



## Inclusion of children with ASD: Key issues for educators

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There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.

[Donald Rumsfeld](#)

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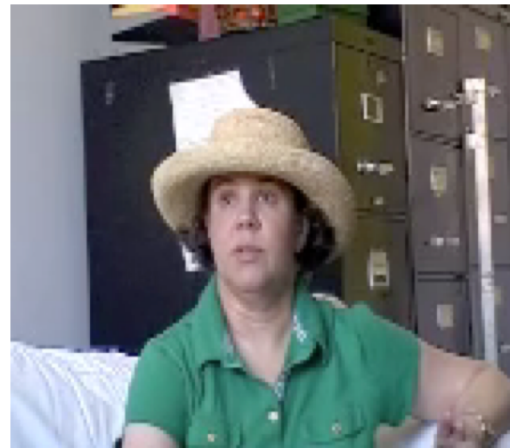
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## Remembering experiences at school

We have increasing knowledge about school experiences from highly verbal adolescents and adults with ASD

Recognition of differences between adult recollections and children going through it

Verbal ability differences....



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## Examples from verbal children 3<sup>rd</sup> graders, age 8

Unaware of his situation



Aware but poor strategies



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## Variability in Experiences

Great variability in how children experience their situations

Interventions need to consider these experiences but often do not

We tend to offer the same intervention to everyone.....

Important to ask children themselves, and to observe them in natural environments

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Intervention  
targets

Modular  
Intervention  
Examples



Intervention  
targets

## Modular Intervention Examples



Intervention  
targets

Putting it  
together

## Known Known.....

Social, communication and behavioral difficulties

- May be difficult to interact with peers, develop friendships
- Poor adaptation to social situations in the moment
- Trouble managing demands



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Social, communication and behavioral  
(executive function) issues can derail  
academic engagement

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## Proliferation of programs



Most address  
social and  
communication  
impairments

They may or may  
not be tested

They may not be  
applicable to  
school context

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So what to do?

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## Determining Intervention Targets

### The importance of good assessment

Known Known.....

Need multiple measures; Children are different across context and by reporter

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## Measurement Issues

Approach	Challenges
Parent Report	Parents not at school
Teacher Report	Teachers not on playground
Self Report	Understanding?
Observations	Limited in time and scope

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## Complicated.....

Likely need multiple measures of children in school as a single measure may not characterize the child's social environment accurately

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Measure example 1.....

Proximal measures from  
children themselves  
(self-and-peer report)

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## FRIENDSHIPS SURVEY

What is your name? Nahomy Date: 10/14/09

School Name: \_\_\_\_\_

Age: 6

Are you a ~~BOY~~ or a GIRL? (circle one)

1. Are there any kids in your class that you like to hang out with?  
Who are they? (Use first names only; plus last initial if needed)

My best FRIEND is  
Faith, Hanna and Karolina.

2. Circle the names of the 3 kids you most like to hang out with.

3. Put a STAR ★ next to the name of the ONE kid you most like to hang out with.

4. How often do you play with the friend with the STAR ★ next to their name? (circle one)

almost everyday

sometimes

only once in a while

5. Are there any kids in your class that you don't like to hang out with?  
Who are they? (Use first names only; plus last initial if needed)

Citali Citali Magli Srgol  
(Citali) (magali) (sergio)

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6. What is your favorite game to play at school? Who do you play this game with? Hide-and-see k

Magali

7. Are there kids in your class who like to hang out together?  
Who are they?

Remember to think about Boys and Girls. Remember to put yourself if you hang out with a group.

Write the kids names and then draw a CIRCLE around each group!

Faith magali Hanna  
Melven max  
Degen  
Faith Angolena  
max

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## Social Network Measure yields information on....

