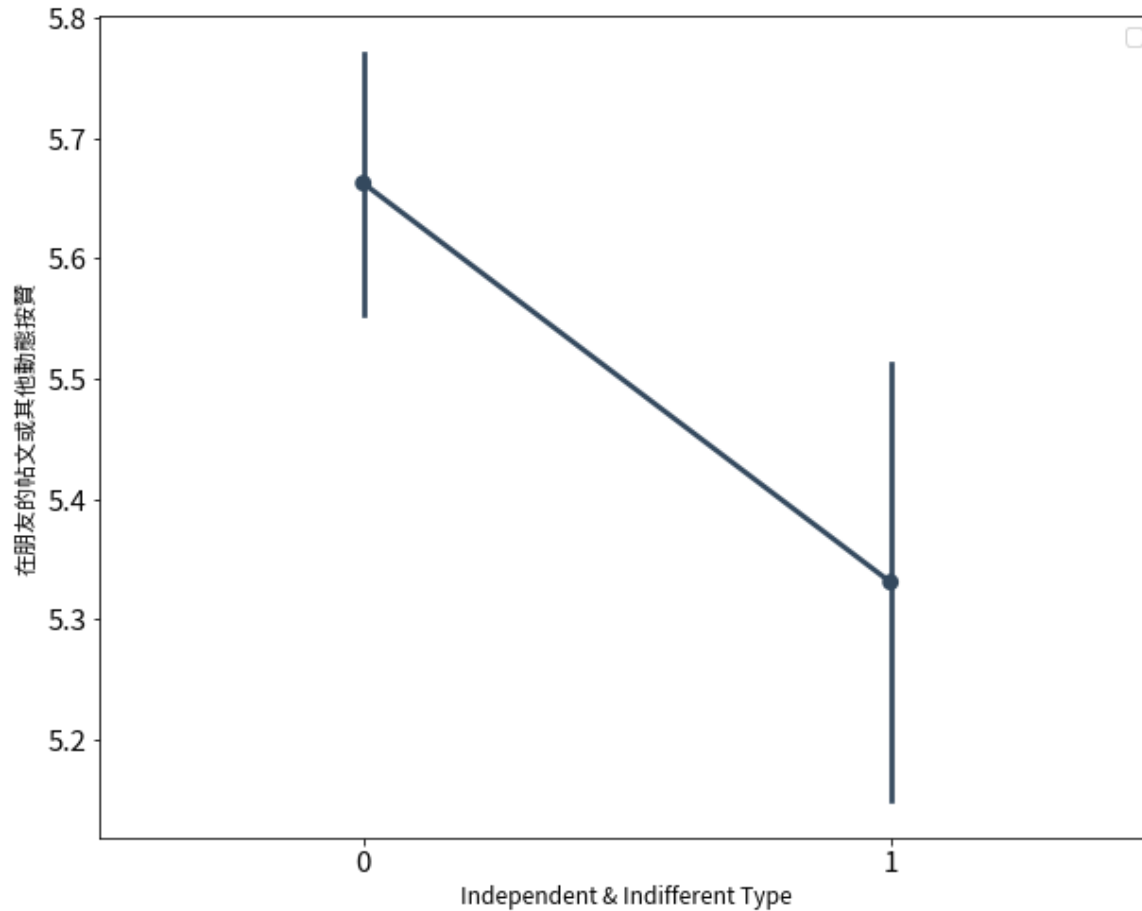
The disparity of the first ("在朋友的貼文或其他動態按贊") is significant.
The results, again, fit the model predictions.

THE
NEUROTIC PERSONALITY
OF OUR TIME

BY
DR. KAREN HORNEY

New York
W·W·NORTON & COMPANY·INC·
Publishers

Karen Horney (1885-1952)
& The Basic Anxiety Theory

Neurotic Personalities & Neurotic Needs

Moving Toward People (Compliance)

•The need for affection and approval; pleasing others and being liked by them.

•The need for a partner; one whom they can love and who will solve all problems.

•The need for social recognition; prestige and limelight.

•The need for personal admiration; for both inner and outer qualities—to be valued

Moving Against People (Aggression)

•The need for power

•The need to exploit others

Moving Away from People (Withdrawal)

•The need for personal achievement
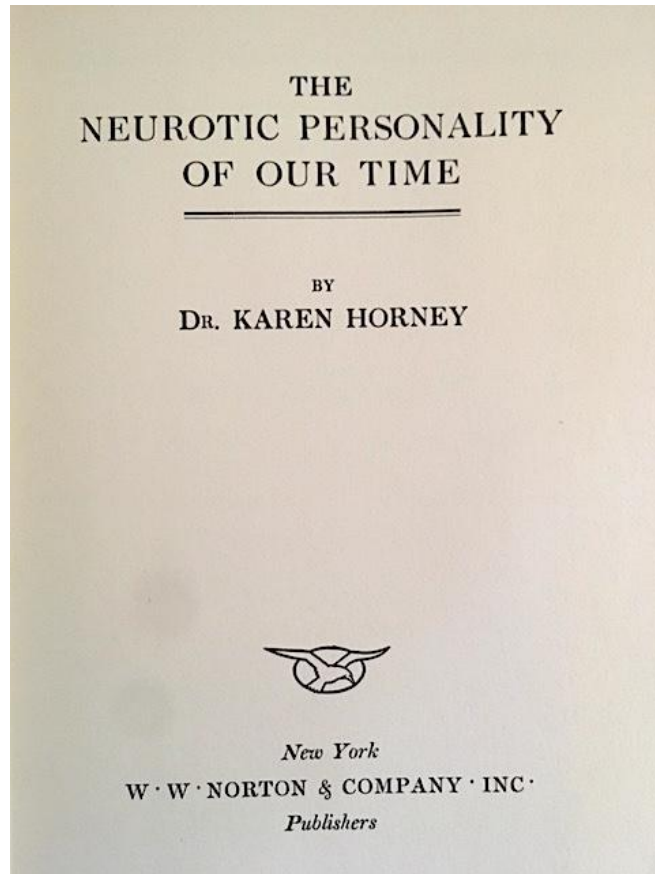
•The need for self-sufficiency and independence

