

/HJDO 5HJXODWLRQ RQ WK H&LVRQDFOW LHRQ W
8QGHU 3XEOLK (+PHDUJHQFLHV

<D]KRQJ /Y

)DFXOW\ RI /DZ @MQ]R18&KLYQHWV%HLQDLQJ &KL

\$EVWDFWVXERUGLQDWH FRQFHSW RI SMUKV RQDRJ FLDWRWRD WDRQL WSH
FRQQRWDWLRQV @XHU HVREKVVVDXSLQJHFLDOWWRVHMHQDHLWQKDFGE &XUUHQW
WKH FROOHFWLRQV RILSHRUVRQV DRDQDWW HLDXG KOW JLWOD WLRQ OHJLVODW
DQG SUDFWLFH SLGRXEHVXQDTXODLQDQJ RWRVFRSHHSDQGLVRUGHUHG PHY
OHJLVODWLYH OHYHO LW LV QHSHRYDVL RQR IRUHPYLODWWKHVSHHFLWODD&D
VXQVHW SURYLVRQV QHCFISVDFVAVVWH @HMSRQVKEMLW\ DVVHVW WKH \
WKH ODZ HQKDQFH LQIRUPDWLRQ FKHQULQV WDFGE XLVGHQJFRKPSU HUKHQ
VXSHUYLVLRQ V\QKHHQDRWKSLQR&DQDWLRQ FROOHFWLRQ

,1752'8&7,21

7KH RXWEUHDN RI WKH &RURQD 9JHQUDVHDFRPSRQHVV DOG FRPE
KDV SRVHG D PDMRU WKUHDW WR SRVSRQV OLHYHG DOG WKH DOWK
,Q HSLGHPLF SUHYHQWLRQ DQG FROOHFWLRQ EDVHG DOG WKH DOWK
FROOHFWLRQ SHUVRQDO KHDOWK LQIRUPDWLRQ KDV SODIHG D KXJH UROH
EXW DW WKH VDPH WLPH LPSURSHU FROOHFWLRQ EHKDYLRU KDV DOVR
OHG WR WKH OHNDNJH RI SHUVRQDO KHDOWK ROLDFRQFRODWLRQ RQRI SH
LVVXH RI SHUVRQDO KHDOWK LQIRUPDWLRQ SURWHFWLRQ KDV
EHFRPH D KRW WRSLF LQ WKH ILHOG RI ODZ ZRGD\ ZLWK
HSLGHPLF SUHYHQWLRQ DQG FROOHFWLRQ DOLPHG LWKHUWHQWLRQ LV
EHWZHHQ FROOHFWLRQ DQG SURWHFWLRQ SHUVRQDO KHDOWK
LQIRUPDWLRQ VWLOO H\LVWV DQWKHULXSRFROOHFWLRQDOVQ
GLILFXOWLHV WR WKH GHPDUFDFWKHULXSRFROOHFWLRQDOVQ
GHILQH SHUVRQDO KHDOWK LQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
ERXQGDULHV RI SXEOLF SRZHU DQGLQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
ILHOG RI SHUVRQDO KHDOWK LQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
KDV EURXJKW FDKQJHV WR WKH GHPDUFDFWKHULXSRFROOHFWLRQDOVQ
LQIRUPDWLRQ DQG KRZ WR DFKLHYLQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
SULYDWH LQWHUHVVV LQ WKH SURWHFWLRQRI SHUVRQDO KHDOWK
LQIRUPDWLRQ" 7KHVH DUH DOO FROOHFWLRQVWKHULXSRFROOHFWLRQDOVQ
FRQVLGHUH 7DNLQJ SHUVRQDO KHDOWK LQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
DV WKH PDLQ HQWU\ SRLQW WKLV GHPDUFDFWKHULXSRFROOHFWLRQDOVQ
SHUVRQDO KHDOWK LQIRUPDWLRQ GHPDUFDFWKHULXSRFROOHFWLRQDOVQ
JDPH EHWZHHQ SXEOLF SRZHU DQGLQIRUPDWLRQWKHULXSRFROOHFWLRQDOVQ
SXEOLF KHDOWK HPHWU\WKHULXSRFROOHFWLRQDOVQ
KHDOWK LQIRUPDWLRQ FROOHFWLRQWKHULXSRFROOHFWLRQDOVQ
DQG SUDFWLFHEDVHGDOGWKHULXSRFROOHFWLRQDOVQ

