

# **THE EFFECTS OF A MOBILE VISITORS GUIDE ON USER BEHAVIOR IN THE MUSEUM**

**EVA 2012**

**The 9th Jerusalem Conference on the  
Digitization of Cultural Heritage**

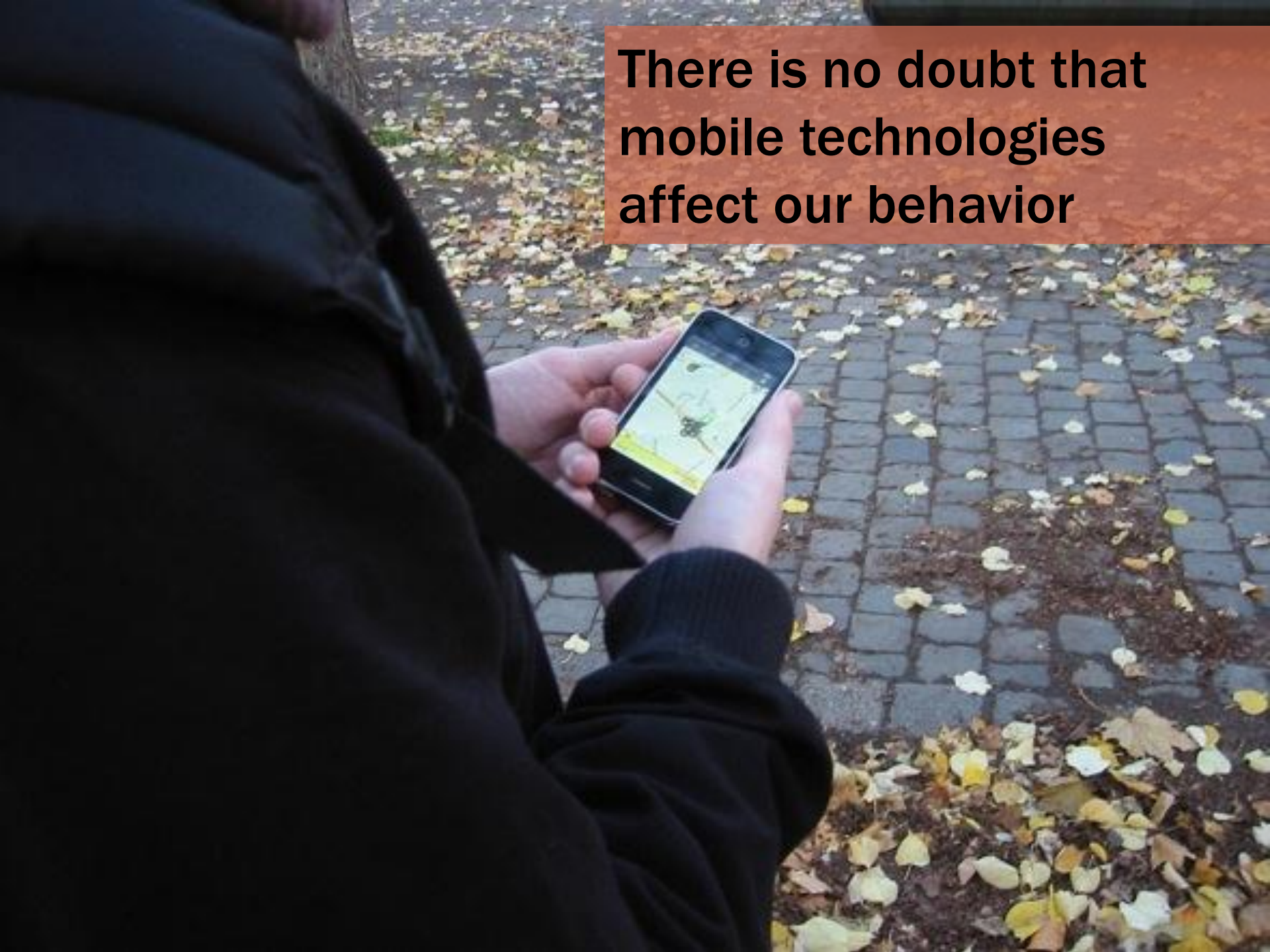
**Joint work with:**

**Dr Tsvi Kuflik, Dr Joel Lanir, and Eyal Dim**

**Alan J. Wecker**

**University of  
Haifa**

**There is no doubt that  
mobile technologies  
affect our behavior**



# How does the use of the guide affect user experience and user behavior?







# MEASURING USER BEHAVIOR IN A MUSEUM



# MEASURING USER BEHAVIOR IN THE MUSEUM

- Visitor circulation (Bitgood, 1992, 2006)
- Use of signage and labels (McManus, 1996)
- Interaction with exhibits (Yalowitz & Bronnenkant, 2009)
- Social interaction (Leinhardt & Knutson, 2004)

