KLEPTOPARASITISM OF INDIAN HOUSE CROW (*CORVUS SPLENDENS*)

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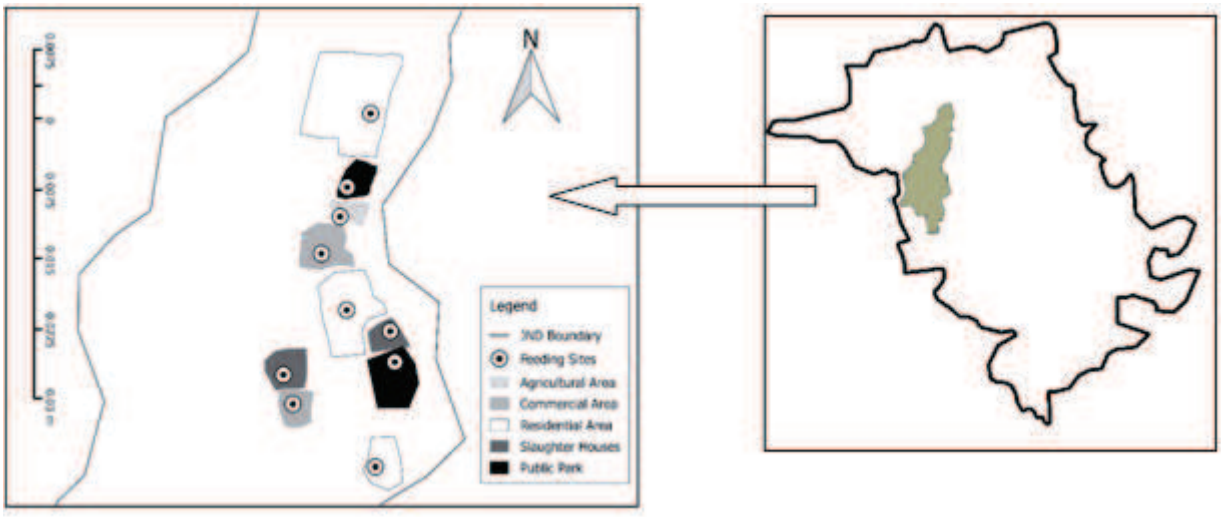
Abstract: Kleptoparasitism refers to the stealing of food. We investigated the occurrence of this feeding strategy in House crow (*Corvus splendens*). Study was conducted at Junagadh (Lat. 21° 30'N to Long. 70° 28') having population of 1,702 house crows. Total ten feeding sites were identified and events of kleptoparasitism were recorded. During study period total 1,023 (643 attempts and 380 successful) events of kleptoparasitism were observed. Rate of success was of 37% from total kleptoparasitisms. Kleptoparasitism was dependent on decreased amount of carnivore food (specifically) (r^2 = 0.9481). Maximum events were recorded for the food of slaughter waste at slaughter houses (610 events) while only 12 events were for plant products. Success of rate was not influenced on the numbers of house crows present. Kleptoparasitic events were mostly aimed within the species while black kites were chased less often. Maximum success was found with cattle egret (47 %) while lowest with black kite (17 %). Therefor success rate was independent on type of bird species chased.

Keywords: House Crow, Junagadh, Kleptoparastism,Slaughter houses.

Introduction: Birds belonging to corvidae family, including many species of crows, are known for superior brain capacity [2] with high cognitive abilities comparable to non-human primates. Kleptoparasitism is defined as the stealing of food [5],[6]. Rothschild and Clay (1952) first describe kleptoparasitism, the stealing of food by individuals of one species from individuals of another. Kleptoparasitism is also referred to as 'piracy' by many authors [3]-[6]as well as 'food parasitism'[11], 'pilfering' [16] and also as 'robbery' [13]. This behavior is known to occur in many taxa from mammals [9], [10] and fish [15] to invertebrates[12], [20] but it is widely spread and most studied in birds [7], [17]. In the present research work, we had investigated the kleptoparasitic behavior of house crow (*Corvus splendens*). House crow is documented to be highly adaptive to the urban environment [14], [19]. House crow consumes everything which is edible; ranging from garbage,man's rubbish, rodents like rats, squirrel, mice, fruits grains, fish, small animals like insects, crabs, lizards [1], [23].House crow is known as cleaver and intelligent bird so it is interested whether this bird is depended on effortless strategies for getting food. One of such strategy called kleptoparasitism is investigated here. This behavior is not studied yet in house crow as far in our knowledge.