Class peer connections (the map)

- Popularity (salience) of the peer group

Reciprocity

- Children nominate each other as friend

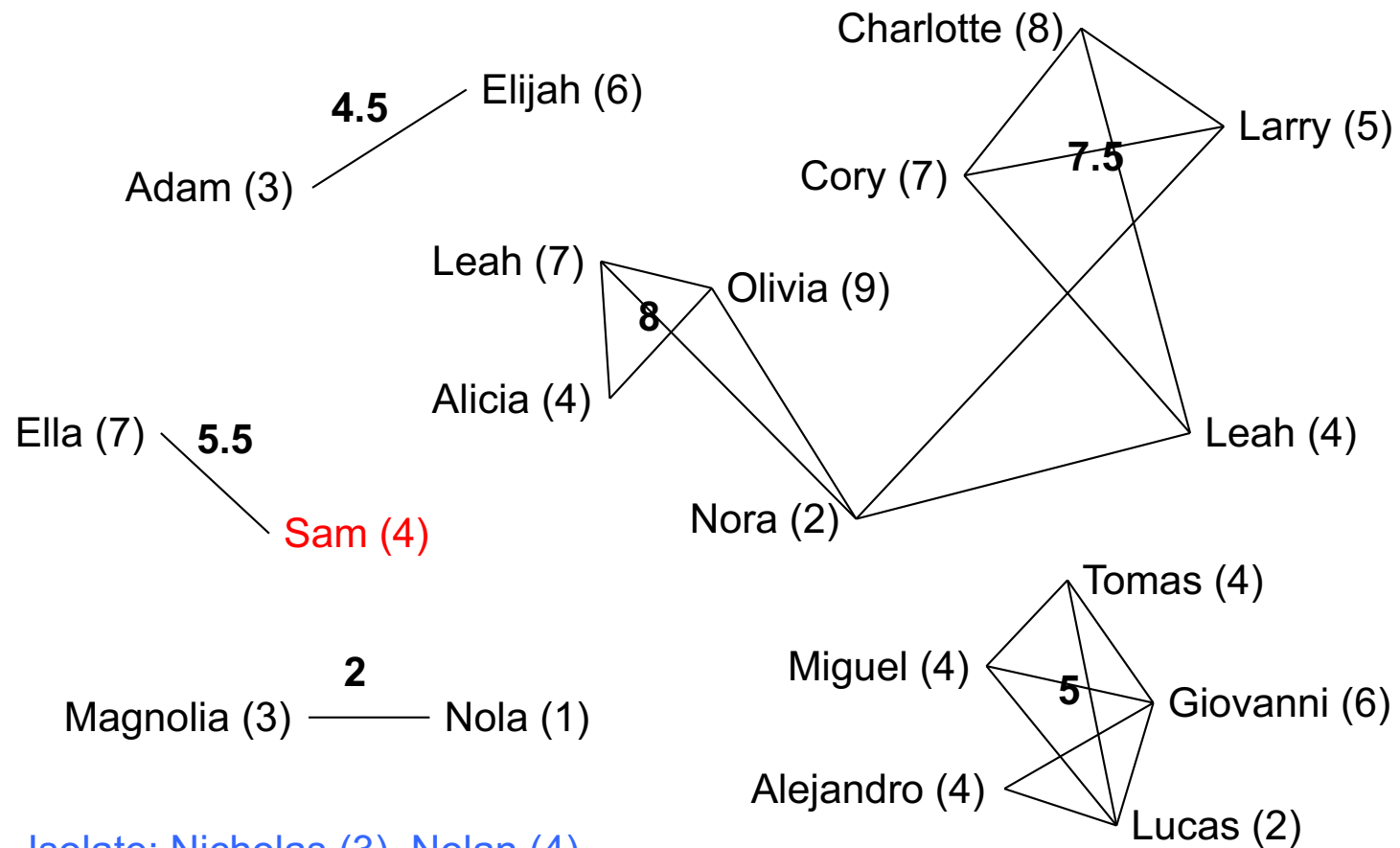
Outdegrees

- How many children child with ASD nominates as friends

Indegrees

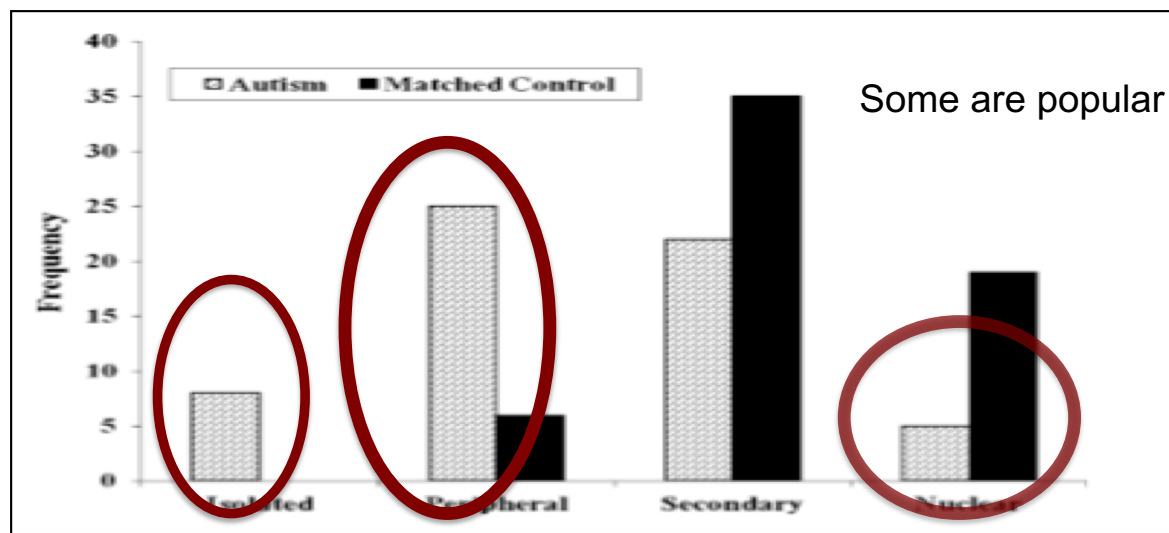
- How many classmates nominate child with ASD as friend
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## Social Networks at School



## Few children isolated!

Most are peripheral to the main social groups, just loosely attached to others