# MEASURING USER BEHAVIOR IN A MUSEUM

- **Attraction power** the relative incidence of people who have stopped in front of an object or an exhibit during their visit.
- **Holding power** measures the average time spent in front of an exhibit.

# CLASSIFYING VISITOR MOVEMENT STYLES

- Veron and Levasseur (1983) classified visitor movements into four styles:



**ant**



**fish**



**grasshopper**



**butterfly**



מודל של הנמל הפוניקי של אדלית  
Model of the Phoenician Harbor at Adhit

המודל מראה את הנמל הפוניקי של אדלית, שהיה אחד מהנמלים החשובים ביותר של האימפריה הפונית. הנמל כולל מספר רב של ספינות, כולל ספינות מלחמה וספינות מסחר, וכן מבנים שונים המשמשים כמחסנים ומוקדים מסחריים. המודל מוצג על גבי אבן יסודית, המראה את המבנה האמיתי של הנמל.



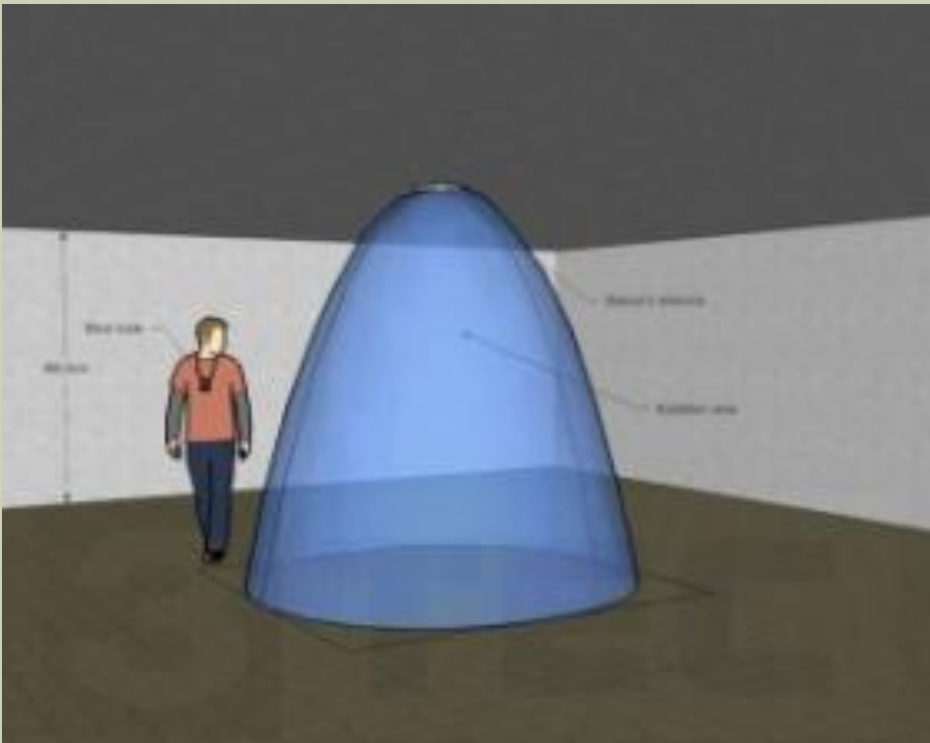
אדלית: אדריכלות ונמל  
Installation

התצוגה מציגה את אדלית, הנמל הפוניקי הגדול ביותר שנחנך. התצוגה כוללת מודלים של מבנים, ספינות וציוד נמלי, הממחישים את חשיבות הנמל בתרבות הפונית. התצוגה מוצגת על גבי אבן יסודית, המראה את המבנה האמיתי של הנמל.



