

Chauvinism and Solidarity within a *Solenopsis invicta* Group as an Origin of Patriotism: A Hypothesis

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Abstract

Aim: Here we conduct a field-experiment to test a hypothesis about the degrees both of positive and negative level of patriotism in a *Solenopsis invicta* group to answer a question about: what is the determinant factor which produces patriotism between chauvinism or sense of solidarity.

Methods: We applied behavioral techniques such as providing food stimulus treatment (glucose), food robber, and a friend who was injured in a controlled manner. In first stage (1), we put a piece of candy near a crowd of fire ants. In second stage (2), we tried to rob the candy with a small wooden stick. In third stage (3), we deliberately injuring one of ants with a wooden stick as we continued to rob the candy. Then we calculated two types of responses: A) Negative responses (chauvinism) such as defend the candy from robber (self fish) and attacking the robber (wooden stick), and B) Positive response (solidarity) such as swarming pieces of candy without a fight but sharing and helping the injured (victim one).

Results and Discussion: In first stage (1), there were ants swarming pieces of candy without a fight. In second stage (2), a crowd of fire ants group trying to defend the candy while another group attacked our stick. In third stage (3), a group of ants swarming to help the injured (victim one) while several others still fighting for their candy from our wooden stick. In all responses, they behave negatively 60% and positively 40%. Its meant that the level of chauvinism was more higher than sense of solidarity in this group.

Conclusion: These findings may let us to propose a hypothesis that patriotism seems was more established based on chauvinism than sense of solidarity. It may have natural implications to human behavior that patriotism in all nation was more established based on the need to defend all survival matter including food territories by race instinct than positive traits such as sense of solidarity. Sense of solidarity may exist and has a role in patriotism but in a smaller level than chauvinism. In hope, as human, we could promote our sense of solidarity as a natural inheritance more than chauvinism to make the better life.

Keywords: Chauvinism; Solidarity; *Solenopsis invicta*

Introduction

Patriotism often to be a reason behind a war. Could we stop it or just let it happen unstoppable? As a science of life, biosciences could explain it and contribute any idea to make the better life by looking for its root and mechanism in nature. May we should addressed some questions first before observed the nature such as where does patriotism come from naturally? Is it specific as a human behavior or not? How about its origin? Word of patriotism may has both of positive and negative implication to its meaning. As a positive word then it could refers to sense of solidarity or fraternity but as a negative word then it could refers to chauvinism or rasism [1]. For sure, when it called as a chauvinism then it has negative impacts to its environment, and when it called a solidarity then it has positive impacts to its own group and its environment. As a comparative instance to human behavior, here we try to look another species such as a *Solenopsis invicta* (fire ant) group as a model to test a hypothesis about the origin of patriotism based on assumption that human and the insect have similarity as social species in some ways according below previous findings.

Previous findings shown that although *S. invicta* (fire ant) is a species that can has a negative impact on biodiversity (the other types of species that receive negative impact of this species includes 22 species of birds, one amphibian species, 18 species of reptiles and some of plant seeds [2]. But these species may also have a positive traits due to they are social species that have the rafting behavior [3] so as to give the possibility to control it in a large group or community scale. However, this species has some genetic variation [4], so it is necessary to first identify the type of group to anticipate possible social responses

that differ between groups although one with another group received the same treatment [5].

Based on findings above, here we conduct a field-experiment to test a hypothesis about the degrees both of positive and negative level of patriotism in a *S. invicta* group to answer a question about: what is the determinant factor which produces patriotism between chauvinism or sense of solidarity. In other words, we test whether the degree of chauvinism in *S. invicta* will higher or lower than its solidarity.

Methods

We choose to conducted our field-experiment in a house open-garden of Taman Himalaya Lippokarawaci Tangerang Indonesia at 15.00 pm (evening) due to we only found a crowd of *Solenopsis invicta* incidentally. The independent variables here were: A) A piece of candy (glucose) stimulus, B) Food robbers by a small wooden stick, and C) Friends who were injured. The dependent variables here were:

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A) Chauvinism as negative responses to stimuli, and B) Solidarity as positive responses to stimuli. These treatments be given to the crowd in 10 repetitions. This experiment was recorded by using Canon A2300 video camera.

Procedures

In first stage (1), we put a piece of candy near a crowd of fire ants (Figure 1). In second stage (2), we tried to rob the candy with a small wooden stick (Figure 2). In third stage (3), we deliberately injuring one of ants with a wooden stick as we continued to rob the candy (Figure 3). Then we described their responses into two groups to made the calculation more easier as below mention:

Negative (-) responses (Chauvinism)	Positive (+) response (Solidarity)
Defend the candy from robber (self fish)	Swarming pieces of candy without a fight but sharing
Attacking the robber (wooden stick)	Helping the injured (victim one)

Results and Discussion

In 10 repetitions, their response seems constanly (100%). In first stage (1), there were ants swarming pieces of candy without a fight but sharing. In second stage (2), a crowd of fire ants group trying to defend the candy while another group attacked our stick. In third stage (3), a



Figure 1: Stage 1.