Chamberlain, Kasari, Rotheram-Fuller, *JADD*, 2007; Kasari et al, *JADD*, 2011; Rotheram-Fuller et al, *JCPP*, 2010

## Friends and Reciprocity

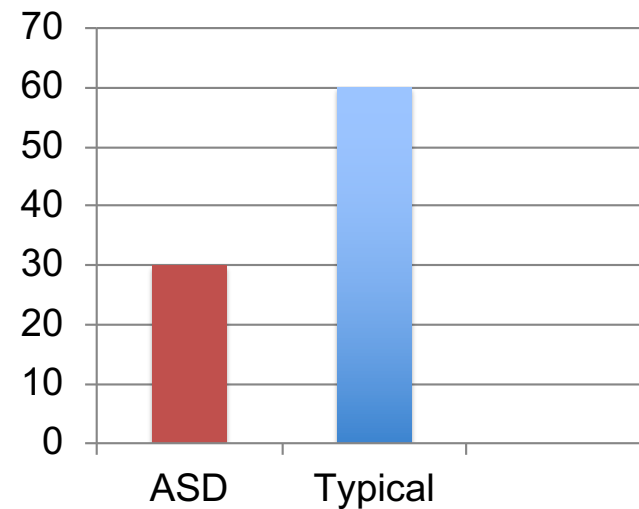
Nearly all children can identify a friend and/or best friend

Over 90% of children with ASD can identify a friend during elementary ages, but this drops to less than 50% for adults

**Reciprocity is limited .....**

20% to 34% ASD

60% for typical children



Chamberlain et al 2007; Kasari et al, 2011

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## Measure example 2

How do self and peer report  
align with observations?