# INDOOR POSITIONING

- RF-based system
- Beacons
- Blinds



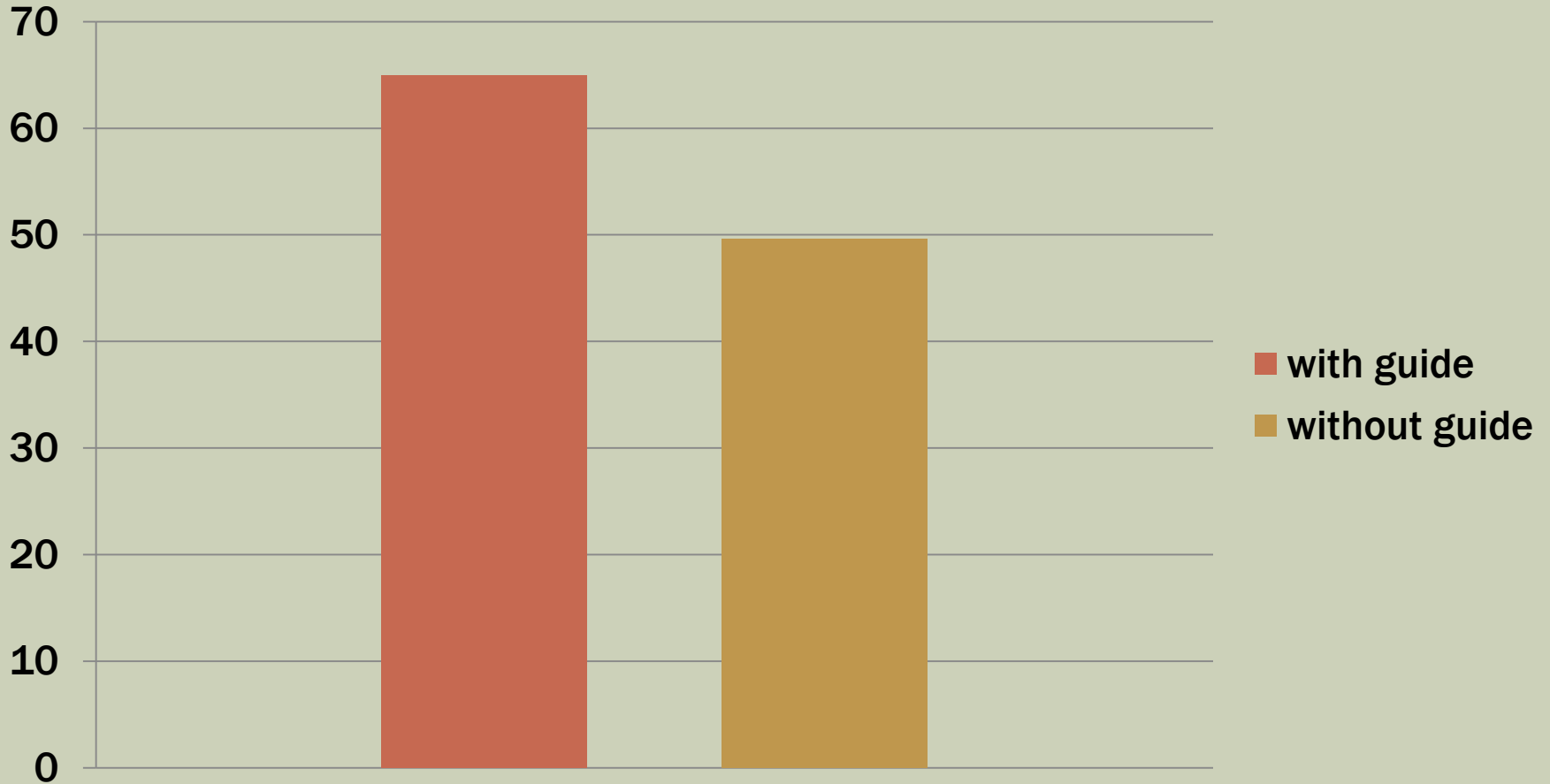
# FIELD STUDY

- 10 month study
- Participants: actual museum visitors
- Between-subject design
  - 252 users using the guide
  - 152 users without the guide
- Measures:
  - Mostly log data
  - Questionnaires after the visit