Study Area: Study was conducted in Junagadh city (Lat. 21° 30'N to Long. 70° 28') of Gujarat state. Junagadh has a tropical wet and dry climate having spread over area of 59 sq.km (Fig 1.1). It is situated at the foot hills of the Girnar where population of House Crows is approximately 1,702.



1.1 (A) Map of Junagadh city showing ten feeding sites (B) Map of Junagadh District

Method: Study area was surveyed and total ten feeding sites were identified. Study was conducted from March 2013 to July 2013. Feeding sites were visited regularly in the morning from 7:00 to 10:00 when house crows were leaving their roosting sites and gathering at their

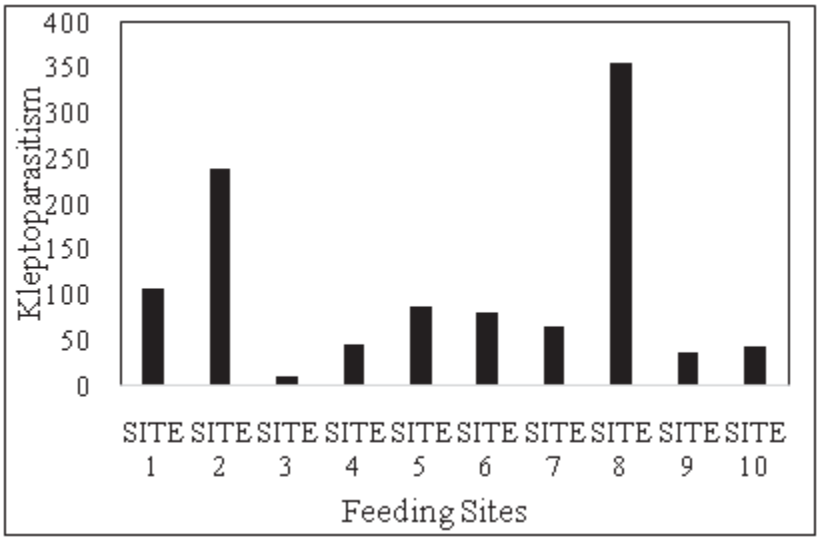
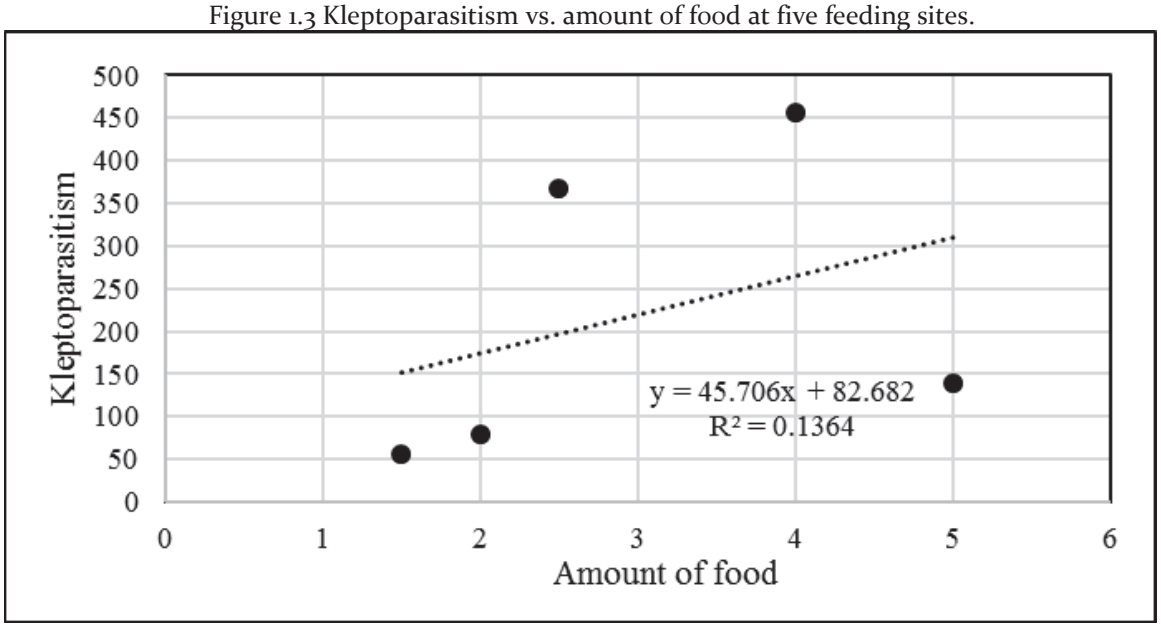


Figure 1.2 Kleptoparasitic events occurred at each feeding sites.

routine feeding sites. Kleptoparasitic events (attempts and successful) by house crows with interspecies and intraspecies were being noted. Amount of food was measured where it was possible to quantify. We postulated three hypothesis i.e. firstly kleptoparasitism is observed when food is in lacking. Secondly, events of kleptoparasitism increased with the increase number of House crows. Third, kleptoparasitism is food specific.