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## Engagement States

Solitary/isolated

Proximity

Onlooker

Parallel

Parallel aware

Joint engagement

Games with rules

Int	State	Chi Initiations Gen = I, Peer R = +, Peer NR = -	Chi Responses App Res = + Miss opp = -
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			



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# Peer Interactions at School

## Peer Engagement on the Playground

Children spend about 1/3  
time jointly engaged

2/3 time is unengaged, or  
parallel aware

Children who are jointly  
engaged initiated and  
responded to peers more



Kasari, Locke, Gulsrud, Rotheram-Fuller, JADD, 2011

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## Intervention Examples

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## Known Unknown

Known---children with ASD have social difficulties at school

Known Unknown----how best to intervene (personalization) for best outcome

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## Most common intervention for children in schools?

1. Paraprofessional aide (shadow teacher)
2. Peers....buddy system in elementary; mentor in secondary

# Study 1: Peer versus adult mediated



## Making the connection: randomized controlled trial of social skills at school for children with autism spectrum disorders

Connie Kasari,<sup>1</sup> Erin Rotheram-Fuller,<sup>2</sup> Jill Locke,<sup>3</sup> and Amanda Gulsrud<sup>1</sup>

<sup>1</sup>Center for Autism Research and Treatment, Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, CA; <sup>2</sup>College of Education, Temple University, Philadelphia, PA; <sup>3</sup>Center for Mental Health Policy and Services Research, University of Pennsylvania, Philadelphia, PA, USA

**Background:** This study compared two interventions for improving the social skills of high functioning children with autism spectrum disorders in general education classrooms. One intervention involved a peer-mediated approach (PEER) and the other involved a child-assisted approach (CHILD). **Method:** The two interventions were crossed in a  $2 \times 2$  factorial design yielding control, PEER, CHILD, and both PEER and CHILD conditions. Sixty children participated from 56 classrooms in 30 schools. Interventions involved 12 sessions over 6 weeks, with a 3-month follow-up. Outcome measures included self, peer and teacher reports of social skills and independent weekly observations of children on their school playground over the course of the intervention. **Results:** Significant improvements were found in social network salience, number of friendship nominations, teacher report of social skills in the classroom, and decreased isolation on the playground for children who received PEER interventions. Changes obtained at the end of the treatment persisted to the 3-month follow-up. **Conclusions:** These data suggest that significant improvements can be made in peer social connections for children with autism spectrum disorders in general education classrooms with a brief intervention, and that these gains persist over time. **Keywords:** Social skills, autism spectrum disorders, peer relationships, sociometrics, school.

- 60 children
- All above 65 IQ
- Fully included general education
- 1<sup>st</sup> through 5<sup>th</sup> grade
- Primary measure: Social network change

Kasari, Rotheram-Fuller, Locke, Gulsrud, *JCPP*, 2012

# Study situated in schools

Child Assisted Approach



Peer Mediated Approach



Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012, JCPP

# Modular, individualized approach

## *Child Assisted*

- Observed child on playground, obtained teacher reports, peer networks, self reports
- Determine top 3 problems for child engaging with peers
- Worked on 1 at at time



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# Modular, individualized approach



## *Peer Mediated*

- 3 peers willing from the class
- Had peers identify some children who had difficulty on playground
- Had peers generate ideas to help engage all children on the playground