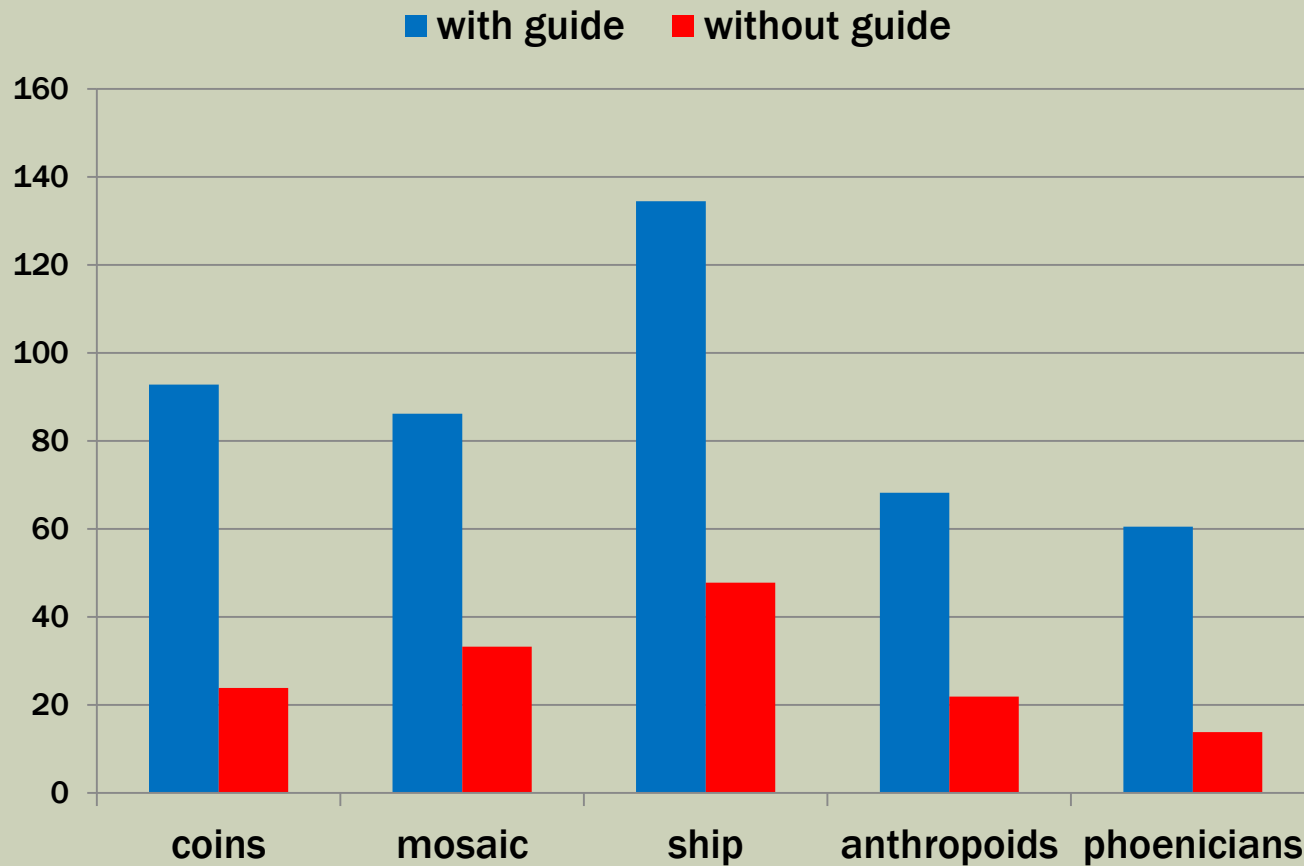
# RESULTS



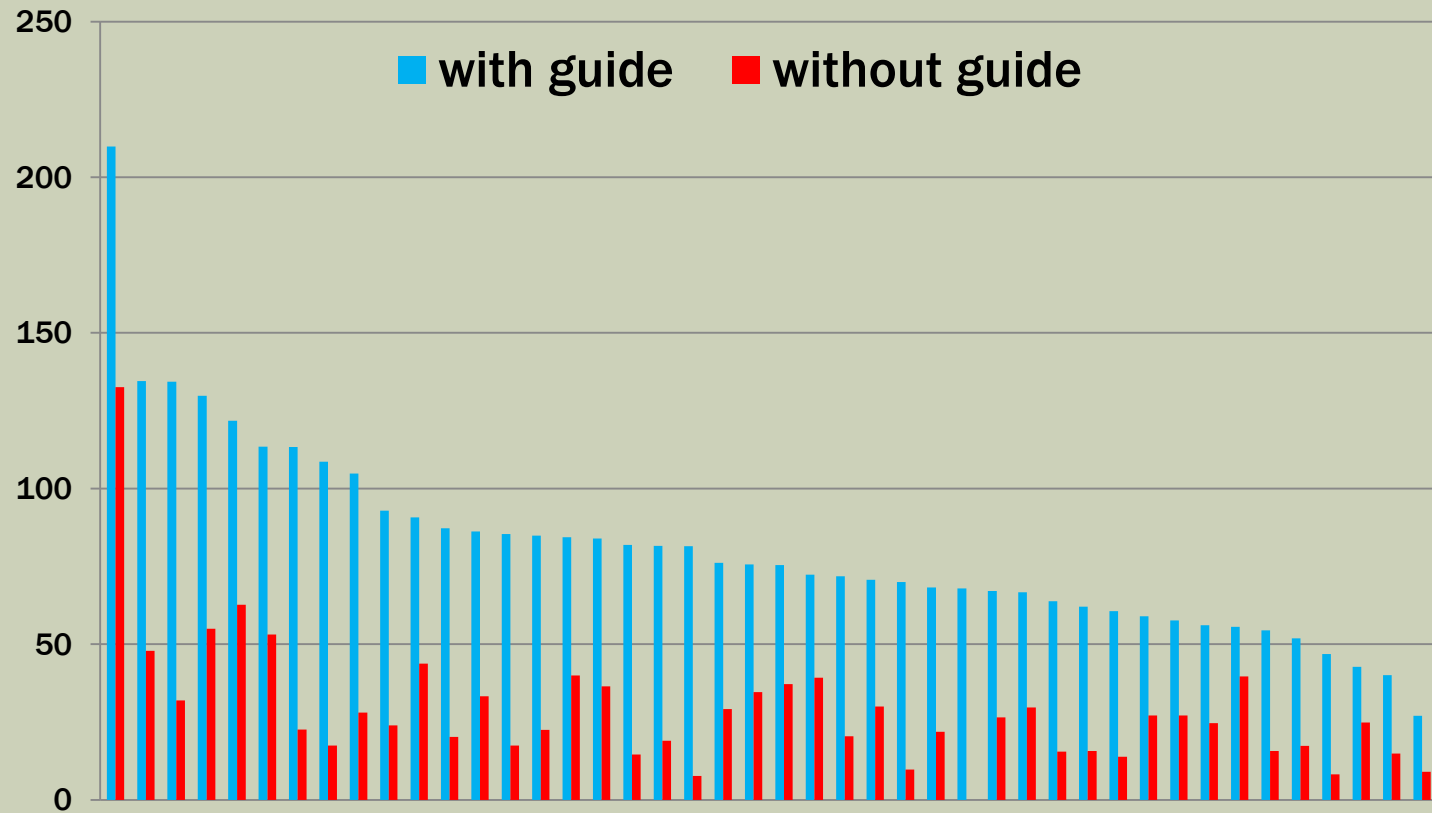
