



Honey bees dance at their own beats

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Mohamed Alburaki, Ph.D.
Honey bee Genetics and Behavior
USDA-ARS Bee Research Laboratory
Mohamed.alburaki@usda.gov



The Honey bee

Apis mellifera L.

- 50 million years in the making
(Michener and Grimaldi, 1988)
- 4 Evolutionary lineages
(Ruttner, 1988)
- 33 different subspecies
(Ruttner et al., 1988; Ilyasov et al., 2020)





C1
38.76 %



C2j
37.63 %



A4p
0.94 %



Task Distribution





INDIVIDUALISM (Primitive behavior)

1. Fulfilling one's own needs

COLLECTIVISM (Building society)

1. Hive cleanness / sterilization / Hygienic behavior
2. Feeding brood / Larvae
3. Guarding hive entrance
4. Building wax combs
5. Hive thermoregulation (winter clusters)
6. Attending to the queen's needs
7. Foraging: water, nectar, pollen, propolis
8. Initiating process of queen supersedure
9. Synchronizing swarming process
10. Self-expulsion from the hive (disease/illness)

حَسَنًا إِنَّ فِي ذَلِكَ لَآيَةً لِّقَوْمٍ يَعْقِلُونَ ﴿٦٧﴾ وَأَوْحَىٰ رَبُّكَ إِلَى النَّحْلِ
أَنِ اتَّخِذِي مِنَ الْجِبَالِ بُيُوتًا وَمِنَ الشَّجَرِ وَمِمَّا يَعْرِشُونَ ﴿٦٨﴾ ثُمَّ

16:69

And thy Lord has inspired the bee, saying, 'Make thou houses in the hills and in the trees and in the trellises which they build.'

Honey bee Social Behaviors:

1. Invitation to cluster and regroup
2. Collective Hygienic Behavior
3. Inner Hive Thermoregulation
4. Honey bee Waggle Dance



1- Fanning Pheromone “Clustering”



2- Cleaning/Sterilizing Entrance “Hygiene ”



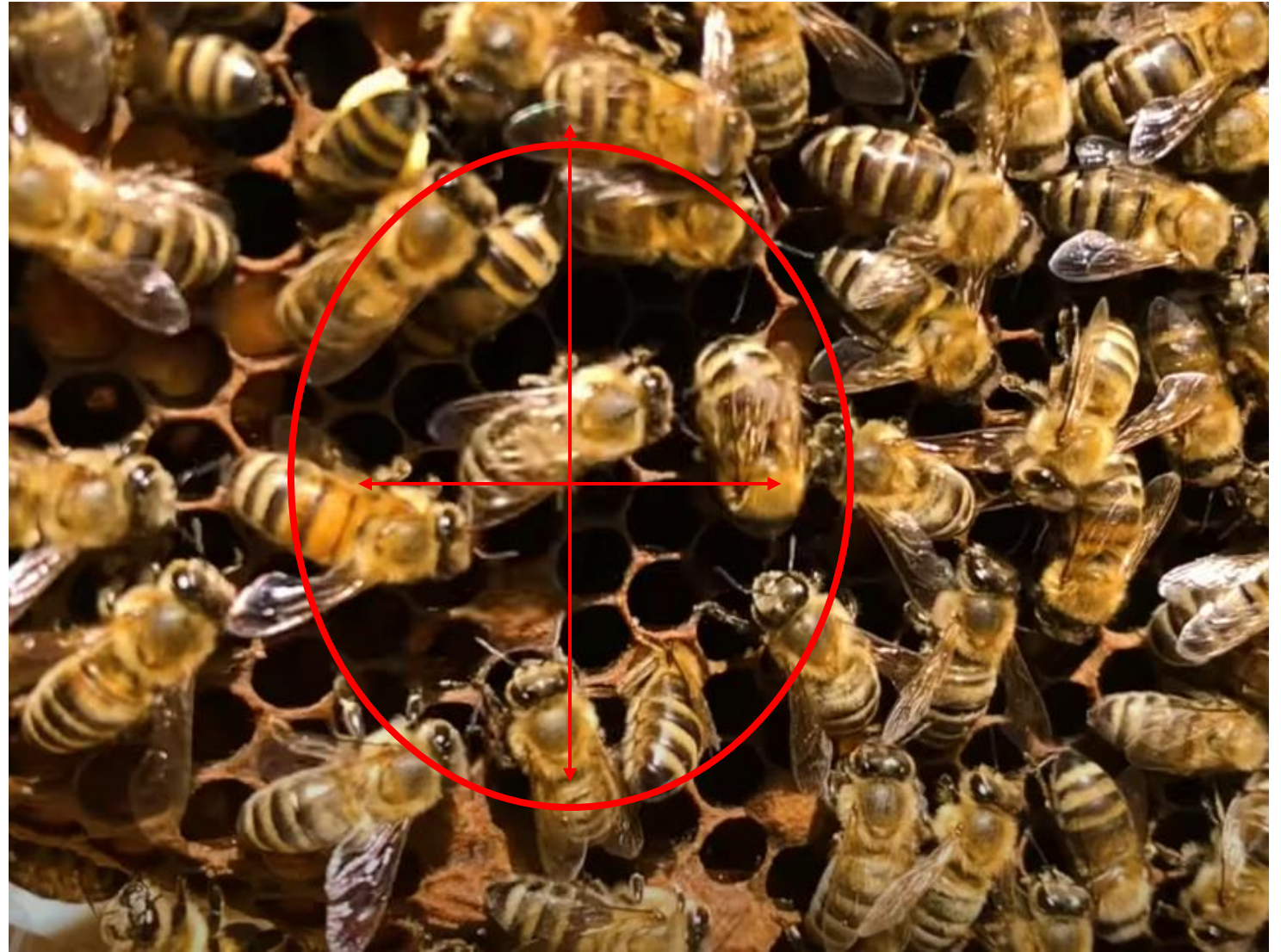
3- Thermoregulation



Failure to
thermoregulate?
“Evacuation”