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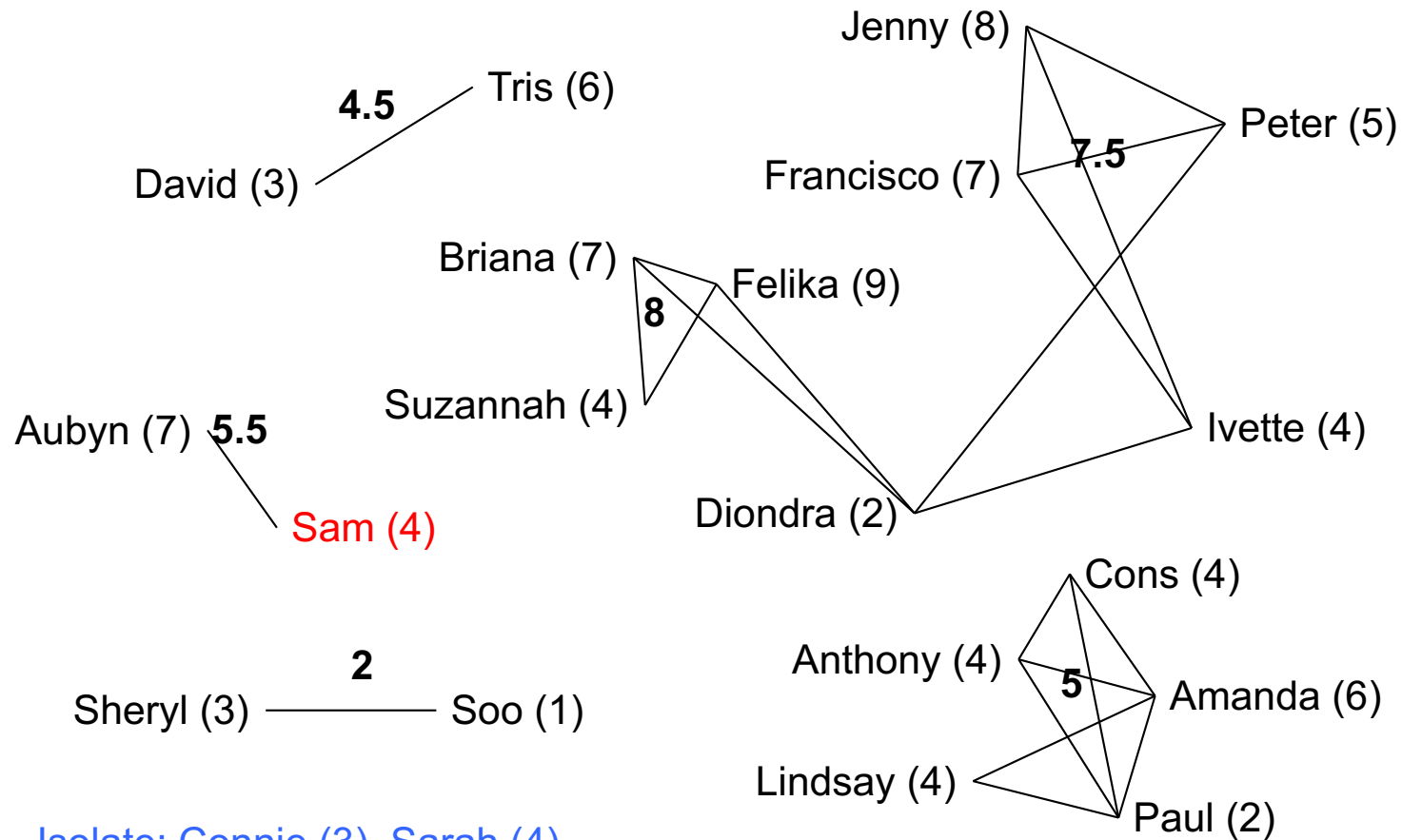
## 2 x 2 study design 4 conditions