# TOTAL VISIT TIME



# HOLDING POWER

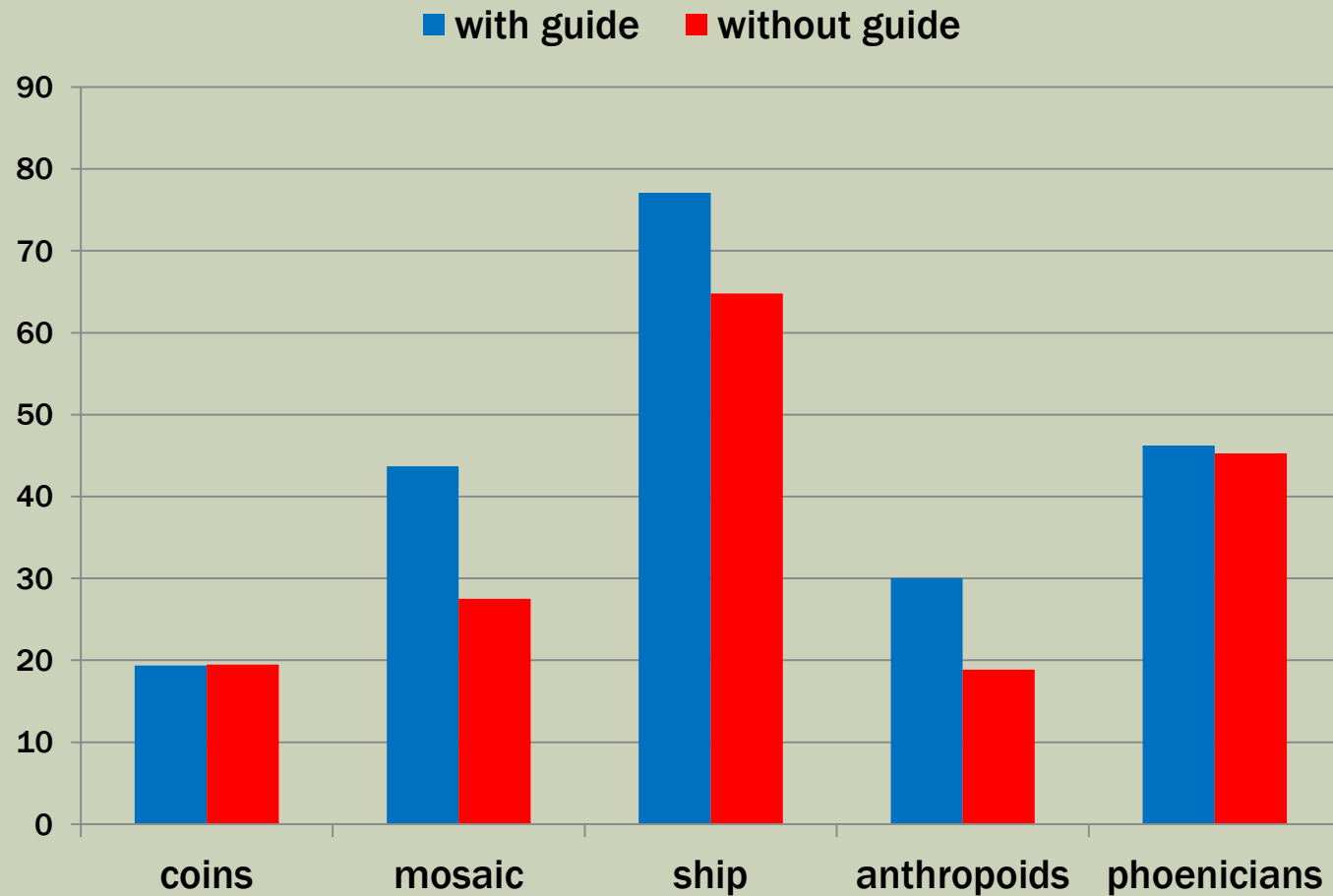


# HOLDING POWER