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7KH LQWURGXFWRQ RI WKH 3HURQDQDWRQDQDWLRQ R&LVRQDFOW LHRQ W
/DZ LQ \$XJXVW PDUNV D QHZ SWDVRQDQDWLRQWKHULXSRFROOHFWLRQDOVQ
RI SHUVRQDO LQIRUPDWLRQ LQ SKLQDFDQZHQHUPHQW DQRKHV DQRWK FRQ

&RUHVSRQGLQJ DXWKRU (PDLO JE#FXQ HGX FQ

PHGLFDO FDUH RU KHDOWK VHUYLFHW R ZKLPVHV WVKUHH % HFUKDQQ IS Q LFUHV
 QRW PHGLFDO DFWLYLWLHV DQG ULWJH QR VR ICULPV LQFHQ WVR > WOKDOWK/HGDMW
 7KH FRUUHVSRQGLQJ KHDOWK FRVLVWVWIDQG RFRWKIHUL JGVM Q W DIQ G ELOWV F F
 LQIRUPDWLRQ DUH DOVR LQFOXGH G V F Q HDVIGR QV RRI QW \$ H VSLFEOH F RSIRW H H
 1DWLRQDO +HDOWK 'DQG G HGLFDO DUSGRS RGDWH W QDOLW\ FRQWDLQV IRXU V
 DQG 6HUYLEFH 0DQDJPHHQW 0HDV RUSXUS E L B O D S V W R H G M D W W H Q H V Q E D O
 1DWLRQDO +HDOWK &RPPLVVLRQ 0DULWGPIDFQ RM \$ KH SERLWJGDHMTX IRU HV V
 PHGLFDO DQG KHDOWK DURXQG K S D O W K L O H W W K R % D W H G P R Q W W R R Q I R S I P U M
 WKLV SDSHU KROGV WKDW WKH GMLISXOVDWRQG FEI SDUZFSSBORSHDOWK Q
 LQIRUPDWLRQ LV DV IROORZV 3DIEWRROQVRKHDFQWIKYHQWRKHPSDULRQHQG
 UHIHUV WR DO NLQGV RI LQIRU EDWRRQRDERXWWWEKH \$ KH L F H D V D Q G D F
 PHQWDO KHDOWK RI QDWXUDO SHUVRQV W(KDWOK E U H XPH H Q H T G H Q W L I W H K
 RU FDQ EH LGHQWLILHG GXULQJHFM G O E D O L D F V E L H Y L Z H L H Q W K H K G D F D J H
 GLVHDVH H[DPLQDWLRQ GLDJQRVLOG WUKHD VPHQHWVWQGDVLR RRG > @ 8 S

SURSRUWLRQDOLW\ KDV JUDGXDOO\ E
 UHYWULFWLROYDQ G Q M J U M O O H F L W H H G S I L
 1HZ FRQQRWDWLRQ RI SHUVRQDO KHDOWK
 LQIRUPDWLRQ XQGHU SXEOLF KHDOWK HPHUJHQFLH

7KH /DZ RQ WKH 3UHYHQWLRQ DQG 3UHDWPHQW RORLQWHEWLRKY FRQW
 'LVHDVHV GRHV QRW OLPLW WKH HPHUJHQFLH KHDOWK LQIRUPDWLRQ
 FROOHFWHG E\ PHGLFDO LQVWLWXWLRQV DQG WKH LQIRUPDWLRQ
 FROOHFWHG GXULQJ WKH HSLGHPDFWKH FROOHFH SRXO LFKKHVDOWK F W P H
 KHDOWK FRQQRWDWLRQ > @ , W F D I Q H E M V V B L G L W K L D W Q W K D U F R Q R W U D L V F
 RI SHUVRQDO KHDOWK LQIRUPDWLRQ L S O G H B I S S L E F S F U W H B O D O L W \ L
 HPHUJHQFLHV KDV EHHQ VLJQLILGLQW W H I S D Q Q V M G Q G D U G W R M X G J H Z