<b>CHILD (1:1)</b>	<b>PEER (3 peers)</b>
<b>NO Treatment</b>	<b>CHILD+PEER</b>

6 weeks, 12 sessions  
3 month follow up

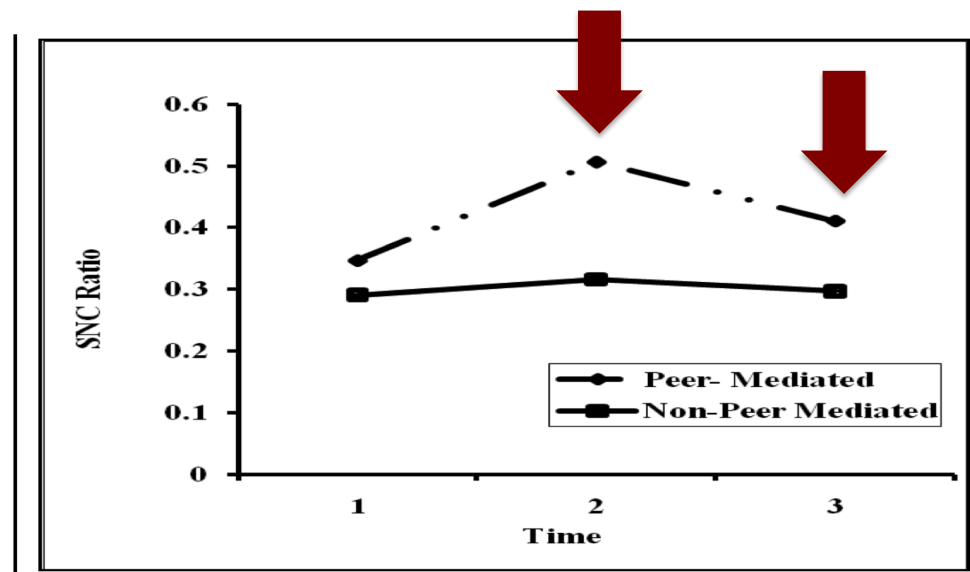
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# Social Networks at School



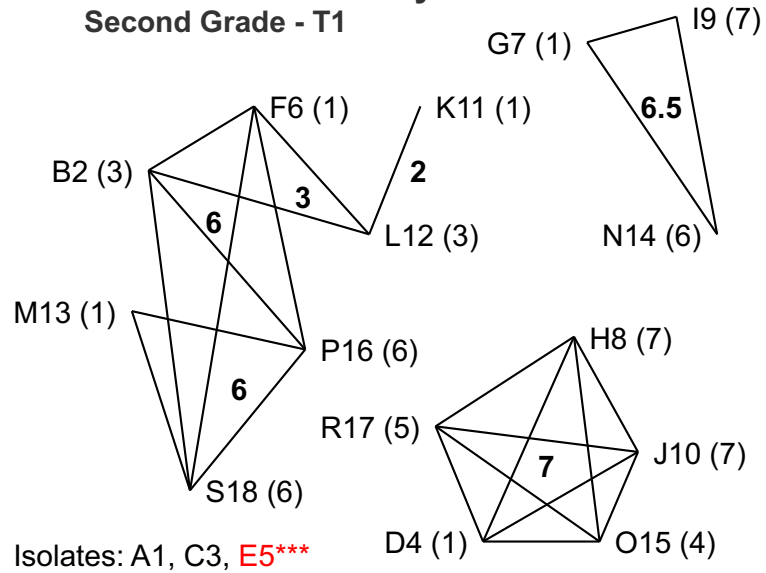
## What we learned

Intervening with the peers made the most difference in engaging the children with ASD