Figure 2: Stage 2.

group of ants swarming to help the injured (victim one) while several others still fighting for their candy from our wooden stick (Table 1).

Based on the data above then we compare the level of positive and negative response among them. In first stage, they behave positively 20%. In the second stage, they behave negatively 40%. In the third stage, they behave positively 20% and negatively 20% (Figure 4). In all responses, they behave negatively 60% and positively 40%. Its meant that the level of chauvinism was more higher than sense solidarity in this group.

Conclusion

These findings may let us to propose a hypothesis that patriotism

No.	Responses	Description	Stage		
			1	2	3
1	Negative response	Defend the candy from robber		√	√
		Attacking the robber (wooden stick)		√	
	Positive response	Sharing pieces of candy without a fight	√		
2	Negative response	Helping the injured (victim one)			√
		Defend the candy from robber		√	√
	Positive response	Attacking the robber (wooden stick)		√	
3	Negative response	Sharing pieces of candy without a fight	√		
		Helping the injured (victim one)			√
	Positive response	Defend the candy from robber		√	√
4	Negative response	Attacking the robber (wooden stick)		√	
		Sharing pieces of candy without a fight	√		
	Positive response	Helping the injured (victim one)			√
5	Negative response	Defend the candy from robber		√	√
		Attacking the robber (wooden stick)		√	
	Positive response	Sharing pieces of candy without a fight	√		
6	Negative response	Helping the injured (victim one)			√
		Defend the candy from robber		√	√
	Positive response	Attacking the robber (wooden stick)		√	
7	Negative response	Sharing pieces of candy without a fight	√		
		Helping the injured (victim one)			√
	Positive response	Defend the candy from robber		√	√
8	Negative response	Attacking the robber (wooden stick)		√	
		Sharing pieces of candy without a fight	√		
	Positive response	Helping the injured (victim one)			√
9	Negative response	Defend the candy from robber		√	√
		Attacking the robber (wooden stick)		√	
	Positive response	Sharing pieces of candy without a fight	√		
10	Negative response	Helping the injured (victim one)			√
		Defend the candy from robber		√	√
	Positive response	Attacking the robber (wooden stick)		√	
Total	Negative response	Sharing pieces of candy without a fight	√		
		Helping the injured (victim one)			√
	Positive response	Defend the candy from robber		10	10
Total	Negative response	Attacking the robber (wooden stick)		10	10
		Sharing pieces of candy without a fight	10		
	Positive response	Helping the injured (victim one)			10

Table 1: Negative (-) and positive (+) responses in 3 stages.

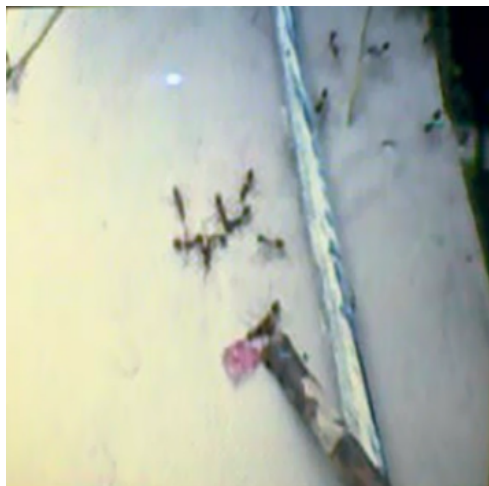


Figure 3: Stage 3.

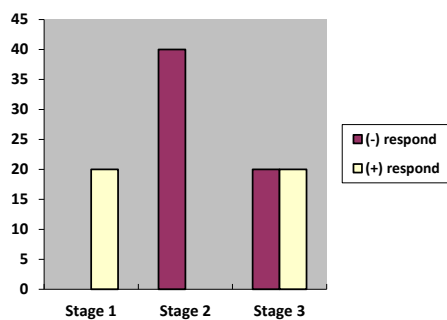


Figure 4: Level (%) of negative (-) and positive (+) responses in 3 stages.

seems was more established based on chauvinism than sense of solidarity. It may have natural implications to human behavior that patriotism in all nation was more established based on the need to defend all survival matter including food territories by race instinct than positive traits such as sense of solidarity. Sense of solidarity may exist and has a role in patriotism but in a smaller level than chauvinism. In hope, as human, we could promote our sense of solidarity as a natural inheritance more than chauvinism to make the better life.

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