Results: Total 1,023 events of kleptoparasitism were recorded at ten feeding sites during study period (643 attempts and 380 success). Maximum kleptoparasitism was observed at site No. 8 (slaughter house) followed by site No. 2 (Sakkarbaug Zoo) while lowest was observed at site No.3 (agricultural farm) (Fig1.2). Regression showed no correlation with lacking of food and occurrence of kleptoparasitism (Fig 1.3). However it was correlated strongly with the deceased amount of slaughter waste specifically (Fig1.4).

Figure 1.3 Kleptoparasitism vs. amount of food at five feeding sites.



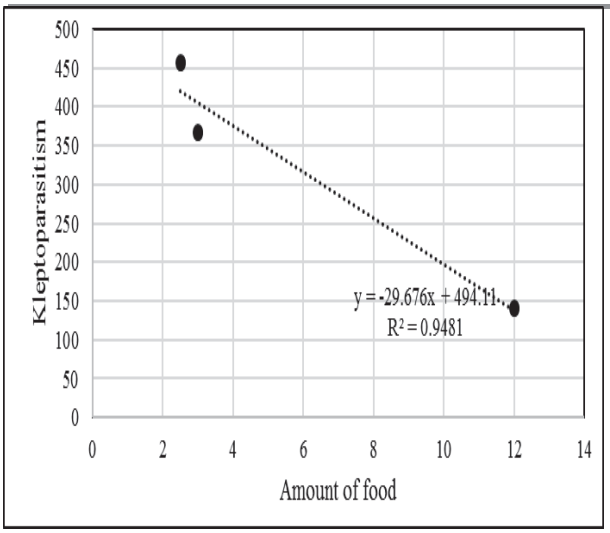


Figure 1.4 Events of kleptoparasitism vs. amount of slaughter food at three feeding sites.

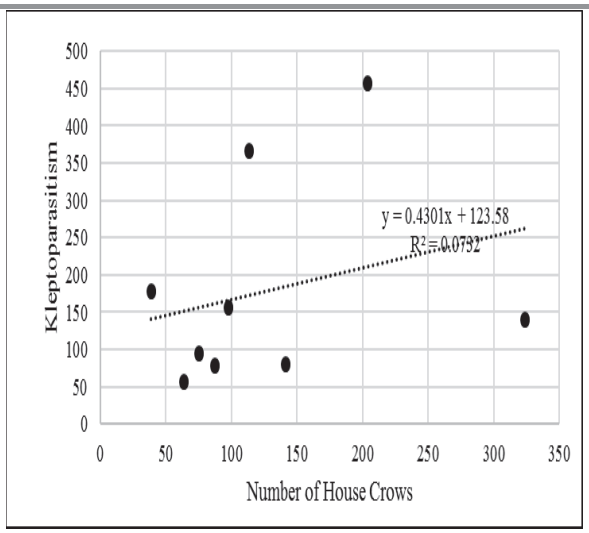


Figure 1.5 Events of kleptoparasitism vs. house crow count.