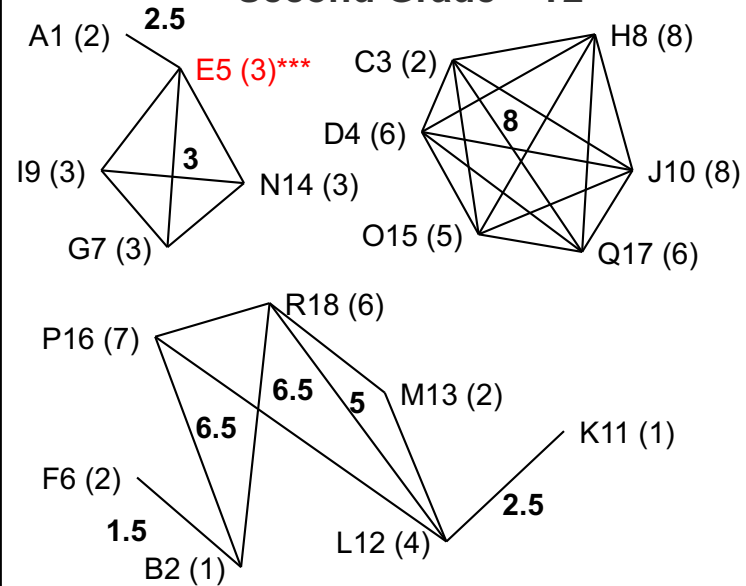


## Social Network Centrality

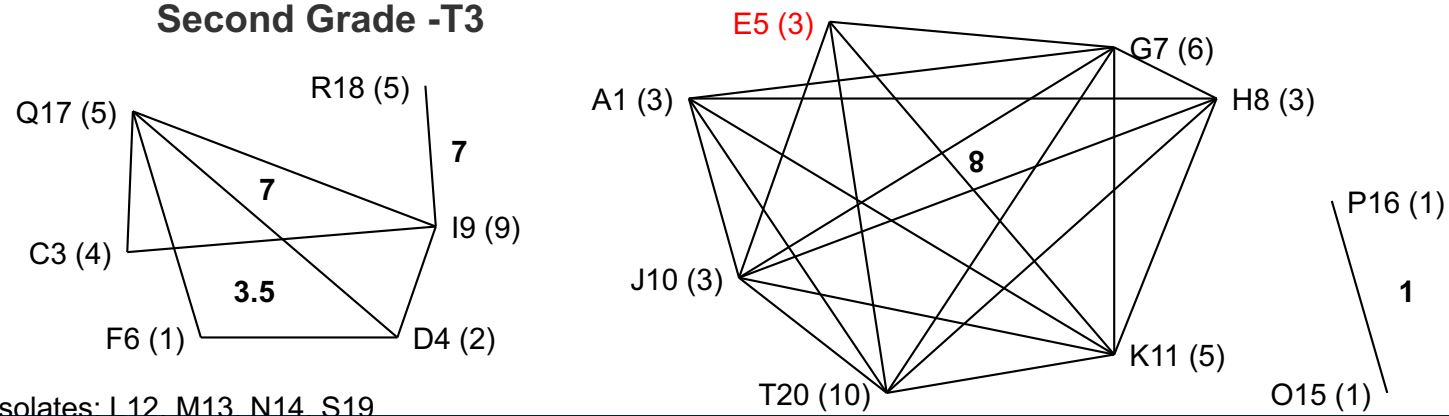
### Second Grade - T1



### Second Grade - T2



### Second Grade - T3



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## Also what we learned

<b>CHILD (1:1)</b>	<b>PEER (3 peers)</b>
<b>NO Treatment</b>	<b>CHILD+PEER</b>

6 WEEK TREATMENT (12 SESSIONS)

12 WEEK FOLLOW UP

- Other Findings favoring Peer Mediated Interventions:

- Number of Received Friend Nominations (d=.74)
- Less isolated on playground (growth curves over tx)
- **Improved rating of social skills (by Teachers) (d=.44)**



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## Issues?

- Concerns of some (other student parents and teachers)
  - Generalization across contexts
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## Inclusion can have negative effect on other classmates?

### The Argument

- The time required of the teacher to help the child with ASD will take time from other children
  - The other children will not be interested in playing with the child with ASD, especially if the child has unusual behaviors
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## Common solution

- Assign child a 1:1 aide or shadow teacher
  - For many reasons this may be the most restrictive solution---taking the child out of the mainstream (but depends.....)
  - Teacher behavior has more to do with teacher than with child
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