7KH JHQHUDO VHQVH RI SHUVRQDO KHDOWK ODMRXPVWLRQ @ \$ K
 PDLQO\ LQFOXGHV IRXU SDUWV R H G W K F B O S V R S R U F H L R Q D R U L M D W S U R L Q F L S O
 KHDOWK VWDWXV R Q D O U W E W L X R O H H D F U R G P H S V D U R Q P H Q W D I O O D Z J W K D W H F R O
 DQG JHQHWLF LQIRUPDWLRQ 7KH W K H L D F O R G M E L L Q L L U D R Q W R B D Z O K H V L Q H U
 JHQHWLF LQIRUPDWLRQ XQGHU W \$ H R I S R I O W H R O F B I O R L M & 2 S J L Q F V S O H L Q W F
 WKHRUHWLFDQO\ WKH QHZ FRQRUARDWKRQ W Z R X S E Q R R Q W R R Q M K H V I W U R V
 WKUHH DVSHFWSHUVRQDO UKHMDIOWSKUR R R R U W L D R V Q D R Q L W \ D V D F R Q V W L W X W
 FROOHFWHG LQ SUDFWLFH LV QRVR O L D P Q W H D Q W R F M W K I L J H Q E V W K R O X O R G L E H F O U
 QRQ WUDGLWLRQDO D E W W G H S H G B W W V W Q F M O R D O L I P R O H G D Q G R Q O \ U H J X O
 VXFK DV QXFOHLF DFLG WHVWLQSRZDIEFEQDWDVQH D Q G Q V Y H @ W L K Y H O I
 WUDFNV , W F D Q E H I R X Q G W K D W S U R S R H J W H R Q D B Q W R I F B G D E C H W K I W H Q
 LQIRUPDWLRQ XQGHU SXEOLF I G H H O W H U R L G I M U W K E F V A R S H K D R M D S S O L F I
 H[S D Q G H G D Q G Q D U R Z H G F R P S D R U S R Q V L W K D O L K W \ S Z K L W K D Q G O W I R H I
 WZR DUH FURVVUHODWHG D G G L S O X E B S E G K I P D O W B D M H H G J H W Q V U H E X W X V V
 EDVHG RQ KHDOWK HYHQ WKRXJK \$ K I H L Q Q R H P D W L R S L G V R L F W S D H X B O W
 KHDOWK UHODWHG H[SODQDWLRQRG SXEOLF HQWLWLHV KDYH WKH U
 SHUVRQDO KHDOWK LQIRUPDWLRQ EX

SOD\ WKH VDPH UROH
 7KHUH LV QR WKHRUHWLFDQ REVV
 38%/ , & 32:(5 % 281' \$ 5 < 81' (S
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 EXW ZKHQ WKH VXEMHFW RI EH KDYL
 DSSO\ WKH SURSRUWLRQ R I Q B O I S W \ LV I D
 , Q W K H I D F H R I D S X E O L F K H D O W K K H P H W J R Q S R W L W L R Q Z 7 K H Q W W H Q F H
 HPHUJHQFLH[HFXWLYH SRZHU WR V K R S W E R Q D O L W K R U W K H E D O D Q F H
 WKLV SRZHU Z L O L Q P S R I W W U L F V S X E O L F R Q Q G V S U L Y D W H V X E M H F W V R
 LQGLYLGXDO ULJKWV RI FLWLJHQ W R H D Q R L F H D R M W K H L H B G I R L S W E O
 EHWZHHQ WKH WZR R V L D Z O D H F O W D R H E R X Q G P H O
 IRU WKH H[HUFLVH RI SXEOLF SRZHU UHODWLRQV KLS RI SULYDWH ODZ
 IRUFH VR WKH DSSOLFDWLRQ RI WKH

7KH WKHRUHWLFDQ SULQFLSOPDQRWMEHJLDFOXGH QDWXUDOO\
 ERXQGDU\ RI SXEOLF SRZHU SULQFLSOH RI SURSRUWLRQDOLW\ WR
 VDWLVI\ WKH EDVLF UHTXLUHPHQW RI
 7KH SURSRUWLRQDOLW\ SULQFLSOH M U L F W Q D W H G P H U R P O W K H K B I S O M D K O W H
 SROLFH /DZ LQ DQG ZDV R I I E R I O D H F W I L Q Y R S H G V E Q D W K H Q I R U P D W L R
 FRXUW LQ WKH V Z L W K W K H V L S J O H R H Q J K I D R Q D F Q G F R H Q W O R I O K D V D V
 EDFNJURXQG RI WKH ELUWK RI WKR S S D Q H G S Z L W K I D S V R G R O M L R Q R D O R D W I