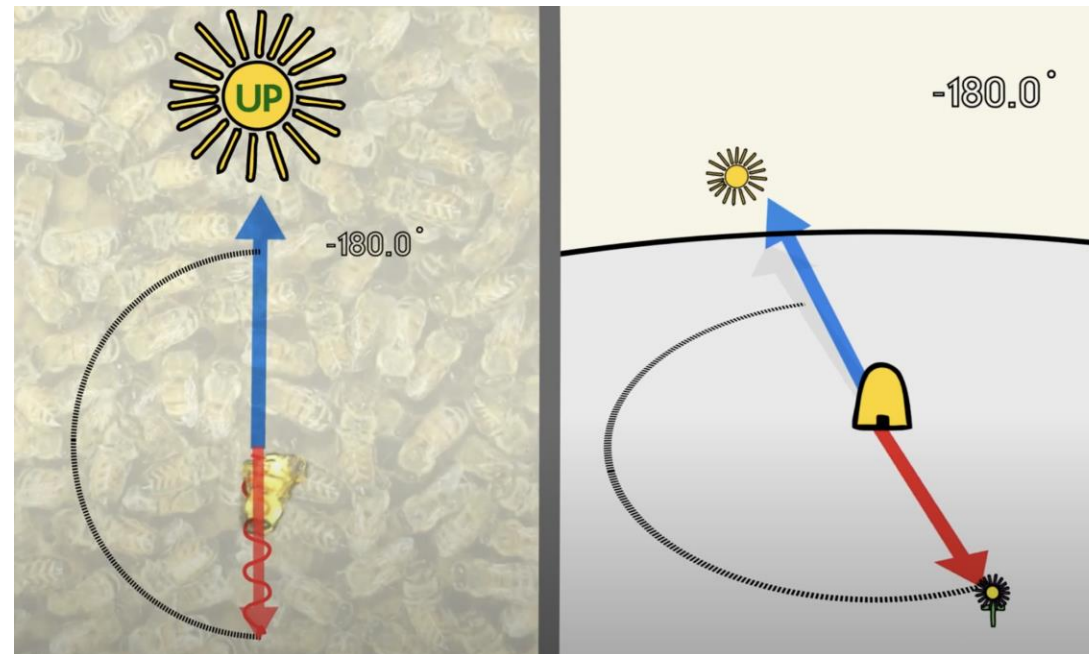
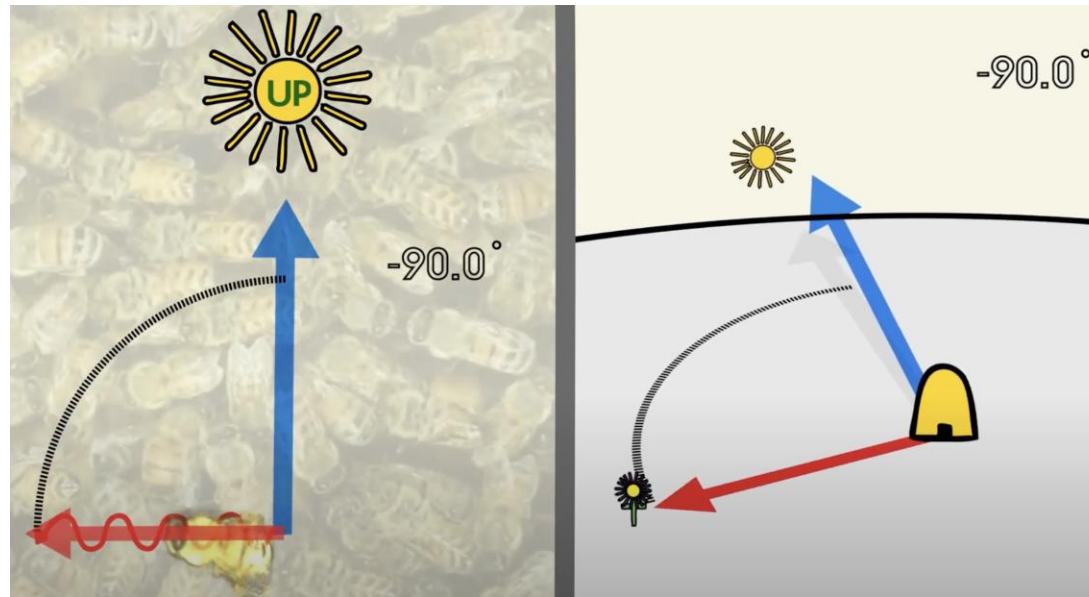


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- 4- Waggle Dance:
Informing other mates on
forage locations





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