•The need for perfection

•The need to restrict life practices to within narrow borders

"Every person, to the extent that he is neurotic, is like an airplane directed by remote control."

- Karen Horney, Neo-Freudian Psychologist -

Outline

User Profiling & Behavioural Targeting
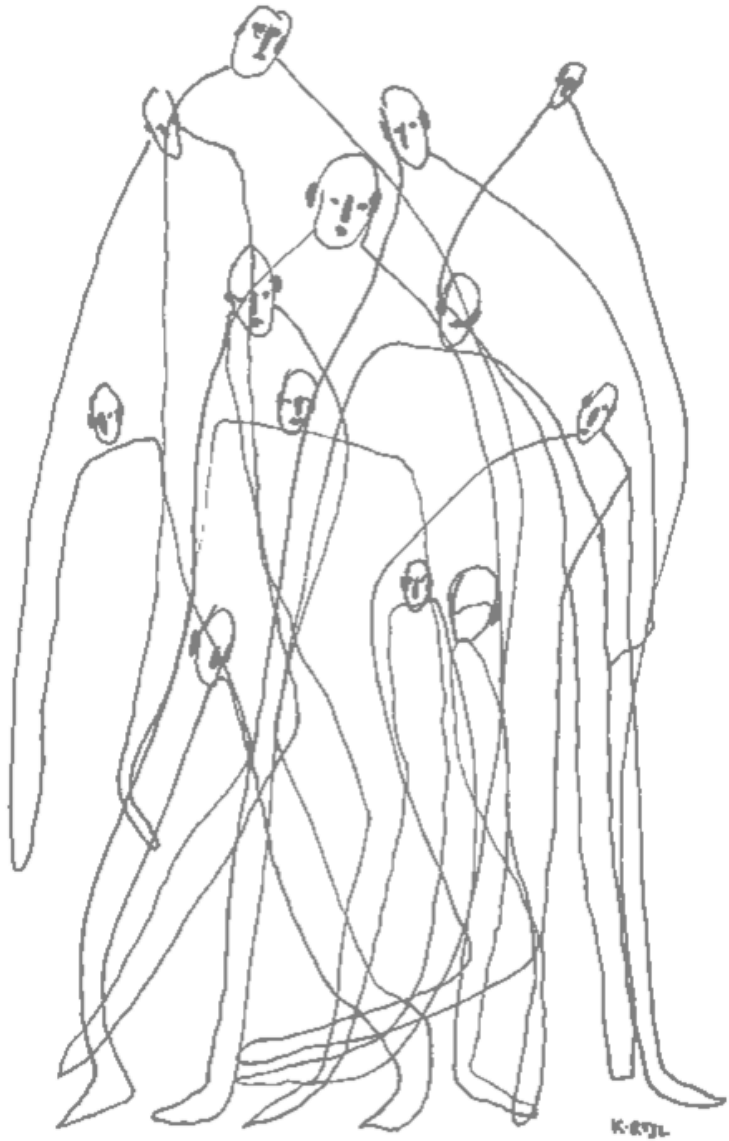
Cyber Psychological Hygiene
– Help & Interference

Outline

Theoretical Foundation

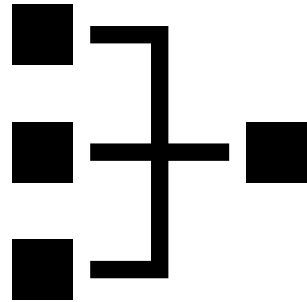Cyber Behavior Under The Game Theory Framework

Empirical Findings

Practical Implications

Limitations

The Fall of FB Among the Young Population

The Problem of the Archive Data
& The (Not So Sophisticated) Psychological Assessment & Inference

'讚數不到預期會讓我失望' is one of the components of the manifestation of Anxiety.

They are correlated but not perfect substitutes for each other.

More Relationships to be Made Clear

	👍 (blue)	👍 (grey)
👍 (blue)	A	$-B$ $-\gamma R_S$
👍 (grey)	A $-\alpha R_S$	$-\beta R_S$

$0 < \gamma < \beta$

This assumption is to be tested or validated with a more sophisticated experimental design.

The research of Reject Sensitivity is rare under the context of cyber behaviour.

"Let me say to begin with: It's not neurotic to have conflict… Conflicts within ourselves are an integral part of human life."

- Karen Horney, Neo-Freudian Psychologist -

Thank

FOR WATCHING AND LISTENING

You