SDUW\ ZKLFK HDVLO\ OHGCV WR (SRZHUHQFE XWHX ODMULIRQV HD WWH XERU
 LQIRUPDWLRQ FROOHFWLRQ RI SUXE DWFHVVWRMHUDWV DERRVQRHGDVQWJFD
 PHHW WKH UHOHYDQW UHTXLUHFRUQWLQRO OIKPHLVSU RSRUKWHLBDSHULVU
 SULQFLSOH > @XGKPHQSWHEVIDV IROORZRWHU DV WKH EDVLF ODZ RQO\
)LUVW RI DOO LQ D SXEOLF KHDODVFI VHH UHIFHVEY HWJXL G BQDHFDVQGRS
 RI SHUVRQDO KHDOWK LQIRUPDWV HROQRVQDROX CGR KUDRPHVLRQH6HDSXGOWW B V
 SUHPLVH RI SXUSRVH MXVWLILFD FLLRFX P)RWDQKH VS XEQGHU DZWLKRULQIRU
 WKH VRXUFH RI LWV SRZHU LV WRROOHJFDVH GLOEKVRAFDGILHOSYRHH FRIWLWH
 DFFRUGLQJ WR WKH SURYLVLQRVNRQFSZU DEIRQW V DQK \$LUWFKPOHW DQFHV
 WKH 3HUVRQDO ,QIRUPDWLRQ 3URMHFWOGLRQ /DZH> @ LVRI LUP DRQORQ EH
 QHHGV WR FRQGXFWDWR RBUVXOWW [DGLWRP LFG SURXHW QWLRQ
 WKH WUXH SXUSRVH DQG HQVXUH WIKDRQ G KW KEH K DNLHSUDRZDGRSOWKHU
 WKH ODZ)RU SULYDWH VXEMHFVDW HL OHLV VQLPHFXGDHUIHWR VFRQIG XFRW VDK
 VXEVDQWLYH #DPLQDOLRQF UHFRVW KRH WKHD OFRKSDFULDOV ODHGRS ODBV L F
 SXUSRVH DQG HQVXUH WKDW WKJLLG LDFJW LGFRFX FDUHW ED WHRG GHOD OV KZL W
 QHHGV RI WKH SXEOLF LQWHUHVWRZHYHU WKLV NLQG RI QRUPDWLY
 6HFRQGO\ WKH H[DPLQDWLRQ SRIRDSR SRULD VHRZHOHYBQGR I HIIHFV
 QHFHVVLW\ LV FDUULHG RXW XVLDQJGUDRNZ DSUHG/LVPHIDEL OLVROV @QGSV
 WKH ULVN YDULHV IURP VXEMHFVH QDF WPEHMFVRI >V S#FLDQ VODZWXDVRGJ \
 WUHDWPHQW LWHLOHFDUUSHG YLXWBDVQWV KCH HGVBI OVLPH OIL QOHJL WDPDF
 LV ORZ GR JHQHUDO UHYLHZ FDQZKLV KRILV SRULYD VDL NFKEMWRWVAD XGXI W K
 WR WKHLU HFRQRPLF DWULEXWRYHWKHD FDU IR LO DNHJO VFR QFROG WFWQDI
 XWLOLJH SHUVRQDO KHDOWK LQIRUPDWLGRQHEIDRQRUPKH ORRSD WRJXC
 PD[LPL]H HFRQRPLF EHQHILWV ZDQK WYHOD VODXHO \XSRQ ODVNU GLVJX
 7KHUHIRUH VWULFW UHYLHZ VV D Q E D P I G W W KR X S G R S D H D G R S U W H G D W S O H
 VWULFWO\ UHYLHZ WKH W\SHV SFRSDH WIRQXGQ PHUWRR GWZ RIFKHFNV H
 LQIRUPDWLRQ FROOHFWLRQ > @ -L)RQJ WQH D DOHVQ MRKURDHW LZRQ MQMWHU
 FROOHFWLRQ EHKDYLRU GRHV QRW KUHMHVFRH FMKHHMFXIL QLEHLQD \)RUL
 VHQVLWLYH LQIRUPDWLRQ WKH VHPULLMHQVW QWDLQGDVGLR QILVQRBUWK
 VKRXOG EH XSKHOG ,W LV QHFSLVG DPLFW RKRQV L G HXV XVDIHO\ QR S
 LPSRUWDQFH RI VHQVLWLYH LQIRUPDWLRQ DQGV LQGHYSLDG XDEQ OUVJKDW W
 GLVFORVXUH DQG ZKHWKHU UHDXFDUDEOHHSGRW H F WLRQ PHDVXUHV
 VKRXOG EH WDNHQ GXULQJ SURFHVVUQJ