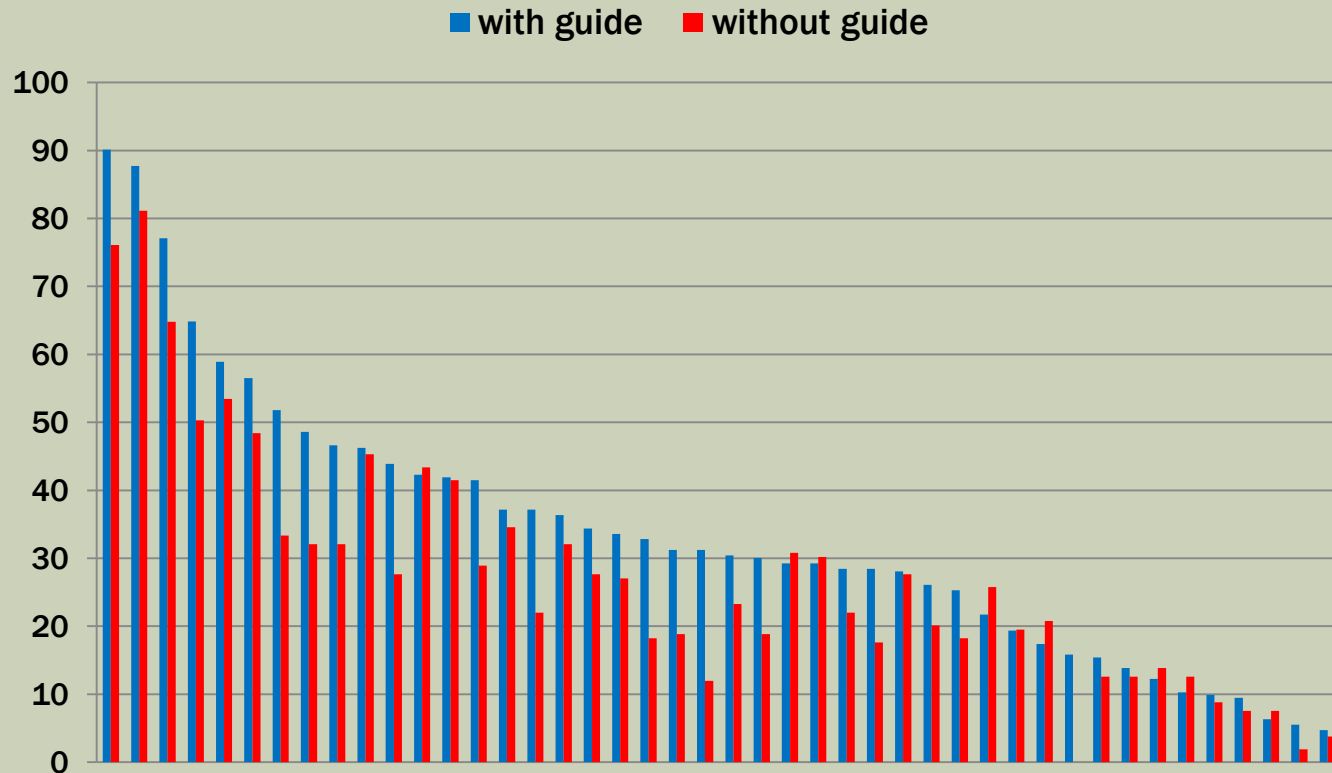
Average time in seconds a visitor spent with and without the guide (holding power) in all exhibits sorted according to time spent with the guide (left)