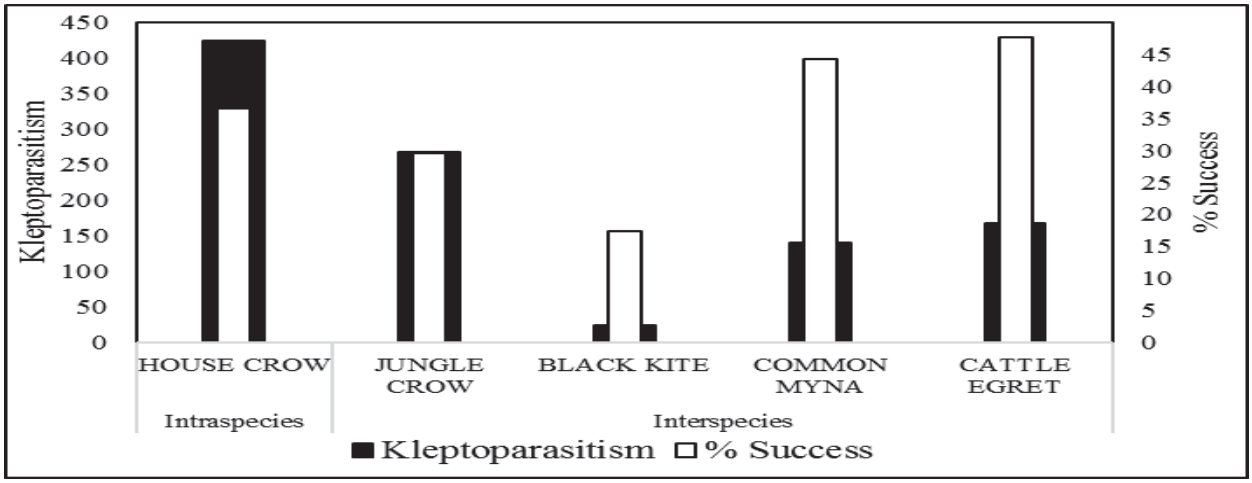


Figure 1.6 Percentage of successful kleptoparasitism within the same species and among the other species.

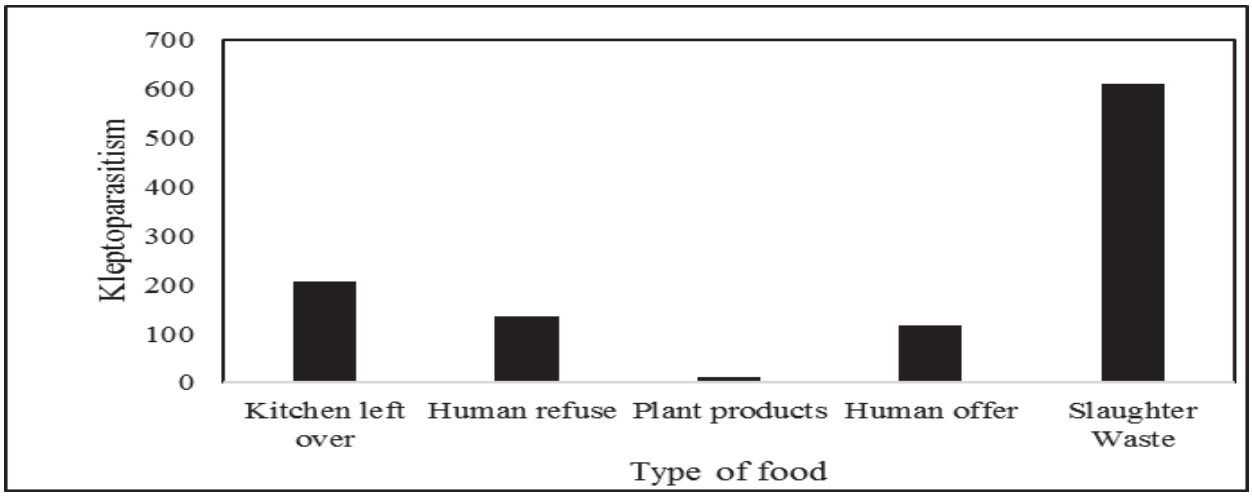


Figure 1.7 Kleptoparasitism attempted for various types of food.

As amount of slaughter waste decreased kleptoparasitic events increased (Figure 1.4). No positive correlation was found with the increased number of house crows and kleptoparasitic events (Figure 1.5). Maximum events of kleptoparasitism were observed within the same species of house crow while maximum rate of success was observed with common myna. Least kleptoparasitic events as well as

least rate of success were also observed with black kite (Fig 1.6).House crows were observed to perform maximum events of klpetoparasititsm for the carnivore food (slaughter waste) while they less often steal plant products (Fig1.7).

Discussion: In present study, we partially accept our first hypothesis because house crows were observed to perform maximum kleptoparasitism in case of lacking amount of waste of slaughter house food specifically. Comparing kleptoparasitism performed for different type of food, maximum attacks were for slaughter waste. Therefore we can conclude that kleptoparastitsm is food specific and accept our third hypothesis. We reject our second hypothesis that numbers of house crows is affecting kleptoparasitism behavior of them. Success of rate did not influence on the numbers of house crows present. They were successfully getting food easily from common myna by stealing food from them compared to the other species.

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