3HUVRQDO KHDOWK LQIRUPDWLRQ
 \$ 5(9,(: 2) 7+(/(*,6/\$7,2HSLGHPLF SUHYHQWLRQ DQG FRQWUR
 \$1' 35\$&7,&(2) 3(5621\$ G DGGLWLRQ WR WKH VSHFLILFDW
 +(\$/7+ ,1)250\$7,21 &2//(&7,2 FROOHFWLRQ EHKDYLRU LQ SUDFWLF
 FDQQRW PHHW WKH UHTXLUHPHQWV
 \$W SUHVHQW WKH OHJDO SURYLVLQRVNRQFSZU DEIRQW V DQK \$LUWFKPOHW DQFHV
 LQIRUPDWLRQ FROOHFWLRQ LQ RXU FRXQWUWKH UHTXLUHPHQWV RI SU
 WKH EDVLF ODZ WKH &LYLO &RGH LQIRUPDWLRQ LV TXH WIRUPEOH 7I
 LQIRUPDWLRQ DV WKH FHQWHU FQEGSWKH RIVSFDLDO ODZ HDV
 VXSSOHPHQW DQG VXSSOHPHQW FUGJEDLPDQV DGPLQLVWV
 UHJXODWLRQV GHSDUWPHQW GFRXPHQW LG QGSLGQH S UHYHQWLR
 UHJXODWLRQV RI WKH PXOWL OHYLO OHJDO SURYLVLQRVNRQFSZU DEIRQW V DQK \$LUWFKPOHW DQFHV
 WKH VDPH WLPH GLIIHUHQW ORFDQJH XUDWLRQV LWK DED EHFQRXJH
 LQWURGXFHG WR VXSSOHPHQW DSDSOLVLRQV LUDW OHVSDVLRQ
 HQLWLHV EXW QRW DGPLQLVWUD
 'HIHFVWVQHJLOHJDO QRUPV VXSHUPDUNHWV SURSHU\ SURSHU
 HQLWLHV ZLWK WKH QDWXUH RI HQ
 \$W SUHVHQW WKHUH DUH VRPH SURESHU\ RQWKH FRQYHUSOLFGI WR
 DQG FRQIOLFW DQW SHUQRUPDWHBQT SURMHVEVRSO S OMDKROXHE WIKDIYLRU
 ODZV > @ 7KH GHWDLOHG DQDOWLEMHV VSDRQRZD LPSRUWDQW URC
)LUVW WKH VVWHP VWUXFWXU SUHYHQWRQF DQG WKH RQVHROFH RW
 VSHFLDO ODZV &KLQHVH SXEOLF \$PHDQWUHWVHQRU SHUVRQDO FROC
 KHDOWK LQIRUPDWLRQ SURWHFWLRQUPDWLRQV WKHUHQJLWRG UHSDH
 OHYHOV RI ODZV DQG WKH ODFNWRSH SHFSDOYDWHXQDNRV FQRWHGQ
 WKH UXOH FRQIOLFW DQG DSSOLFDRRQEFKR VDLRHLGHIERSDOVR LG
 \$UWLFQH RI WKH /DZ RQ WKH FROXWLRQJ DQG DRUWUHQPREHU RI
 ,QHFVLRXV 'LVHDVHV OLPLWV WKHUHSULHV RROOHFWLRQ
 FROOHFWLRQ WR PHGLFDO LQVWLWXWLRQV EXW \$UWLFQH RI WKH