# ATTRACTING POWER



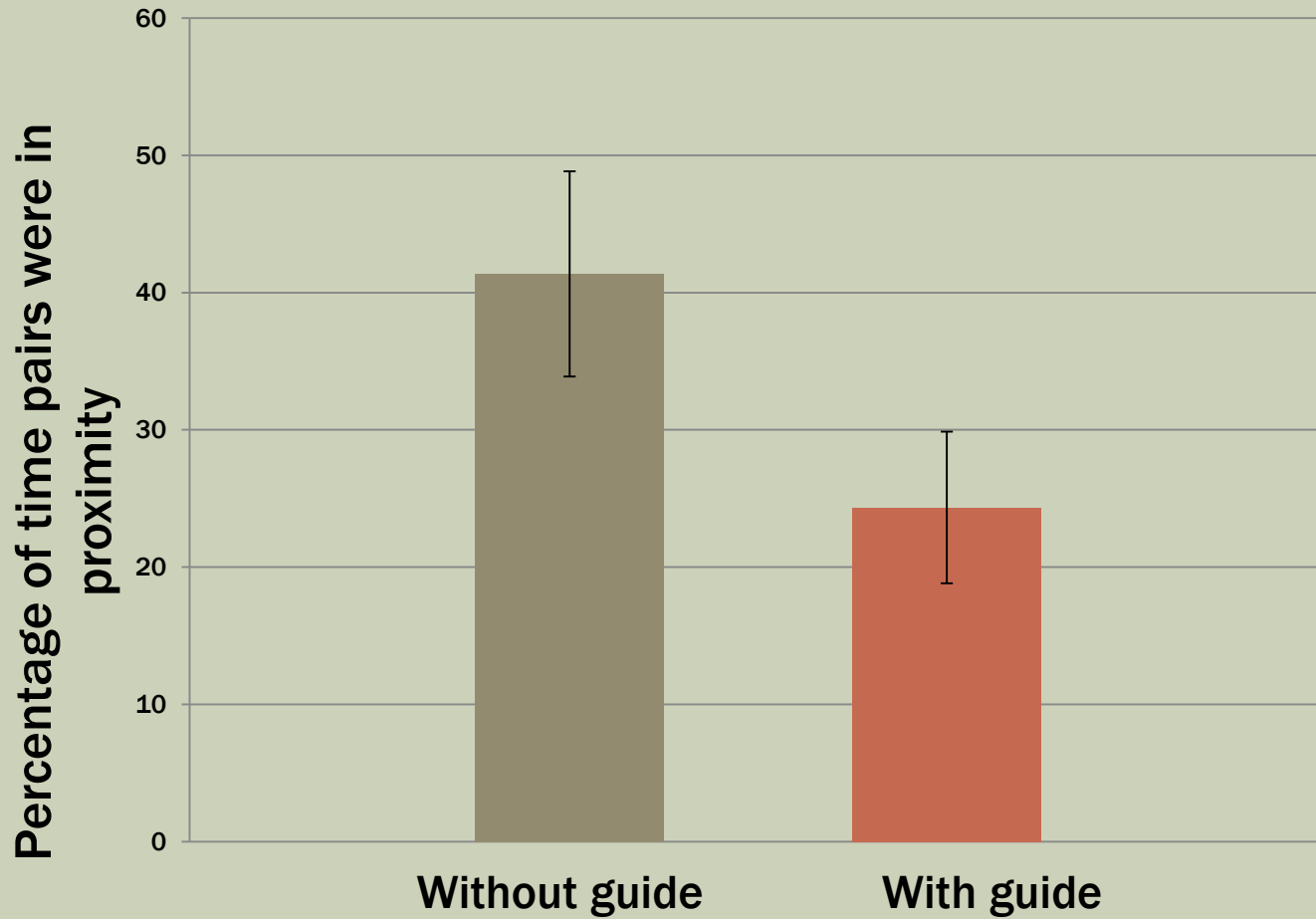


# ATTRACTING POWER



Percentage of visitors that attended an exhibit (attraction power) with and without the guide in all exhibits sorted according to attraction power with the guide

# GROUP ANALYSIS



# GROUP ANALYSIS

Group size	With guide			Without guide		
	N	Pairs (%)	All group (%)	N	Pairs (%)	All group (%)
2	41	24.34		39	41.35	
3	3	17.6	13.1	4	34.4	28.2
4	6	15.6	9.2	3	37.0	12.4

# GROUP ANALYSIS

Talking:

With guide: **9.1%** of the time

Without guide: **11.6%** of the time



# VISITOR ATTITUDES

Statement	With guide			Without guide		
	All visitors (N=242)	Visiting alone (N=133)	visitors in groups (N=107)	All visitors (N =140)	Visiting alone (N=51)	visitors in groups (N=89)
I felt that I control where I go to and what I see in the museum	5.32 (1.74)	5.34 (1.76)	5.30 (1.72)	5.51 (1.52)	5.53 (1.47)	5.50 (1.56)
I would like to visit the museum again	6.18 (1.41)	6.26 (1.36)	6.08 (1.48)	6.03 (1.36)	6.13 (1.18)	5.98 (1.40)
The visit was fun	5.94 (1.28)	6.08 (1.17)	5.75 (1.40)	6.03 (1.19)	5.95 (1.20)	6.06 (1.19)
I learned a lot during the visit	5.90 (1.46)	6.02 (1.43)	5.73 (1.49)	5.56 (1.36)	5.59 (1.39)	5.54 (1.37)
I was happy with the visit to the museum	6.23 (1.22)	6.29 (1.04)	6.15 (1.39)	6.16 (1.06)	6.06 (0.94)	6.22 (1.11)

# CONCLUSIONS

- Using a mobile guide increased visit time
- The mobile guide monopolized visitor's time
  - Both holding power and attraction power increased
- The use of the guide disrupted the social interaction of visitors coming in a group

# THANK YOU

Alan J. Wecker

University of Haifa

ajwecker@gmail.com



## Questions?