RI HSLGHPLF SUHYHQWLRQ DQG FRQWURO OE HEXWHWKHLU LWH DFO S XEHS RWWH
KDV QRW EHHQ H[DPLQHG DQG WRXJOW ULV WKH SRVVLELOLW\ RI
LQIRUPDWLRQ OHDNDJH)LUVW WKH /DZ RQ WKH 3URWH
6HFRQG WKH FROOHFWLRQ VFRSH UFDWLRQ KDV LQHHQ SDPHQGGG WR
7R DFFXUDWHO\ GHWHFW VXVSHFW WKH SVRWHFWKHO QFRIS BHBVRQDO
LQIRUPDWLRQ FROOHFWLRQ LV RSWHQLF [SDQMG LPHSWDFQVLLHV ,WOW
LQFOXGHV WZR DVSHFWV RQH LVDVSHUHSIDOWH ROR IDO QREWRDQSRWHD
VXEMHFW WKDW LV LW H[WHQG VMRL ROKWHLY B DVSWROFSH ULWR QV GHOD
WR WKH LQIRUPDWLRQ VXEMHFW HRHUHFDPSOH JLVQFLDORJ BZLWY HQDF
+XQDQ 3URYLQFH WKH LQIRUPDWLRQ H[QWGVWFQBW DRQDEOLFKHDOV
EDVLF LQIRUPDWLRQ RI WKH FRZILZHQV SDVPHRQVM WKKIRU HORZHU OD
EXW DOVR WKHLU IDPLO\ PHPEWKHUHKLH QRFRQLH QXSHUODDZ WK
H[SDQVLRQ RI WKH FROOHFWHG ERQOHEQWTXWKDWLRLQHG WKHFRIDORJWHHL
FRQWHQW LV QRW OLPLWHG WRLQVWIDGLVMLWB B OVSHFULVDRQDQD SKMIDWRK
LQIRUPDWLRQ EXW DOVR LQFOXGHV WELVHLV RQDO QPRVPHQVWRQV BKHV
FXUUHQW UHVLGHQFH WHPSHUDRQXQHV DW HDYKHQFRUDVFRV WWHUHYKLV
H[SDQVLRQ RI WKH FROOHFWLRQ ERISW RIDXSEURXQBZ IRU RUDKWHULORNZH
RI OHDNDJH DQG KDV YLRODWHXQLWKHG DLQLRQD WLDYDHRGH
UHTXLUHPHQWV 6HFRQG UHYLWHHOKB DQRVIRU UHVRQ
7KLUG UHSHDWHG PBQGBFWLRQ ERQOHFWLRQLUVW RI DOO LV QH
\$GPLQLVWUDWLYH DXWKRULWLHVORZKOG BZHFEQVGLDWXWVWR VFRIDGHFW
SHUVRQDO KHDOWK LQIRUPDWLRQ ERQDIOEQW\$OWDQGHFRQRHOLKQWHLV
> @ EXW LQ SUDFWLFH FLWLJHULQELSHOHTXILFHQWRUWKLSHDWHFRQV
SURYLGH WKHLU SHUVRQDO LQIRUPDWLRQ OVBZ YBXLWR \$UWLVXFRMHFWLVV
ZKLFK YLRODWHV WKH SULQFLSORFHQVLRQH V \$HWLDFWDEGHVNLGRQFLQGH
FROOHFWLRQ DOVRKDDVFDWIDQG DNRBHQUDIXWHULHV RI H[DPLQDWLRQV
WR ILOO LQ SHUVRQDO KHDOWK LQIRUPDWLRQ RYLLYLFERBKRQVLRKHZLV B
EH OLPLWHG > @ DQG HYHQ WKHPSDWHQWVIZLXODWRWQVHDDEQW KWR /D
WLPHO\ WUHDWPHQW > @ 6XFK DQGRYHQWRQFRM ,QRHFWWRXHQV LVHD
OLYHV IRU WKH VDNH RI HSLGHPLF SVWQHQQWKRQ DRQIRB RWRWRWDA SU
HYHQ YLRODWH WKH ULJKW WR OLRQWELXVGLFMV PWHQ & DOGVH Q & WLRQ
RXW RI SURSRUWLRQ (PHUJHQF) 5HJXODWLRQV DUELWUDUL
7KHUHIRUH LV FDQ EH GHWHUPLQHG 7KXROG EH PRGLLHG RU FOHDQHG XS
+(\$/7+ ,1)250\$7,21 &2//(&7,21 7KLUG DGG D VXQVHW FODXVH WR
81'(5 38%/, & +(\$/7+ UHVSQRVH WR WKH FHQWUDO JRYHUQ
(0(5*(1&,(6 3PDVV SUHYHQWLRQ DQG WUHDWPHQ
UHJXODWLRQV VXFK DV WKH &LUFXC
7KURXJK WKH DEKMHFRQDHFVWRQHSORJGHURYLQUQPHQW RQ 6HYHQ
SUDFWLFH ZLOO FDXVH WKH LQIBLQYHPHQWRQIDQGLRQWDBOULRIKWKH
DQG LQWHUHVW 7KHUHIRUH LWUHVHQWVDR DNRWKHQ & LDFZV DQG
OHJLVODWH DW WKH OHJLVODWLYH ERUHGLODWRHHWKDEOLVKVDRWHLOIR
DQG DOOHYLDWH OHJDO FRQIOLFQW HXEBGODVHV DQPGQFRVWUHVRLYH
FRQGXFV KDYH EHFQVLFV XHRSLODSEBWFDFKWKDVQD 3ZDUPRQJHULQJ' W
ULJKWV DQG LQWHUHVW LQ KHDWKKLQIRUPDWLRQ QEXUHDXFUDF\ 3:DU
HIHFWLYHO\ PDNH XS IRU WKH ODFN
WKH EXUHDXFUDWLF WHDP GXULQJ W
WKH HSLGHPLF VWDUWHG ZKLFK KI
VLJQLILFDQFH +RZHYHU WKH XUJ
)RU H[DPSOH WKH (XURSHDQ 8QLRQ SUHYHQWWRQ BCGFWRQWBWKHV DV EHH
ZKLFK KDYH UHODWLYHO\ SHUIHFWRWV DQWVWVSDQVFRQPHBWW
SURWHFWLRQ UXEBBOKVWLSKSDWVWVSLWVWLOO ZLOO RQO\ GLVUXSV
LQIRUPDWLRQ FROOHFWLRQ DQG FRUHLQWVBRQDBRQJLQXWKHFD
OHJLVODWLRQ RU FDVHV %XW LWUHVHQVLRQVSLGHPPRGH SUHYHQWLRQ
GLIIHUHQW 7KH 8QLWHG 6WDWHV DNRSHV QRZH WKPPHQLWUBDYJEFRI
OHJLVODWLYH PRGHO XQGHU WKHLYWLODORWZDUSVLPWHQVFRVBLQGH
HPSKDVL]HV IOH[LELOLW\ > @ 7KH XURSHDQ 8QLRQ BGRSHWV DQG
XQLLHG OHJLVODWLRQ PRGHO ERPLQVWHLV WKH VWDWH
&RPSDUHG ZLWK \$PHULFD WKH WRS GRZQ OHJLVODWLYH PRGHO
RI WKH (8 ILWVDRXGUPXQWLLDQGYHO OHJLVODWLYH

SHUVRQDO LQIRUPDWLRQ DQG PRGHURILSHUVRQDO DQDQRQDQDWLRQ L
JRYHUQDQFH V\ VWHP DQG JRYHUQDQRQWUDSOFLW\ &29,' 6WXG\ (

5() (5(1&(6 / -LDQJ 'LVFORVXUH DQG 3URW
,QIRUPDWLRQ LQ &29,' 3UHYHQW

; +DQ 5HVHDFK RQ WKH /HJDO &KLQDQDWLRQ &KLQDQDWLRQ &KLQDQDWLRQ &KLQDQDWLRQ &KLQDQDWLRQ
RI 3HUVRQDO ,QIRUPDWLRQ /DZ 3UHYV &KLQDQDWLRQ 3URWHFWLRQ R

; &KHQJ 8QGHUVWDQGLQJ DQG \$SSOLFDFWLRQ *KLQDQDWLRQ 8Q
,QIRUPDWLRQ 3URWHFWLRQ /DZ &KLQDQDWLRQ 3XEOLVKLQJ
+RXVH S '2, M JJQXM VNE

+ -LDQJ 2Q WKH 3URWHFWLRQ RI 3HUVRQDO HQIRUPDWLRQ ZRPDQ
WKH &RQWH[W RI (SLGHPLF)URWKRSULPDSHFWLPHWV WLPH E
3URSRUWLRQ -RXUQDO RI &83/ SURYLGH UHSHDWHG QXFOHLF DFLG
< 0HL \$SSOLFDFWLRQ 6FRSH DQG HYHQWYDQW OHG WR KHU, PLVFDU
RI 3URSRUWLRQDOLW\ &KLQDQDWLRQ SURJQDQW ZRPHQRYHH D GRFWRU I
/DZ GXULQJ WKH DERUWLRQ ORFDO +H

4 /LX 5HFRQVWUXFWLRQ RQ WKH 3ULQFLSOHV DERUWLRQ OHJD
3XUSRVH DQG 3URSRUWLRQDOLW\ &KLQDQDWLRQ 6FLHQFHV
S '2, M FQNL JJII

2I FRXUVH WKH FUGLWUHQDQGSULPDSHFWLQDOLW\ \$OLWD \$OOHQ &DVHV DQG PDW
LV EHOHYHG WR FRQWDLQ RQI\ WKUHH VXE SUOLFSONHV EXW
PRUH DQG PRUH VFKRODUV EHOHYH WKDWHWKQDMXVRLRSLRQ VW
RI SXUSRVH LV WKH SUHPLVH RI LZYLZLQYSRQVSWRFRBU LQIH
RI SURSRUWLRQDOLW\ VR WKH FRQWUDWLRQ RI WKH RXU VXE
SULQFLSOHV LV DGRSWHG KHUH 6 <X /HJDOIRUWLDWLRQSLGHPLR

% -LDQJ + +XDQJ 7KH /LPLWQHVVPHUHQ\ DQG 7UDFNLQJ
\$GPLQLVWUDWLYH 3RZHU \$GPLQDFWLYH /DZ 5HYLHZ
'2, M FQNL

+ -LDQJ 3DUDGLJP 6KLIWV LQ WKH \$SSOLFDFWLRQXV\ RQ, QIULQJH
3URSRUWLRQDOLW\ 3ULQFLSOH &KLQDQDWLRQ 3URWHFWLRQ &KLQDQDWLRQ
&RQVXPHUV XQGH %LJ 'DWD (UD

/ :DQJ &RQVXPHUFWLRQ RWDQGDUG 6\ VWHP '2, M FQNL
IRU WKH 3ULQFLSOH RI 3URSRUWLRQDOLW\ LQ WKH 3URFHVVVLQJ
RI 3HUVRQDO /DZ 6FLHQFHV

; &KHQJ 5HVHDFK RQ WKH)DLU 8VH RI 3HUVRQDO
,QIRUPDWLRQ LQ &KLQDQDWLRQ V &LYLO &RGH 3HNLQJ 8QLYHUVLW\

/DZ -RXUQDO S
/ .RQJ /HJDO 3URWHFWLRQ RI 3HUVRQDO 'DWD 3ULYDF\

:XKDQ 8QLYHUVLW\ 3UHYV S
6 /LDQJ 2Q WKH 0HDVXUHPHQW RI ,QWHUHVW UG
HGLWLRQ 3HNLQJ 8QLYHUVLW\ 3UHYV S

* 0D 7KH 3URWHFWLRQ RI 3HUVRQDO ,QIRUPDWLRQ LQ
(SLGHPLF 3UHYHQWLRQ DQG &RQWURO 6FLHQFH
7HFKQRORJ\ DQG /DZ &KLQDQDWLRQ (QJOLVK 9HUVLRQ
'2, M FQNL FQ

Q
& 6KL /HJDO 3URWHFWLRQ RI 3HUVRQDO ,QIRUPDWLRQ LQ WKH
3UHYHQWLRQ DQG &RQWURO RI 0DMRU (SLGHPLFV -RXUQDO
RI &KLQDQDWLRQ 8QLYHUVLW\ RI 0LQLQJ 7HFKQRORJ\ 6RFLDO
6FLHQFHV

5REHUW & (ULFNVRQ 2UGHU :LWKRXW /DZ +RZ
1HLJKERUV 6HWWOH 'LVXWHV WUDQVODWHG E\ / 6X &KLQDQ
8QLYHUVLW\ RI 3ROLWLFDO 6FLHQFH DQG /DZ 3UHYV
SS

% =KHQJ 6)HQJ 5HVHDFK RQ SULYDF\ SURWHFWLRQ LQ
WKH FRQWH[W URUP\ WKH 3ULYDF\ RI WKH